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THE ORGAN OF THE AMERICAN SOCIETY FOR THE STUDY
OF ALCOHOL AND OTHER NARCOTICS.

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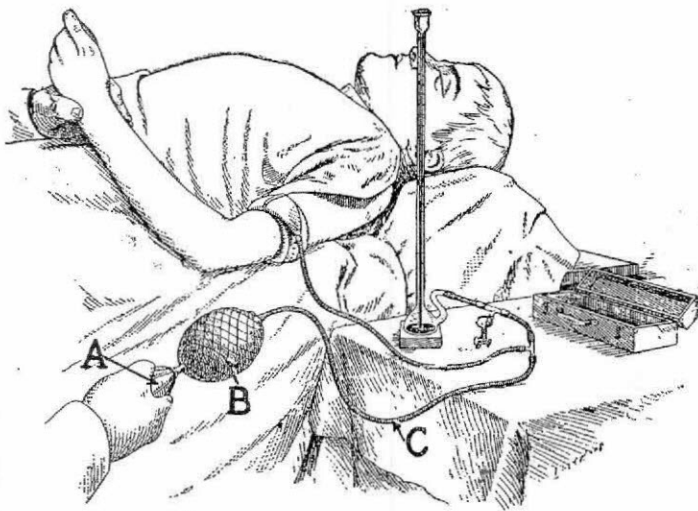
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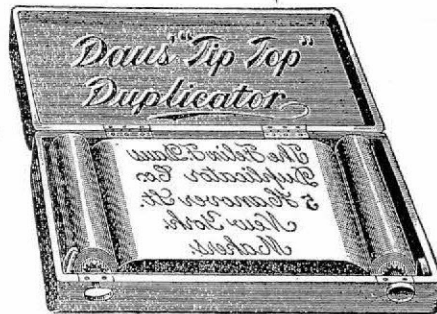
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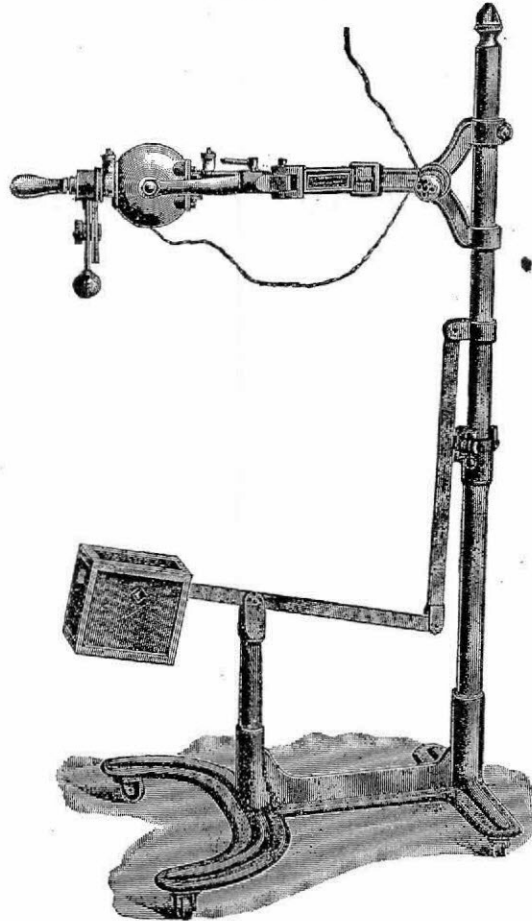


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SOME FORMS OF INSANITY DUE TO ALCOHOL,
ESPECIALLY IN THEIR MEDICOLEGAL RELATIONS.*

By CHAS. K. MILLS, M.D., of Philadelphia,
Professor of Neurology in the University of Pennsylvania.

In legal medicine, as in medical practice, the subject of alcoholism is of first importance. It ranks with syphilis in claiming the attention of the physician, and with traumatisms in holding the interest of the practitioner both of law and of medicine. The alcoholic, not insane, comes frequently under the hand of correction or of justice, although far more frequently escaping than he deserves if measured by the standards applied to other human beings. The insane alcoholic is both protected and neglected by the law, his protection expanding and his neglect diminishing as science and ethics present a better conception of his true condition and his real responsibility.

My object in the present contribution is to call attention

*Read before the Medical Jurisprudence Society of Philadelphia, December 19
1904.

to a few of the forms of insanity due to alcohol and other intoxicants, referring to some of their most important medicolegal relations, a subject the consideration of which might easily be expanded to a volume. It is necessary, therefore, to set somewhat rigid limits to the paper. Many efforts have been made to classify alcoholic disorders, the classifications having for their foundations a clinical, medicolegal or other basis. The most natural and usual subdivision is into acute and chronic alcoholic insanity. For both medical and medicolegal purposes a distinction must be made between acute alcoholism, not insanity, and acute insanity due to alcohol; also between chronic alcoholism and the chronic alcoholic insanities. Ordinary intoxication or drunkenness, however extreme, is not in the eyes of the law regarded as insanity, although both decisions and statutes differ as to the degree of responsibility incurred by one who commits a crime while in a state of acute intoxication. The question of partial responsibility has much interest in this connection.

Among the acute insanities due to alcohol are usually classed delirium tremens, and acute alcoholic mania. The epilepsy due to acute alcoholism may have attendant psychic phenomena of a dangerous character, and the lethal poisoning caused by alcohol may reduce the individual to such a state that he may become the victim of crime, and therefore the subject of legal and judicial consideration. The hallucinations and illusions in a case of delirium tremens are of such character as at times to render the subject dangerous and irresponsible; but of all the forms of acute alcoholic insanity, acute alcoholic mania is that which is of most importance in medical jurisprudence.

Any one of the numerous mental disorders with which the name alcoholic has been associated may, however, give rise to medicolegal questions. These may be few or many, according to the particular type of alcoholic mental derangement. The alcoholic somnambulist may steal or kill in his abnormal

sleep; the alcoholic melancholiac may commit suicide or destroy others because of his depressive delusions. The alcoholic, suffering from acute mania, may strike down his fellowman in his wild excitement. The victim of delirium tremens, in trying to defend himself from his tormenting hallucinations and delusions, may do great harm to others and to himself; and the alcoholic dement may be unfit to care for himself or his estate, and therefore may need the protection of the law. It is not, however, with these disorders of the mind due to alcohol that it is my purpose to deal in this contribution, nor with mere drunkenness, transient or habitual. I shall confine myself to two well-defined types of alcoholic insanity — the chronic alcoholic delusional insanity and dipsomania, under this latter head including some consideration of what by some writers is spoken of as pseudodipsomania.

Before taking up the discussion of chronic delusional insanity due to alcohol, a few words should be said about the physical basis on which this mental disorder develops. Close investigation of individual cases will often show that the chronic alcoholic delusional has a neuropathic heredity. Not infrequently this is a history of alcoholism in his immediate or somewhat remote ancestors, but it may be an inheritance of some other vice or disease.

Among the primary effects of the ingestion of alcohol is the production of vasomotor weakness, even paresis. Its continuous abuse causes pathologic changes in vessel walls, in kidneys, liver, stomach, and other viscera. In a general sense, the primary changes are congestive, the secondary, cirrhotic or sclerotic. In the brain the evidences of the prolonged excessive use of alcohol are especially notable, in arteriosclerosis, in opaque and thickened membranes, and in degenerate neurons. In a word, the effects primary and secondary, are those of a poison. This is none the less true because the nervous system and other organs and tissues of the bodies in some individuals offer great resistance to the toxic influence. The problem is a

simple one of original endowment versus an agent potent for evil.

The form of alcoholic delusional insanity to which attention will first be particularly called because both of its medical and its forensic importance is known by various names, as for instance, chronic alcoholic insanity, alcoholic persecutory insanity, and alcoholic paranoia. Perhaps none of these designations, nor others which have been suggested, are strictly applicable. The cases which may be placed under this type are not all in the strict sense chronic, at least the insanity is not chronic, but the mental derangement rather appears as an episode or outbreak in a case of alcoholism, the patient not having previously been regarded as insane. In other cases the insanity develops insidiously, the prodromal psychic symptoms appearing before the fully developed persecutory syndrome. The designation paranoia is applicable here as in other forms of toxic mental disorder, as those due to morphinism and cocaineism, if it is admitted that the term paranoia should be applied to toxic cases at all. On the whole, toxic paranoia is a useful descriptive term, as the train of hallucinations and delusions which are usually present in alcoholic and other toxic cases has commonly distinct resemblances to that which is exhibited by the ordinary case of paranoia or monomania. The toxic cases also show some systematization; although this is usually of a feebler character than that presented by nontoxic paranoia. The cases of alcoholic persecutory insanity, as I have seen them, might easily be divided into several classes, according to the peculiarity of onset and of course. Those most commonly observed are of two kinds, namely, one in which the delusional state comes on slowly, or at least, not suddenly, and not necessarily with reference to any particular debauch, although a period of great excess may cause the hallucinations and delusions which have been imminent or just apparent to elaborate rapidly and become obtrusive. In these cases the delusions are often not violently expressed or exhibited, but

the cases for this very reason may be more rather than less dangerous. In a second class of cases, the alcoholic usually not having shown any previous signs of insanity, the mental disorder appears suddenly or rapidly, the symptom-complex being one in which hallucinations of hearing and sight are associated with delusions of suspicion and persecution, these being often of a revolting character. The term chronic alcoholic persecutory insanity is perhaps more applicable to the first of these classes, although in the second the acuteness of the derangement is not its dominating feature, in fact, the outbreak may be only the first of a series of similar attacks, which will occur from time to time in the further history of the patient. In the more chronic form of the disease, the delusions of persecution may continue for a long time, and may be in whole or in part suppressed for considerable periods. Recovery is more likely to take place in the cases with recurring acute attacks, although in both forms the delusions under treatment may disappear, too often, however, to reappear after a longer or shorter time.

As the chief purpose of this paper is rather to present the medicolegal than the medical aspects of the mental diseases under discussion, I shall not go into a detailed description of any of the affections to be considered. Even before the insanity is evident the patient exhibits such psychic symptoms as weakness of attention, loss of mental grasp, and impairment of memory and of will. When the mental disorder is once established, the delusion which is the most common is that which springs out of marital relations. Whatever may be the explanation of this, and not a few explanations have been attempted, as, for instance, that which would refer the frequency of this delusion to the failing sexual powers of the individual, it is true that in both the more chronic and in the acute or subacute cases this false belief holds first place. Even in the acute case with excitement and with hallucinations, not only of hearing and of sight, but of unseen agencies like electricity or hypnotism, the

delusions often show a tendency to circle around the sexual organs and the marital relations. As Spitzka has put it: "The combination of the delusion of mutilation of the sexual organs with the delusion that the patient's food is poisoned, and that his wife is unfaithful to him, may be considered as nearly to demonstrate the existence of alcoholic insanity as any one group of symptoms in mental pathology can prove anything." While this statement is undoubtedly true, it must not be inferred that the above triad of symptoms is always present. I have seen not a few cases of alcoholic persecutory insanity, especially cases which might be described as of the quiet and more chronic type, in which the delusion of marital infidelity and of poisoning are in evidence, the latter, however, having weaker hold upon the mind of the patient than the former. I wish especially to emphasize the fact, one of great juridic importance, that the delusion of marital infidelity may alone be present, or at least demonstrable, in a patient as clearly insane as one with the whole train of delusions and hallucinations.

Before referring explicitly to cases of alcoholic paranoia with medicolegal consequences of a serious character, this is perhaps the best place to speak briefly and for the sake of subsequent contrast, of those cases of nontoxic paranoia which most closely resemble the alcoholic or rather toxic forms of the disease. These cases are by no means rare; they are seen both within and outside of institutions. I have had to deal with many of them, as well as with their families and friends in private practice. They are not infrequently in high places, and some of them in which the delusion of marital infidelity is the sole obtrusive feature of the case, continue to hold their places in society, in the professions or in business over many years, which are too often periods of self-denial and suffering for those who are the objects of their suspicions and accusations. Patients of this kind sometimes appear at our outdoor service for nervous diseases, commonly accompanied by their wives; and it is a curious feature about them that husband and wife

sometimes join in mutual explanations and descriptions without any appearance of feeling on the part of either. I remember one patient who frequently came to my outdoor service with his wife, and sometimes bringing with him the samples of the food and drink which he believed had been poisoned by her, asking to have them chemically examined in her presence. He appeared to regard the investigation as being due to her as well as to himself, and his twice-told tale was told again and again with smiles rather than with signs of depression; nevertheless he was in earnest and may at some subsequent time have fallen into a dangerous mood.

Although all cases of well-defined persecutory delusion may be regarded as dangerous, and especially those in which the delusions of marital infidelity and of unseen or destructive agencies are present, I believe that taking all cases together the toxic cases are more dangerous than those which develop simply on a constitutional basis and without any especial exciting cause.

The intelligent or educated paranoiac — clergyman, attorney, physician, publicist, author, or wealthy business man — and I have had patients representing all these and other equally important walks of life — is often by his own mental strength, or by this with the assistance of others, able to cope with his delusions sufficiently to keep himself from doing harm to the objects of his abnormal suspicion and wrath. Too much confidence should not, however, be placed in facts like these; the paranoiac with delusions of persecution, whatever his original mental stamina may be, is always a potentially dangerous individual, and the greatest care should be taken in giving an opinion and in taking action which may expose others to danger.

Recently I have been somewhat frequently consulted about a professional man of more than average attainments and standing, and have on several occasions seen the gentleman himself. Gradually a delusion of marital infidelity has be-

come more and more fixed in his mind. At first he had occasional and pronounced suspicions that something was going wrong with his wife; later he began to suspect the family physician, a gentleman of unblemished reputation, in whose case there was not the slightest foundation for any of the suspicions or accusations of the woman's husband. He next began to suspect employees, friends, and others. He resorted to various expedients in watching his wife, descending sometimes to despicable tricks in order to try to verify his suspicions, but, as he said to me more than once, he never discovered anything really wrong; and yet his delusion grew and became more and more profound and dangerous. Various measures of treatment were tried, but these only had a temporary palliative effect. In this case, so far as I could learn, there was no history of the use of any form of intoxicant. Other delusions of persecution were apparently not present.

Dipsomania, the medicolegal relations of which will be next considered, is an entirely different affection from either acute or chronic alcoholic persecutory insanity. The name is often loosely employed to describe different forms of insanity, the result of alcoholism. It should be given a restricted and definite meaning. Personally, I believe that the views of Magnan and his followers with regard to this subject are those which have the most scientific foundation. Dipsomania, according to these French alienists, and in accordance with my views, is a form of impulsive insanity with a hereditary basis. It belongs with the episodic insanities of the degenerates of Magnan. In the strict sense, it is not an alcoholic insanity; the dipsomaniac is a neuropathic individual, who, as the result of inherited insufficiency, physical and mental, may become the victim of a series of obsessions, of imperative concepts with the morbid impulses, which are their outflow. In one with the same constitutional basis as the dipsomaniac the impulses may take another direction, as for instance, to theft, arson or sexual perversion. The dipsomania may show itself by recourse to

morphine, cocaine, or to any other drug instead of alcohol. The dipsomania may develop the physical symptoms of alcohol, or even some form of true alcoholic psychosis as the result of his long-continued recurring excesses. These are incidents of his dipsomania rather than essential parts of it. The dipsomaniac may, during or after his excesses, have hallucinations and delusions similar in character to those which are exhibited by a case of alcoholic persecutory insanity; but these are not the proofs of his dipsomania, they are the symptoms of his excesses.

Dipsomania is often classed with the periodic insanities, and even with such affections as circular insanity, the manic-depressive insanity of Kraepelin; but it does not really belong here. The fact that the alcoholic or the drug excesses occur at intervals with longer or shorter periods of abstention, has caused it to be classed among the periodic or cyclic mental disorders; but periodicity is not an essential feature, as is noted by the fact that a patient with true dipsomania may have only one or two attacks in a lifetime.

Dipsomania is not only not an alcoholic paranoia on the one hand, but on the other it is not habitual drunkenness, to which also the term is sometimes loosely given. It should be remembered, however, that cases are sometimes observed which seem to hold a place between true dipsomania and inebriety, or between dipsomania and alcoholic paranoia. This is so evident that the designation pseudoparanoia has been suggested as applicable to a certain class of cases. These are individuals whose lives oscillate between intervals of tipping or hard drinking, of comparative sobriety and of spells of insane alcoholic excesses. They are at best described as chronic alcoholics with dipsomaniac episodes. Like the dipsomaniac they do not as a rule struggle, or at least not with any persistence, against the impulse to drink. I have seen a few illustrations of true dipsomania in the sense of Magnan, and of a larger number of cases which might be properly classed as pseudodip-

somania or of chronic alcoholism associated with dipsomania.

The dipsomaniac may begin his recurring alcoholic excesses in early youth or in later life; he may have attacks only at intervals of years. His alcoholic episodes may come at regular or irregular intervals, changing in frequency; or his attacks, at first infrequent and relatively mild, may increase in frequency and severity with slow or rapid strides. All these cases, however, if they are examples of true dipsomania, present the same general characteristics, namely, freedom from excess for a longer or shorter time, even for a period much prolonged; prodromes, in which mental depression and physical distress, showing themselves in varying ways, are prominent; struggles of will with inclination, the latter triumphing; keen appreciation, to the point of mental anguish, of the evils of the course to which they are irresistibly impelled; and strongly announced determination to drink no more when the episodes are once over. In many cases the dipsomaniac is a man of strong parts, and in some instances one who shows brilliancy of intellect; and, like his brother degenerate, he may, for a time at least, fill high places in his business or profession. Measured by other men, however, his life does not run a long course, and what he gains by transient brilliancy of achievement is counterbalanced by what he loses as a result of his relatively early breakdown.

Various forensic questions, more or less grave, may arise in connection with the forms of alcoholic insanity just considered; indeed, almost any of the numerous medicolegal problems which come before courts, commissions, and juries is possible in such cases. Some of these in connection with which I have had personal experience, are actions growing out of homicides, assaults, or criminal business transactions; proceedings for the appointment of a committee or guardian and for superseding such committee or guardian; proceedings for the commitment or sequestration to institutions, and actions for divorce or separation.

Some years since I was called in consultation to see a young German living in one of the streets of the southwestern part of Philadelphia. This man almost continuously used alcohol, and at times used it to great excess. He was, however, a man of otherwise good habits, attentive to his business and kind to his wife. He gradually showed evidences of mental disorder. At first it took a religious character, and he spent much time in reading the Bible. He soon became morose and suspicious of those around him, and eventually began to suspect his wife of marital infidelity and of designs to poison him. In one way or another he communicated these delusions or suspicions to his neighbors and others, and on several occasions threatened violence against his wife.

When seen by me very little could be got from him directly, as he confined himself to a few derogatory remarks about his wife. He was, however, sullen, morose, and cast threatening glances at his wife when she entered the room or attempted in any way to interest him. The history given of his actions for several weeks clearly pointed to the existence of a dangerously delusional state, and this, in connection with what was learned at the time of the examination, led me to the opinion that the man was suffering from a form of paranoia or delusional insanity, due in all probability to alcoholism. I recommended that he be sent as soon as possible to a hospital for the insane, but action was deferred. Other physicians were called in, and efforts were made to treat him at home.

A week or two after my examination, without any warning, he suddenly seized a chair, struck his wife to the ground, and before others could reach him had almost crushed her skull. Her scalp was cut open by the blows from the forehead to the nape of the neck. In spite of the injuries she made a good recovery, the skull apparently not having been fractured. He was at once taken to the hospital, where he remained for some months, recovering largely if not entirely.

The defense of chronic alcoholic delusional insanity or al-

coholic paranoia is one which in my experience has not often been made in cases of homicide. The questions of responsibility which arise in connection with alcoholism are such as to make attorneys hesitate about using this plea. Even when the delusions alleged to be present are with some probability the result of the abuse of alcohol, it generally is considered better to present the mental disorder of the patient without reference to its etiology.

About seven years ago, in one of the interior counties of Pennsylvania, a physician was placed upon trial for his life. This man was a graduate of the University of Pennsylvania, and was possessed of unusual professional and business capacity; he had in fact become one of the most prosperous and best known physicians of the district of the state in which he lived. He shot and killed his next door neighbor, an old personal friend, and also at the same time shot his wife, but not fatally, accusing his wife and neighbor of adultery, and before shooting trying to force a confession from them. He gave himself up, and a few months after the homicide was placed on trial. He was defended with great ability and energy, a verdict of murder in the second degree being secured. This was considered by his attorneys and those interested in the man as a successful issue of the case for him. Public sentiment was aroused against him, and it was generally believed that he would be convicted of murder in the first degree.

His defense, which was maintained by a number of medical witnesses from his own neighborhood and from a distance, was delusional insanity, his chief and indeed his only demonstrable delusion being that of marital infidelity. The expert witnesses for the defense were examined on the evidence presented by both the prosecution and the defense in the court-room, and also on the results of their examination. They testified to their belief that the accused was insane, that the form of insanity from which he was suffering was one of the types of delusional insanity, and that the special delusion was that of marital infidelity.

It was shown that he had been much disturbed in mind after the death of a favorite daughter, that he had suffered from sleeplessness, headache, and various neurasthenic symptoms, and that the fixed idea had taken possession of him that his wife and neighbor were criminally intimate, although he himself could present no facts in the least degree substantiating this opinion. The evidence, both lay and medical, as to the insanity of the prisoner was contradictory, although much of it favored the theory of the existence of the delusion of marital infidelity. It was known, although this was not demonstrated at the trial, that the prisoner was addicted to the use of alcohol. I have seen this man on several occasions at long intervals, since he has been in prison. His physical health first improved under confinement and his delusions seemed soon to entirely disappear. Later his physical health deteriorated to some extent.

In cases of dipsomania, as in alcoholic persecutory insanity, one who has committed an assault or homicide may have insanity plead in his defense. If the case, however, is one of true dipsomania, the crime is likely to have been committed during a period of excess, and because of the excitement and loss of control dependent upon the state of debauch, rather than the more or less deliberate result of dwelling upon a delusion, such as that of marital infidelity. It must always be remembered, in this connection, that I am speaking of dipsomania as the disease understood by Magnan and his disciples, and not of the so-called dipsomania of many writers, to whom the dipsomaniac means simply a chronic alcoholic, sane, or insane, who indulges more or less frequently in debauchery.

When dipsomania is advanced as a defense in criminal cases, especially in cases of homicide, assault with intent to injure or kill, rape, and stealing or embezzlement, this defense is often looked at askance by courts and juries, being sometimes regarded as a subterfuge or a plea which is used only because other more efficient pleas are lacking. It has been testified by experts,

with the approval of courts and communities, that no such disease as dipsomania exists, that it simply is periodic drinking. In order to establish dipsomania as a defense in criminal cases, it is necessary to show more than the recurrence of periods of debauch. The family history and the past history of the individual must be thoroughly studied; the occurrence of other evidences of abnormal mentality must be searched for with diligence, and often they are within easy reach of the investigator; sometimes they are hidden, the concealment being assisted even by those who are most interested in the successful determination of the existence of dipsomania as a disease.

In an interesting contribution on dipsomania as a defense for crime, Kiernan gives the details of a case tried in Chicago, about 1895 or 1896, the writer of the paper and several others having been witnesses in the defense:

A man named O'Brien was tried for homicide, having shot a woman who at one time had lived with him in open adultery, and at a later period had become his wife. The jury in this case brought in a verdict of not guilty, on the ground of insanity, conditional on the court committing the accused to an insane hospital as a still dangerous lunatic. The court declining to assume the conditions imposed by the jury, the verdict did not stand. The jury then attempted to bring in a verdict of guilty of manslaughter, but it was finally discharged unable to agree, several of its members adhering to the view that the man should be acquitted on the ground of insanity. As Kiernan says: "The jury was clearly convinced that dipsomania was a well-defined form of insanity, and that the subject of it was so dangerous as to require permanent insane hospital treatment."

In this case examinations of the accused were not made by medical witnesses for either the prosecution or the defense, but the opinions given were based entirely upon hypothetical questions presented by the attorneys on each side. These hypothetical questions were widely different, and show how facts and

alleged facts can be skilfully marshaled by opposing interests. On the hypothetic statement propounded by the defense, the witnesses held that the accused was insane, while on that of the prosecution, the other witnesses stated their belief that he was sane.

The evidence seemed to show that several members of the family of the accused were insane or idiotic, and one or two the victims of periodic drunkenness; that in his youth the man had done some peculiar and extraordinary acts; that a few years before the commission of the crime, after a period in which he was morose, sullen, gloomy, and depressed, he indulged in excessive drinking, during which he was aggressive and violent.

Recently I saw an interesting alcoholic case illustrating the tendency to criminal financial transactions:

The patient was a man about 37, the son of an intellectual father, and a man of unusual education. He was especially noted during his college days and afterward as a fluent speaker and rapid thinker. He was regarded as unusually bright, although perhaps as somewhat visionary. Several years before coming under observation he became interested in various financial schemes, particularly mining operations, acting with others chiefly as promoter and organizer. A few of the schemes in which he was interested were successful, a large majority of them were not, and after making and losing money for others and himself, he became actually bankrupt. In the mean time he had taken to drinking, especially to the use of whisky. His own ideas, or at least statements, regarding the amount of whisky drunk by him were somewhat vague, but both from his own admissions and from accounts given by his friends and relatives, he gradually acquired the habit of using alcoholic beverages, especially whisky, in large amounts. Several months before he was first seen by me he had begun to pass checks, using his former good credit and the credit of others to get them cashed. During a period of about three months he had been in two different institutions for treatment; when he

left the last, about three weeks before the time of my examination, he had gone to a western city ostensibly to take a position, but after reaching there he began to drink heavily, and again gave checks for money for which there was no balance. Leaving this city he went to another, and there persuaded an old college friend to cash him a check, for which he had absolutely no account. Examination showed some loss of memory with hallucinations, both of sight and hearing, and delusions regarding money and property, although the latter were not continuously determinable. He saw some one standing beside his sister when he was talking to her, and warned her against this person, although there was no such person present. He also talked of being in some way acted upon by electricity, which was conveyed to him down the corner of the wall. He also spoke of pigmies being in the room. When asked about his improper money transactions he would acknowledge that he had given the checks, that he had not the account to meet them, and in the same breath say there was some mistake about the matter. He was physically much run down.

In connection with our discussion of alcoholism and the alcoholic insanities, the question of what to do with the alcoholic is, of course, one of first importance. If the physician has before him a clear case of alcoholic persecutory insanity or of dipsomania, during the period when this disease expresses itself in excitement and well-marked hallucinations and delusions, or indeed, of any form of well-defined insanity due to drink, he will experience no particular difficulty in dealing with the question of sequestration. He will be as much justified in certifying to insanity of this kind as to any other form of mental derangement, and he will be upheld in so doing by any court, presuming, of course, that he has taken the reasonable precautions and has used proper diligence in arriving at his conclusions. I might, however, in passing, remark that there is one danger, although perhaps not a serious one, in certifying alcoholics who are temporarily insane. Such cases some-

times clear up with unusual rapidity as the result of the mental shock caused by depriving them of their liberty, or from causes which are not apparent, and the patient soon after admission to an institution presents no signs whatever of mental disorder to the physician in charge. In a long experience I recall one such case, that of a woman who had been for years a chronic alcoholic, who had had several attacks of acute alcoholic insanity, and who on the day of her commitment had given evidences of hallucinations and delusions of a persecutory type, and moreover, had been violent and destructive. The insanity of this woman was certified to by another physician and myself; she was taken to one of our best known hospitals for the insane, and was discharged in a short time, she not having shown any signs of insanity after her admission, although it is probable she relapsed into her alcoholic habits and had subsequent attacks of mental disorder.

In many cases of chronic alcoholism the lives of all who come in contact with the alcoholics are rendered miserable, and in some instances unsafe. In many cases, also, it is probable that if steps could be taken early for the commitment of the alcoholics to institutions for care and treatment, not only would much suffering on the part of families and friends be saved, but the alcoholic himself might receive efficient help toward relief of the habit and restoration to health. In most of our states the laws are so framed that alcoholics cannot be deprived of their personal liberty by certification or by the other methods applicable to ordinary cases of insanity. In England, and in Connecticut, and perhaps in some other states of this country, special laws regarding the restriction of inebriates have been in force, these being mostly so drawn as to allow of the commitment of the inebriate or alcoholic under certain special provisions for a period of a year. — From *American Medicine*.

THE PRESENT POSITION OF THE MEDICAL PROFESSION IN RELATION TO ALCOHOL.

BY SIR THOMAS BARLOW, Bart., M.D., London, England.

What is the present average attitude of the medical profession with respect to the use of alcohol in health and disease?

I think, although there is a certain resentment against overstatement and too wide generalizations, it is right to describe it as that of the open mind. This was not always the attitude.

Fifty years ago, when the "Temperance and General Provident Life Association" was formed, some of its early directors had been refused at other life offices because they were abstainers. That seems now ludicrously inconceivable. Even so late as thirty years ago, when the Temperance Hospital was founded, I recall that there were some serious threats to set in operation a coroner's inquest if fatal cases of any kind should be recorded in which the administration of alcohol had been withheld.

When we reflect on the enormous swing of the pendulum since so recent a period as that of Dr. Todd, when the solitary prescription for grave febrile illness was "more brandy," it is worth while to inquire how the attitude of the open mind has been brought about.

I think that it has been brought about by increased knowledge coming from a multitude of varied experiences converging along these three lines: (1) Facts showing widespread and insidious pathological effects of alcoholism; (2) observations showing the greatly over-estimated value of alcohol in the treatment of disease; (3) the evidence that alcohol is not a

necessity as an article of diet in the different avocations of life.

Let us consider very briefly these lines of increased knowledge. As to the pathological results of alcoholism we have been long familiar with the greater evil induced by frequent nipping than by occasional drunken bouts.

Of all direful effects of frequent and persistent nipping there are none more interesting than those relating to the nervous system, of which we have learnt so much of late. Alcoholic neuritis is certainly in some of its forms amongst the most painful and intractable ills which flesh is heir to, — and yet with time and absolute abstinence what wonderful recovery may be seen when elimination has been allowed its full opportunity. We have learnt lately how remarkably alcohol associates itself with other poisons in the joint production of neuritis. The arsenical beer cases at Manchester showed an intensity and gravity of symptoms worse than arsenic alone or alcohol alone is usually capable of producing.

I believe that the same thing will prove true of plumbism. I am sure that it can be said of syphilis and alcoholism in combination, viz.: that they reinforce one another in pathological effects. I have seen one remarkable case of severe peripheral neuritis in a young man, left after typhoid fever, in the course of which enormous daily doses of brandy, champagne, and port had been jointly administered; and another case in a girl who had suffered from severe and protracted broncho-pneumonia having large and closely repeated doses of spirit with very small quantities of food for some weeks. These cases, with others that have been published, have convinced me that alcohol may reinforce the maleficent effects of the toxins of acute specific disease in the same way that it reinforces those of arsenic.

Observe again how closely the recurring administration of alcohol in tablespoonful doses every two or three hours by the lous nurse in fever simulates the nipping of the inveterate

tippler. The recurring dose day after day, and sometimes week after week, is given with mathematical accuracy before the previous one has had adequate time to be eliminated.

I cannot but refer to a form of peripheral neuritis which is seen sometimes in the old and bedridden. Many who quote the adage that "wine is the milk of old age" little think that when they pour ounce after ounce of port wine down the throat of their aged relative, giving little or no solid food with it, they are probably accentuating the contractions of wasted limbs, which make necessary changes of position often exquisitely painful. The absolute withdrawal of alcohol may be followed by a lessening of such painful contractions and an improvement in the power of taking solid food.

Viewed from the clinical side the psychical manifestations, viz.: the romancing, the torpor, the alterations of memory, the delayed cerebration, the lack of emotional control, the tremors which so often accompany peripheral neuritis are quite enough to show that not in the peripheral nerves alone is damage to be sought. And we now know that finer methods of anatomical investigation show extensive changes in nerve cells and their processes.

And this leads us to the far-reaching investigations of Dr. Mott on the histology of insanity, which show how much larger a share alcoholism plays in certain types of mental diseases than we had hitherto supposed.

I should like briefly to refer to the more fundamental question of the influence of alcohol on the circulatory system.

Physiology teaches us that one of the earliest effects of the absorption of alcohol is in dilating the peripheral arterioles, and that for a short time there is increased blood pressure. Now, although the result of elimination may be to leave matters much as before, there seems little doubt that rapid succession even of small doses leads in the long run to a loss of elasticity of the vessels, and subsequently to irritative overgrowth of fibroid tissue in their walls.

The heart wall would seem to suffer in a way very similar to that of the vessels. In the alcoholic neuritis cases one often meets with examples of thin dilated fibroid hearts with rapid tictac or embryonic-like sounds. But there are also cases, especially in young adults, of alcoholic cardiac dilation, in which causes other than alcohol can be excluded. They were observed by Sir William Roberts in Manchester, and have been carefully described by Dr. Graham Steel and others. They seem to me to deserve close study, because there is probably some parallelism between them and the dilated hearts caused by the influenza, rheumatic, and diphtheritic toxins, and it is certain that some of them are capable of recovery if alcohol be entirely withheld.

In the conditions of inebriety from drug addictions, either of opium or its derivatives, cocaine, caffeine, antikamnia, etc., etc., we find less extensive and a considerably different pathology. Changes in which the liver, kidneys, spleen, and sometimes in old chronic cases the heart, are involved, but entirely different from the vascular and structural changes from alcohol. The drying up of the secretions from the continual use of the drugs and the corresponding digestive disturbances with a depressed peristaltic action, causes the food to remain in the stomach six, eight, or even ten hours, resulting in dilatation of the stomach and absorption of ptomaines, leucomaines, and toxic extractives from retained feces, the toxins and autotoxins resulting therefrom produce centric intoxication with high arterial tension, which prolonged considerably is responsible for the changes in the heart muscles, especially hypertrophy of the left ventricle. The hypertrophic spleen from constant encroachment is frequently in evidence long after. The kidneys overworked from being compelled to excrete larger amounts of toxic matter naturally excreted by the skin; from the vascular changes in the uriniferous tubules being clogged by the isomeric morphine salts; the liver engorged and loaded with retained excretive material, creating dimin-

ished functional activity followed in the withdrawal of the drug by over activity, with diarrhoea and sometimes vomiting; the disturbance of the vaso-motor system induces a train of symptoms of physiological impairment due to perverted blood supply. The increased action of the nerve elements demanding increased nutrition, which is impossible to furnish from the perverted blood supply loaded with ptomaines; resulting in the necessary katabolic changes. These in general are the causes producing all the mental and moral obliquity so prominent in drug addictions.

The known pathological lesions from drug addiction do not seem at all commensurate with the results produced in the individuals using them, and I have no doubt but that the future close study will demonstrate many now unknown lesions.

But let us turn our attention again to the alcoholic inebriate who has gradually passed through all those stages of moral and physiological degenerations until we find him reeling along the street in a more or less destitute, depraved, and excited or dejected condition. We have shown that he is the victim of chronic disease, and therefore should excite pity and forbearance from his fellow beings instead of contempt and derision. He should be assisted into an ambulance and carried to a hospital, where he can be given a careful medical examination and proper treatment. Instead of this what do we find? He immediately falls into the hands of the law, and, if unable to make satisfactory progress on foot, is rudely bundled into a patrol wagon and lodged in a jail without either consideration or attention. If he survives to face the judge at the next sitting he is fined or committed without thought of medical attention until just before or after his final collapse, resulting in a death certificate, possibly an autopsy. There are reported in the daily press in the city of Buffalo alone within six months twenty-seven cases of death within the penal institutions without any medical attention whatever. Custom has

considered these cases of inebriety as self-imposed, while the truth shows that they are no more so than other diseases. Why not imprison rheumatics who hobble along the public highway exciting juvenile mirth, or the epileptic or the typhoid patient who in his mania is disturbing his neighbor? Why? Simply because we have not gotten into the habit of regarding the inebriate with discretion.

In England they have had for some years both certified and state reformatories for the care, cure, and benefit of inebriates in general. The certified reformatories are private corporations licensed by the state and under the control of the state inspector, the same as the state institutions. There are now eight of these institutions doing grand work, with two or more under construction.

The quackery of home cures and specifics for the cure of alcoholism is a ridiculous affront both to the profession and the public.

The necessary remedies to cure or relieve the inebriate are in the laboratory of any reputable physician, or readily obtainable at any supply station, and these remedies are just such as the pathological degenerations in each case indicate, just as in any other diseases.

In general the materia medica and therapeutics of inebriety embrace, first, eliminants, chemical, hydropathic, electric, or thermal. Stimulants, cardiac, stomatic, and nerve tonics also alteratives, and may be selected by any physician to suit the case in hand. That strychnine is a physiological antidote to alcohol, and that if the system be saturated with atropin the patient will soon experience a repulsion for alcoholic beverages, is well known. Combining this knowledge with the knowledge of their harmful qualities in overdosing or long continued use, etc., are also sometimes factors in the treatment of inebriety.

Now, in conclusion, and in reviewing the demonstrable pathological lesions produced by the more or less continued use of alcohol, and the knowledge of the extensive havoc

wrought by alcoholic intoxication on every side and in every form, together with the acknowledged fact that alcoholism is the most prevalent of all the predisposing factors of disease, statistics showing that alcoholics have the highest rate of mortality, and, as I have shown, the continued use of alcohol destroys the lines of defense on the part of the body reserved to protect themselves against invasion of disease, and laying aside the large enumeration of social burdens for which alcohol is responsible or the crime directly attributable to its action, the suffering and misery of the families and communities of the inebriate, and the fact of its being the never-failing source of fifty per cent. of all crimes, and the source of supply for our hospitals for the insane, almshouses, and other eleemosynary institutions, gentlemen, is not the subject of alcoholic beverages or its indiscriminate use otherwise within the system in the form of patent nostrums, many of which have a greater proportion of alcohol than does whisky, a subject not only worthy of our earnest consideration but of every endeavor to correct? — *Temperance Record.*

Dr. Brewer of the St. Vincent Institution in St. Louis says: "It can be asserted with great certainty that the boy who commenced to use cigarettes at ten will drink beer and whisky at fourteen, take morphia at twenty-five, and spend the rest of his lifetime alternating between cocaine, spirits, and opium."

Last year there were brought into this country 700,000 pounds of opium and a ton of morphine, which is five times as much as was used six years ago, and the *Chicago Tribune* estimates that a million people in this country are addicted to the use of either morphine or cocaine.

INEBRIETY AND SOME OF THE MEDICAL PROBLEMS OF ALCOHOL.*

BY G. H. BENTON, Ph.C., M.D.

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The term inebriety is considered to cover all degrees of alcoholic or drug stimulation, continuously or periodically indulged in as a habit, usually expressed by the terms alcomania, morphomania, cocainism, acute and chronic alcoholism, dipsomania, etc., etc. Therefore the subject with its physiological and pathological significance is so extensive as to render it only possible in this paper to touch in a general way some of the pathological lesions leading to it with their results, etc. In fact, this paper is more confined to that branch of the study of inebriety known as the medical problems of alcohol.

The subject of alcoholic inebriety has, on the part of the medical profession, considered as guardians of public health, professionally and many times individually, been more seriously neglected or regarded as inconsequential in proportion to the awful havoc it has wrought than all the other branches of preventative medicine combined.

The immediate study of inebriety and its causes, by some of our best scholars in the medical profession, has led to results of unlimited value to the profession generally and subsequently of course to the whole human race. The fact that alcoholism is now accepted as a disease rather than a vicious habit will eventually direct many more patients to proper treatment and care instead of allowing them to drift unaided to utter ruin.

* Read before the Cattaraugus County Medical Society, Salamanca N. Y. November, 1904.

The medical profession as a whole are in a position to do more to promote total abstinence than all the other sources combined, and I regard it their duty as guardians of public health. The public has as much right to expect instructions and advice relative to physiological and hygienic subjects as they have to expect healing, and yet what deplorable examples many of us exhibit along the lines of temperate living.

Alcoholic inebriety may be termed toxic degeneration, and is a disease produced by definite pathological lesions, numerous and varied; and the difference in the susceptibility of the disease in different individuals is a marked but dangerous feature. It has led many an unsuspecting person to their ultimate ruin, as the prevailing impression in the minds of most individuals is: "I can drink alcoholic liquors with impunity," and "all I drink would not injure any one." This is at first only egotistical self-flattery; later on in the progress of the disease it is a sign of mental perversion. Only comparatively a few of the vast multitude of persons whose physique and conditions show toxic degenerations from the more or less continual use of alcoholic beverages will admit either to you or to themselves that they are using alcoholic liquors to an appreciable extent.

The many pathological degenerations of inebriety vary somewhat in proportion to the kind of liquors imbibed. If the drink is of the lesser concentrations of alcohol, such as beers, wines, ales, etc., one will find more of the fatty degenerations, and, early in the course, less sclerosis, while the more concentrated forms, as whisky, brandy, rum, gin, etc., insure early sclerosis, and all forms produce acute and chronic gastric catarrh as one of the primary symptoms, together with cirrhosis or fatty degenerations of the liver, kidneys, and heart, sclerosis and atheroma of the blood vessels, with shrinking and atrophy of both cells and nerve fibre and destruction of the dendrites. Arterio-sclerosis, the first and most common lesion found in inebriates, is a degeneration of the wall structure of the arteries, beginning in the capillaries of the brain

and extending back to all the larger vessels, producing fibrous deposits in the intima with calcification of the middle coat and degeneration in the form of fibro-cellular tissue, destroying the integrity of the arterial walls and reducing their calibre. This diminished calibre in the coronary artery impairs its ability to transmit the blood current with nutrition to the heart muscles, hence the increased activity followed by increased exhaustion. Alcohol when introduced into the system coagulates the albumen with which it comes in contact. It absorbs water from the tissues. Its first impulse, therefore, on the circulatory system is contraction; but secondarily, by its anæsthetic effect it paralyzes the vaso-motor centers, vaso-dilatation takes place, reducing the bodily temperature and requiring increased heart action. This continual whipping up of the heart by the frequently repeated drink is one of the prominent causes of cardiac hypertrophy with fatty degenerations. The atrophic and hypertrophic heart, found in all inebriates, interferes with the quality and quantity of the blood requisite to supply nutrition and carry away waste products, resulting necessarily in dilatations and deposits of fatty cells in the place of muscle fibre. Likewise the liver and kidneys, by increased work, impaired circulation, and lack of nutrition, exhibit the different stages of degeneration. Dr. Berckley shows "That alcohol in the system has a peculiar eroding action on the cells of the brain. At first this is confined to local centers, which increases until finally a large part of the brain is involved." This readily accounts for the numerous signs of dementia and general paresis of inebriates.

The special paralyzing action of alcohol on the vaso-motor centers diminishing the arterial and capillary caliber, obstructing and changing the uniformity of the blood current, insures not only defective nutrition but an accumulation of toxins and a diminished power of elimination, while the direct actions of the toxins of the blood formed within the body act as irritants on localized centers and produce palsy.

Numerous authorities furnish evidence to show that these poisons, affecting the protoplasm cells and dendrites, cause great changes, sometimes swelling but eventually contracting the dendrites with tumefactions and fibrous growths. The direct action of alcohol is a protoplasmic poison. Its active affinity for water, albumen, and oxygen, with which elements it unites both in the blood and in the organized structures, especially its union with free oxygen in the blood, retards tissue metabolism. It increases the proportions of carbon dioxide and water. This lessens the bodily temperature and the sensibility of all nerve structures, cerebral, spinal, and ganglionic, either voluntary or involuntary. All this is clearly shown in neuritis. The toxic action expanding itself on the prolongations of the cerebral cells which pass down the cord in the paramidal tract or on those passing up the cord in the posterior columns.

And thus one could go on and cite authority after authority with the proof of their assertions on these questions, which have been disputed more largely from the standpoint of personal prejudice than actual knowledge from original research.

Now, as to the second converging line of increased knowledge, viz.: as to the greatly over-estimated value of alcohol in the treatment of disease. I suppose we should all agree without exception as to the benefit of alcohol in conditions of collapse, and I for one should be sorry to be deprived of it.

By the same showing, in what may be called the rigor stage of the acute specifics, alcohol may claim a place in our therapeutics. For although it does not give rise to heat formation, yet by flushing the arterioles of the skin it brings about a temporary feeling of warmth which is grateful.

Can we go a step further? The later effect of alcohol is undoubtedly sedative. Sometimes in asthenic delirium alcohol may serve a beneficial purpose by soothing the nervous centers, but this needs very careful guidance indeed. I take it that over

and above its restorative effect in collapse, we may sum up the useful effect of alcohol in disease in the proposition that it sometimes helps to make the patient feel comfortable.

Now if this were the solitary effect we might thankfully accept it and use it without scruple or hesitation. But is it the solitary effect?

There is no doubt that in febrile cases the increase in quantity of stimulants is often followed by thicker fur on the tongue, by the breath becoming foul, and by evidence of gastric catarrh; but apart from this obvious result, which in pyrexial states is not easy to strictly allocate as to its causation, let us inquire whether there are any cognate facts bearing upon the subject.

It seems pretty clear that alcohol lessens the activity of what has been called phagocytosis, that is to say, it interferes with the leucocytes in their role of attacking invading organisms.

There are abundant instances of alcohol lowering the cellular resistance, alcoholized people being very liable to cholera and pneumonia.

It has been found at the Pasteur Institute that the immunization of animals against hydrophobia, tetanus, and splenic fever can be inhibited by first alcoholizing them.

Referring to these observations in his Lees-Raper lecture, Prof. Sims Woodhead has made some very pregnant remarks: "Whenever a patient recovers from an attack of one of the specific infective diseases he recovers because during the course of the disease he has acquired a certain specific immunity, the result of changes in the tissues and fluids of the body. . . . If alcohol impairs this immunity in any way, or interferes with its production, the patient's chance of recovery must necessarily be diminished."

It may be said this is only laboratory therapeutics. What is the result of practical experience?

It is well to remember that two of the greatest clinical

teachers of our generation, namely, Jenner and Gull, who had both exhaustively studied typhoid fever in the dead-house and in the wards, were strongly opposed to a routine treatment of that disease by alcohol.

I shall never forget in years gone by how Jenner doctored the stimulants, and how he encouraged me to treat cases throughout without any at all, or in some cases to order a little at night as a sedative if there were much delirium.

As a cardiac stimulant does alcohol act beneficially in any way beyond dilating the arterioles? As a definite flip in failing systole it does not seem to be comparable with the hypodermic injection of strychnine.

To sum up in regard to the therapeutic employment of alcohol, I believe that we might be justified in using it as a temporary aid, but that its recurrent use in increasing quantities in acute disease is undesirable and ought to be very jealously watched as having insidious and special risks of its own.

With respect to the third line of increasing experience, viz.: the evidence that alcohol is not a necessity as an article of diet in the ordinary avocations of life, I will say very little. I should have liked to refer to the actuarial results of fifty years statistics in the "Temperance and General" life office. They are very striking because they give a comparison, not between teetotalers and drunkards, but between teetotalers and strictly moderate people of very much the same social grade and type. But it would take too long.

The real crux in regard to alcohol is the fact that the human body appears to be capable of eliminating pretty completely small quantities at a time, if sufficiently diluted and if adequate time be allowed between consecutive doses. It is undeniable that many men are in the habit of taking stimulants through a great part of their lives, and that they may live to old age without obvious or with only slight damage conclusively caused thereby.

If that be so why interfere?

The observations I will make are these: (1) There is infinite variety in different people as to their eliminating capacity. The tendency to early degeneration of vessels and of other tissues is in some families and in some individuals very insidious indeed. (2) The varieties of what may be called alcoholic evidences are very numerous. (3) Although there may be no obvious naked eye alteration, there may be deep changes and diminished resistance which accident or sudden acute illness may bring to light.

How often the ravages of alcohol have been unsuspected, and reveal themselves by a catastrophe like that of the explosion of an underground mine.

The great rising tide of criticism and condemnation of alcohol as a beverage and as a medicine only in certain limits is growing in strength and proportion every day. Politicians and leaders of public opinion are growing more and more timid in denouncing it. They realize that public sentiment is turning that way, and notwithstanding the hoarse voices of denial, and defense of this or that pro-alcoholic measure, there is evidently a great revolution coming on.

Sir Frederick Treves, a most eminent London surgeon, author, and teacher, recently made a short address at Westminster, London, denouncing the use of alcohol so positively as to create a sensation. It was a plain, practical comment on the delusions concerning its value which has been republished very largely by the press, and is sent out as a popular tract by some organizations. It is very evident that a sentiment welcoming such positive utterances is growing up in all parts of the country, which is simply voiced by the leaders of the profession when they dare take up the subject from a scientific side.

THE MORBID PHASES OF INEBRIETY.

BY T. H. EVANS, M.D., Philadelphia, Pa.

1. *Primary Acute Alcoholism.* This is the condition arising in a human organism of fairly normal type on the ingestion and assimilation of ethylic alcohol in sufficient amount to produce an excessive reaction, in which the individual recedes from average or normal self-control.

Undoubtedly the smallest quantity of alcohol is sufficient to put us under "the influence." I think the distinction should be drawn as in the case of supporting any physical burden, whether the weight is manageable or unmanageable.

This form of inebriety may be severe, even fatal, as in the case of children who have accidentally swallowed lethal doses.

2. *Secondary Acute Alcoholism.* Here the tissues of the body have repeatedly been subjected to alcoholic influences for variable periods, and at last give way to it, so that what is called the delirium tremens supervenes. The classification is proper, because, while acute, it is secondary to, or reinforced by previous conditions.

In primary acute alcoholism it is the body which is principally concerned. In the secondary form the mind is unsettled, and a general nervous storm is the basis of its striking effects. This would seem to show that alcohol is, firstly, dangerous to organic continuity, and that the mind is built up upon a necessity for certain organic relations. It is most important to realize what is implied here, because later we shall see that in neurotic, or in parasthenic individuals, those of originally, or secondarily,

abnormal organic basis, the phase of secondary acute alcoholism is rarely entered, or if so, greatly modified.

3. *Chronic Alcoholism.* This comprises organic degenerations of various sorts, and may bring about mental involvement when the brain and general nervous system is invaded. Paretic dementia and other terminal diseases may be traced to these long standing conditions, which, however, must be distinguished from

4. *Habitual Drunkenness.*

This is that phase of inebriety which occurs through a combination of mental and physical influences. On the side of the latter the conditions of the body are found abnormal before the alcohol is resorted to; there is also a distinctly pathologic process of mind in association with these structural difficulties.

5. *Narcosomaniac Alcoholism.*

Any narcomania is an abnormal craving for a narcotic. This may begin as the result of accident, curiosity, or design; but terminates in loss of self-control.

A narcosomaniac process differs from this in that it originates as a desire to gain relief from disagreeable or painful or distressing mental conditions. There are two types:

(a) The *simple or cyclic* (parasthenic), and

(b) The *irregular*, which is manifested in response to variable or transient factors of climate, hygiene, or other external environment, or because of organic disease, as of cancer or other painful reflex.

The first type, the *cyclic* or parasthenic form, is due to a condition as yet but rarely considered. Parasthenia is not pathologic in the strict sense of the word. Not a disease, it is, however, a modification of normal function or force, and may result from structural disorders. Parasthenia is not neurasthenia.

The latter is a weakening of neural power, essential or symptomatic. Parasthenia is a diverted form of nerve power.

Evolution takes origin in and through such modifications.

But the development may not be stable, and, in some instances, is fluctuating. When a patient is a sufferer from some organic trouble, which adds a secret element of friction to body or mind (to the disadvantage of metabolism), in successive or cyclic storms the body strives to react.

All of us experience normal function in periods of increased or diminished excitability, periods of good or bad temper, periods of acute appreciation, and periods of physical vigor or depression. The more unstable the nervous system, the wider becomes the range of the pendulum. With some patients the pendulum rarely fills a normal arc.

The peculiar irresponsibility of these people is but vaguely recognized, and many of them, martyrs to ignorance, pass an existence in misery of restraint for crimes committed in a virtual helplessness. These people do not all learn, but some do, that in the stage of rising tension a narcotic may quell the storm.

It is possible that the narcotic attacks first and more successfully the abnormal or unstable body tissues, clearing them out; if narcosis is prolonged, the more valuable tissues may become damaged. As much will depend on the patient's "governor" as on his "eccentric rod."

The stages of parasthenia are:

- (1) rising tension;
- (2) climax or outburst;
- (3) falling tension or relaxation;
- (4) fluctuating tension.

This last level may be above or below the normal point, and should be carefully estimated.

Most writers confuse in their cases the desire for narcosis or relief, and the desire for a narcotic or specific enjoyment. The narcosomaniac may heartily dislike narcotics, and between times avoid it. Even the narcomaniac will dislike the narcotic between times. But in his case dislike arises because of lessened capability for stimulation, perhaps on account of neuras-

thenia, perhaps on account of previous excessive stimulation. In the case of narcosomantic manifestations dislike is based upon certain factors arising in the course of cyclic parasthenia. Whether he chooses the narcotic blindly in the stage of rising tension, or purposefully in the effort to avoid dangers of the climax, or whether he takes the poison consequent to a primary acute alcoholism, this occurring from accident or curiosity or design, and leading over into the stage of rising tension after a fluctuating period, we notice practically no effort to use a narcotic after the climax is passed.

The relation of parasthenia to chronic alcoholism, as such, is rare. It is the long continued use of an ethyl alcohol preparation which is more apt to bring about histologic damages than isolated "sprees" would do.

So much by way of definition.

I shall not attempt the historic paragraphs of this subject, although they afford rich material. What cruelties have been done under the influence of alcohol, and its secondary mental and moral effects; and on the other hand, what pains have been inflicted by normal individuals on parasthenics and narcomaniacs.

But before taking up in detail the etiology (for narcomania, narcosomania, parasthenia, and neurasthenia are all middle or terminal products), it seems well to cite cases which may serve as a basis for argument:

Case I. A. D. Aged 24 years, student, athlete, unmarried. About 5 ft. 9 in. in height. Weight 189 pounds. Head well proportioned, but small as compared with general physique. Uses cigarettes moderately when not in training. Of average mentality. In college found some trouble keeping up with his class, chiefly, I believe, because of neglect and not inability.

On breaking training has a habit of going on a spree. In one afternoon and evening he will consume over a dozen gin fizzes and a number of other mixed drinks, in addition to straight whisky and champagne. Following this he will spend

the night in a typical "rouse." The next day occurs a reaction. Of course he was drunk through and through. But in the morning a cold sponge or plunge and a walk in the fresh air is sufficient to bring him around. The resilience of body and mind is glorious. I do not credit his athletic training entirely with this result; neither do I blame it entirely for his excesses. I think we ought to keep in mind the personal factor.

His outbreaks are rare. They do not seem to leave any permanent impression so far as our examination can show. It is possible that some mental deterioration exists or is in the way of appearing. I am led to believe, however, that he is none the worse for what he does. In the body there is a considerable amount of regenerative power. Scars do not always remain. Excessive burdens may be borne and recovered from. There is always the danger that in primary acute alcoholism hidden weaknesses may be uncovered. And in this lies the reason of secondary and dangerous developments.

Case II. Wm. D. Aged 54 years. A very heavy, thick-set, and powerful man. Has been married over 30 years. Always used alcohol in the form of beer, in large quantities and regularly.

The other day, while consulting me for a trifling illness, I noticed in his conversation that he showed signs of alcoholic delusions.

He began to tell me how he had all at once developed the power to invent things. "Strange," he said, "that I should have failed until now to know that I have this power." Then he went on to tell me of things he planned to do. It was distinctly a borderland condition of mind. There was always the practical element. And yet the indefinable aroma of insanity could be distinguished in what he said.

Such cases require watching. Very often apparently inexplicable outbreaks arise in the course of alcoholic insanity, which could have been prevented with the exercise of a little care on the part of friends of the patient.

Case III. R. Y., student, aged 21 years. Fair, sandy haired, of strumous temperament, about 5 ft. 8 in. in height. He speaks in even, well modulated accents. I do not think that an element of parasthenia enters this case. His father is a minister. Y. was raised to condemn alcoholic indulgence. He is not of great intellectual development, nor vigorous physically. Is very easily led by the wishes of his friends.

In his freshman year at college some one was foolish enough to make a wager that he could get Y. drunk. Of course this was accomplished. After three or four drinks of whisky one evening, which at first did not produce much effect, suddenly his whole being reacted. He immediately exclaimed that alcohol was the most glorious thing that God ever made. He drank all night. And in addition "did the town" with his "friends."

After this college work no longer held the *premier plan*. To the extent of his available funds this young man began to dissipate. He even went so far as to use money which was due for college expenses. He sent home lists of books (never purchased) and accounts of clothing which he claimed to have bought, as necessary, in explanation of his extraordinary expenses. The father very foolishly did not interest himself in the way things were going until too late.

Several times the young fellow was seen on the campus intoxicated. The college authorities were compelled to take the matter up, and so open was his misdoing and so unrepentant and heedless did he become that the result was a request for his withdrawal from college. He is now on a ranch in the West.

These cases of habitual drunkenness arising in people who might be called normal should be carefully investigated. Narcomania does not grow from a soil in which no seed has been planted.

Case IV. A. P. Aged 40 years. A short, stout, apoplectic individual. Married; a widower, with two children.

For many years, while carrying on an extensive business,

drank to excess. In the end he retired with a fortune. This has been largely spent in the years since.

This case is one in which habitual drunkenness has become complicated with chronic alcoholism. The man's speech, always slow and of level tone, even without expression, has in recent years become so slow as to be painful to listen to. Mr. P. has always been a courteous and agreeable companion, except for moments of rage, which are rare. Latterly, while suffering no actual alcoholic insanity, his mental processes have become extremely impaired. A chronic gastritis and valvular cardiac lesions with interstitial nephritis have been the means of ending his life.

This is a true case of narcomania. The factors which set it apart have been those of the wealth of the man and his opportunities for unlimited indulgence. When people are compelled to support themselves by some regular occupation, they do not dare spend the night over wine. Their outbreaks become the mere punctuation of existence, — a punctuation, however, which is explosive. So that we observe more violent and exaggerated effects in these than among the former class.

Case V. Harry N., aged 25 years, weaver. This poor young fellow has a defect in one eye of such nature as to be a constant annoyance to him. He has several opacities on the cornea, one of which is central. The other eye is astigmatic. Mr. N. complains of a constant distress of mind as a result of his eye troubles. He is unmarried. He is very fond of music and plays the cornet with some facility. His artistic temperament is crude, as might be expected from his necessity of life and surroundings. But in this case we can plainly note the conflict of sensation, intellect, and emotion and obviated expression, which characterizes cases of narcosomania.

He uses alcohol because it is accessible. The choice of a narcotic in cases of narcosomania may be governed by other reasons than accessibility, yet alcohol being so easily obtained is the commonest chosen.

With the first dose of the poison the whole attitude of the patient changes. Mr. N.'s face clears as by magic from the constraint and depression previously observable. He drinks, but never becomes drunken, until an enormous amount has been ingested. He talks more and more freely.

It is proper to distinguish between this loquacity and the maunderings of primary acute alcoholism. In the latter case it is not so much point as quantity which is attained. But the narcosomaniac talks better under the effects of the narcotic, until he becomes rightly drunken.

In the etiology the exciting cause is a narcotic, or a stimulant: alcohol, morphine, cocaine, absinthe, tobacco, autotoxins or waste products of the body (retained or increased), ill chosen food stuffs or improper regulation of the same, emotions, modes of life, etc.

We must keep clear in mind the case always as a patient, — a human individual. Narcotics and stimulants exert very different and divergent effects on normal and on neuropathic people. This fact is of fundamental importance, and one on the demonstration of which depends our ability to separate responsible from irresponsible cases. Many able papers have been written to show that inebriety is a disease, a morbid, even a psychopathic, process.

The etiology will be concerned with those original and primary elements which follow:

1. The exciting cause. The dose in proportion (a) to body weight, (b) to physical energy, (c) to intellectual ability. The dilution of dose. The manner of contact with the poison, *e. g.*, by mouth, by hypodermic injection, by inhalation (as of gasolene narcosomania), by rectal ingestion, by urethral or vaginal injection, or by other methods such as would be necessary to the assimilation of the narcotic. The purity or simplicity of the poison. Combinations of narcotics. Some cases, showing a union of the cigarette, cocaine, and alcohol habits; and others using morphine, alcohol, and absinthe. The fre-

quency of dose, and the regulation of quantity in accordance with frequency.

As to alcohol, it is in people from the age of 18 years up that we meet our cases, and from the standpoint of such I shall discuss the general method of case analysis. After the exciting cause the other etiologic factors are six, and as such form the second group with which we are concerned:

2. (a) Social rank.
- (b) General mode of life — occupation.
- (c) Mental power.
- (d) Intellectual attraction and interests.
- (e) Body vigor — constitution.
- (f) Somatic environment.

To begin with, other factors being equal, every individual starts out with a certain vital force or potentiality which may be decreased or added to during life, and which always is decreased by emotional or physical excesses. Whatever his environment, somatic or social, its effect is to be measured by the metabolism and the capability of the vital organism. More than this, the four primary protoplasmic faculties — contractility, irritability, nutrition, and reproduction — constitute, in the body, four great reflexes, namely, those of *initiative, temperament, constitution, and associability* (sexuality, growth, and thought). Evolution is manifested in the changes of these four organic reflexes, and therefore is fourfold in selective power. The element of thing-in-itself is active through contractility and initiative, so that the objections of determinism may be answered and a teleologic element added.

From this organic environment, so briefly hinted at, we turn to the social (or political) environment of the patient. Here we must consider: (a) rank (respect of community), and (b) occupation (duty or relation to community).

Our modes of life are, firstly, concerned in the etiology of all disease. It is not alone the exciting cause, or the micro-organism, which must be taken into account. It is the peculiar

personal factor of reaction which gives to any morbid process the distinction which characterizes a case. And our social relationships depend on our modes of life. I insist on this because I know of instances of young men and young women who have grown to maturity with no sort of idea of the accepted conventions of life. They have never really conceived the standpoint of the normal, and with so vacuous a notion of duty or responsibility, when impulses arise, have no means to correct opinion or form proper judgments. These moral ignorants are with us daily. A veneer of conventionality may hide them until a crime or a misstep discloses what is the true state of affairs. More often the primary misstep is taken in ignorance, and sexual or financial crimes which follow have taken place through an unreasonable or exaggerated opinion of the wrongfulness of youthful or original mistakes. Too many of us are left to grow up in almost ridiculous ignorance of moral ideals and civic principles.

Such of us as do not gain some knowledge of these matters by good luck remain to constitute a paranthropic class, — innocent, unmoral, and irresponsible. If in the case of one in this class an acute mind, needing some ideal, creates for itself, then in the event of a sound neural basis we have the reformer, the leader, the evolutionist; in the event of neuropathic taints, the flower blooms as a deadly nightshade to poison the community. But "*quae cum ita sint*" we must take measures to control these paranthropes and parasthenics, and to prevent unnecessary additions to their class. Yet it is inhuman to punish or pain them with measures unnecessary to their safe control. In limits, let them have freedom of initiative and the right to live and move and have their being.

This is the more important because in the case of narcomaniacs, or parasthenics, with the restraint, the forcible restraint, of the symptoms of the disease, and the lack of self-control of the patient, — his irresponsibility, — we are liable to exasperate and enrage him. It is because of the conflict

of passion and opportunity which takes place in this neuro-pathic territory that crime after crime and outbreak after outbreak of physical or moral violence occurs.

When we realize the etiologic value of a narcotic in true cases of narcosomania, in reducing an insufferable conflict in the personality of the patient, we shall understand that our investigations must go deeper than the mere discovery of what specific narcotic lies at the foundation of the symptoms.

3. To the exciting cause as the first factor, and the different modes of environment (social, intellectual, and physical), then we must add a third chapter. In this we must consider the resolution through the personality of the patient as a unity, of all these diverse elements.

The keynote, then, which I wish to strike, and in no uncertain tones, is this:

Each case of inebriety is the effort of the patient to accommodate to unsuitable or impossible environment, — which he attempts to do by altering, not the environment, but himself, by means of that which we call a narcotic.

The changes which occur will present themselves in the form of changes in the patient's organic reflexes. We shall note changes of initiative, temperamental changes, nutritive changes, and changes in the factor of associability. This is evolution of a hothouse variety, and unstable and unfit to endure.

To make an accurate study of the causation of inebriety as a disease we must understand the different modes of social, intellectual, and physical environment which he must translate. And I will describe five general phases of this:

A. In the mill districts and among work people. Here the corner tavern ranks with the corner chapel or mission in prominence and interest, and as the center of a faithful clientèle.

There is no more attractive apartment open to the public in this neighborhood than the saloon. While the dwelling

places of the work people are dingy and ill kept, if not even desolate, the saloon on the corner is a blaze of light, which by summer does more than attract the mosquitoes, and whose warmth in winter is even more grateful to the tired working man than the often chilly poverty of the chapel. Here in the saloon he finds companionship, rich and varied. At the meetings of his Lodge, or of his labor union, to whichever he may belong, there are questions of finance which weary him, although necessary. In the Lodge room, even among his own, he is self-conscious and ill at ease. A few, who gain first place, do so not so much through ability as through "brass." He feels the incongruities of their leadership more than he can put into words; many disputes may result in breaking up the lodge or the labor union because no one is able to put facts plainly and clearly before the meeting in words which will admit of no misunderstanding. Much of the ill-feeling which occurs in connection with these societies is due to a mistaken application of the meaning of a heedless speech. At these meetings are always present the neuropath and the parasthenic, who react very badly. At mass, or in the services of the churches, one side of the man, his religious nature, is aroused; if he is a neuropath this may or may not be beneficial, not that I would criticize religious services, except that since those services have arisen in the course of the normal development of individuals they are neither the expression nor the need of abnormal ones. Again, in the maintenance of these religious bodies financial questions arise which are not good for the neuropath. It is probable that he is not successful in earning a good salary. He desires to make a good appearance among his friends, and the annual fall collections or the monthly pay envelopes which are forced upon his attention may become sources of temporary mental derangement because of his unstable nervous system.

In his occupation, whether as a child, at school or as a youth or man at work, he is not consulted or examined as to

the physical condition which he presents and which must be decidedly influenced. Here we must consider the elements of eye strain, of chronic catarrhal processes, etc., which in their effect on the liver may bring about a symptomatic melancholia.

I do not know how often I have tried to draw attention to borderland pathologic processes, and I do so because I am persuaded that it is in these shadowlands we must find the seed-time of so much which grows up to injure the community and the individual. H. B. Alexander, in his "Poetry and the Individual," has drawn attention to the peculiar course which civilization has taken along certain lines of intellectual specialization, often to the detriment of body. It seems that with our increased life in cities we are originating new types. In the mill districts ideals are different and modes of life at variance to much which is considered standard among the thinking and speaking element of the community.

Sexual relationships are based on very different principles to what is usually thought conventional. I think we should consider these variations as evidence of development along lines of least resistance, and for which certain of our phases of civilization must be held responsible. The parasthenic, or the neuropath, is caught in a conflict of ideals as enunciated by his co-workers, and the ideals of the different ranks of society, with which he may come in contact besides.

Very often the neuropath retires from the unequal struggle. He will not do that which he can. And he cannot do that which he would. Of course he must live. Therefore he must work. Or steal. Or do something. And it is just here that the borderland of disease becomes the borderland of crime.

At his work the whole routine is unsuitable. His meal hours and his sleep hours and his rest hours do not coincide with the needs of his organism. And at home it is not to be expected that he will be understood. The other overworked, underfed, and underrested people have no time to help along the cripples and the wounded. It is all that they can do to

maintain life's unequal struggle for themselves. That they do so is a source of more than unconscious pride to themselves, because they realize so well what life's struggle is. Therefore they are even cruel at times to those that fail.

The neuropath is sensitive. He appreciates in his way far more than his associates. He even realizes his difference. And curses fate. But to no use.

When he drinks even he realizes the difference in effect on himself from that on others. It may begin, the drinking, as a simple act of sociability. Then comes the transformation. To the amazement of his friends, he becomes a different being. He talks fluently, and becomes the center of the crowd. While before he may have been nervous, irritable, and uncompanionable, with the first drink all this is changed. He dimly realizes that he is changed. He cannot bear to sink back into the old personality. He spends, he treats. The crowd is at his feet in admiration. Many of them become thoroughly drunken. He does not. With the majority his liberality leads over into a simple case of primary acute alcoholism, but the parasthenic, or neuropath, enters into the seventh heaven.

* These debauches, of which he is the leader, will become responsible for cases of secondary acute alcoholism, and the carrying on to worse stages of chronic alcoholics. As the drink passes around all these are sifted out, while here and there in the flash of light and hubbub before the bar among the crowd will stand out the brilliant narcomaniac or the transformed parasthenic. The next morning he is in the depths.

These individuals in their typical form afford a wealth of material to our novelists. They do not understand the really pathologic nature of the personalities they interpret.⁴⁶ Nevertheless it is our disgrace to leave the study of these cases in the novelists' hands, who certainly have not the training to unfold to the community, as we might, the really irresponsible basis of their actions.

These parasthenics may never be brought in contact with a

narcotic, or may resist it on account of religious or other scruples. When they do we discover cases of wretched temper or of impossible temperament, which makes the individual a source of anguish to himself and unsuitable for any use in the community. He is not fit for normal sexual activities, and either numbs his conflicting passions with a narcotic or succumbs to psychopathic influences. He is unfit for work of a prolonged or confining character, and so unsteady and unreliable as to find it difficult to hold onto any job. Then he may become subject to criminal influences. The neighborhood of a mill is not one to give opportunity to such individuals for betterment.

B. In the tenderloin districts of the city other conditions prevail.

Here we find the use of narcotics extending for the reason, not only of sociability and relief from disagreeable symptoms in body or mind, or as a thoughtless habit, but in order to produce an ignoble and factitious excitement. Nevertheless there are many criminals and prostitutes who absolutely refuse the use of any narcotic, and I am nearly convinced by this time, after a long study of cases in these surroundings, that true cases of narcosomania are practically the only ones in which narcotics become habitual. My opinion is strengthened because I have discovered that the ranks of criminals and prostitutes are so largely recruited from among parasthenics.

C. We find business men as inebriates for practically the same reasons as in other ranks of life. Abnormal ambition, commercial passions, and a conflict of personality in which physical and moral instability sows the whirlwind. Yet in these cases the symptoms are very different, because business exigencies demand a different sort of attention from the parasthenic. This will be taken up under the head of symptomatology. But it must be remembered that in parasthenia the muscular system, the nervous system, and the other tissues and organs of the body undergo cycles of alternating grades of tension. So that men whose work is more intellectually ex-

hausting will differ in symptoms from those on whom the burden falls in the muscular system. The reference of the disorders due to the presence of waste product or autotoxins will occur through different nerve tracts.

D. In the field of art we will discover cases occurring in individuals whose work falls chiefly to the eye. Of course there are instances occurring among musicians. In these latter individuals, I lay the blame not so much upon the auditory tract, which is apt to be normal, as to the optic or ocular difficulties which arise in the course of reading from the printed page of music. Designers, those who may be employed in the large manufacturing centers, often suffer from anisometropia or astigmatism. If in these people the process of waste and repair in the nervous system is fairly normal we may meet cases of habitual drunkenness, or even of persistent inebriation. Narcomania, or the narcosomantic cyclic or irregular processes, are more apt to develop in those individuals who are subject to an irregular or asymmetric, or unequal process of nervous metabolism, which usually reaches full bloom as a phase of parasthenia.

E. In what is called "Society," and there are many ranks even among the cultured, we will see cases of narcosomania develop as a part of the process of accommodation to environment. The labors of society in the pursuit of pleasure are as burdensome, if not more so, than the labors in the distinctly working class. The tremendous efforts which each of these extremes of life must put forth search out minute and microscopic defects in the individual.

Considering, then, every possible phase of life, we will have to examine into the relation of the ideals, customs, and needs of each rank in order to understand how these physical, mental, or moral defects are played upon to the patient's undoing. We must consider the most minute questions of personal hygiene. Pyle, in his recent work, affords us an excellent *point du depart*.

We must go so far as to regulate the diet, the character of

underwear and the general weight as well as warmth of clothing, and the time of day most suitable for sleep. All of this must be examined into as a matter of etiology. For many cases of parasthenia are understandable only in so doing.

SYMPTOMATOLOGY.

The symptoms of inebriety may be classified according to the five several phases of the disease.

Persistent inebriation is the term I have applied to the simple perversity of drunkenness, regardless of its reason or sequences.

Primary acute alcoholism needs no description. Secondary acute alcoholism is evidenced as a peculiarly terrifying nerve storm. This nerve storm is almost exactly paralleled in many cases of parasthenia uncomplicated by the use of narcotics, in the stage of falling tension. The chief element is a feeling of personal inability and undependableness, and actually physical tremor, which is more or less general, a weakness of muscular action, a more or less abulic trend of mind, and visions, hallucinations, or delusions. These latter extreme symptoms are much multiplied in the nervous relaxation of uncomplicated cases of parasthenia.

The symptoms of chronic alcoholism may be dismissed with the word that they are divisible into physical degeneration and moral deterioration, associated with some form of intellectual or mental abasement.

Alcoholic narcomania must be distinctly considered from narcosomaniac alcoholism. Narcomaniac phases may be distinguished by the desire of the patient for a specific stimulant or narcotic. It is not necessary to show that he desires the narcosis, and which may be very disagreeable to him. As Riesman says, the use of a drug when it is habitual may be compared to the outbursts of Jacksonian epilepsy. Here the original injury may be removed and yet the outburst continue, there having grown up in the organism certain morbid fields of activity. It is a matter then of lines of least resistance.

Narcosomaniac alcoholism presents a difference which is very easily established, because the patient cares less for the narcotic than for the relief which it brings. In very late cases, if we can remove the original source of irritation, a constructive cure may be brought about. The patient, being a neuropathic or a parasthenic organization, is always in danger of a return to his bad habits. We must always be at hand to meet the peculiar phases of his original disease. It is remarkable how little ill effect the use of narcotics seems to produce in these cases.

We are aware of the enormous quantities of alcohol which may be ingested by individuals suffering from snake bite and its poisoning. We also know that while suffering great pain amounts of morphine or of alcohol may be taken which in the normal state would produce little effect. This is to be explained along the line earlier suggested, namely, that the narcotic attacks first the unstable elements in the body — the toxins, the alexins, and the waste products.

The inebriation of a parasthenic presents three stages:

1. That of relief,
2. That of overstimulation, and
3. That of parasthenic climax, which takes the place of inebriation as generally considered.

We must have always in mind the lines whereby any of these morbid processes have been laid down. We must combat whatever influences for evil exist.

I have found that the main factor of a cure, whether permanent or temporary, lies in the strength of a new affection, and in the acquirement of some more harmless habit. Many patients instinctively turn to the use of natural and uncooked fatty foods. Very well, allow them all the liberties of over-eating. It is far easier to attend to a case of indigestion than to a case of narcotic relapse. Amuse them. Entertain them with any sort of thing which will not overtax the mind or the body. In each case there is one tissue or one mental function

which affords a line of less resistance to the attraction of a narcotic. In the narcosomaniac these weaker elements demand narcosis.

Prophylaxis. This is too broad a question to touch on lightly, but space forbids adequate discussion. All that I can say must be confined to emphasizing better educational methods, and to suggesting the need of more breadth of view in laying down the rules under which men have to live. When they transgress these rules, instead of punishing them, it becomes a matter for the gravest thought. It is possible, it is true, in most cases, that they are irresponsible, *i. e.*, they do not measure up to the average or normal ability to control self.

The methods of today and our views in regard to criminals, inebriates, and other instances of abnormal activity will have to be revised in the light of recent knowledge. The most careful experiments go to show that men are very much more dependent on elements of environment, constraining elements, than tradition would have us believe.

The study of detailed cases brings to the light so many of these etiologic factors which make for irresponsibility that I am confident to rest my case on the evidence they present. The more so because all who make a sufficient study of these cases in detail are ready to agree with me.

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A NEW PHASE OF ALCOHOLIC UNCONSCIOUS-
NESS.

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Loss of memory and consciousness of the relation of events with automatic conduct are the common characteristics of the cases studied under the title of loss of consciousness and automatism in inebriety, cerebral trance, alcoholic trance, and other names, describing a condition of defective consciousness and personality. A new phase of this particular palsy has come to my attention.

The patient, a well developed, healthy, temperate business man, has distinct periods of aimless wandering and strange conduct, from which he recovers but is unable to recall anything which has happened or explained the motive of his conduct. He has used spirits at intervals in moderation since he was twenty years of age. He is now forty-five, and claims never to have been intoxicated in the sense of being stupid or delirious. During the last ten years he has drunk at irregular intervals spirits several times a day, for a week or more, then abstains. During this drink period he would drop his work and lie down, claiming that his head was tired and he felt sleepy. An hour later he would rise, and drink sparingly for the rest of the day. He takes frequent baths, sleeps well, and claims to drink for its tonic effect.

He is a manufacturer, and occupies a very responsible position which entails great care and attention to details. His general health is good, and only at intervals following the use of spirits does he complain of stomach troubles. He is a suc-

cessful business man, and always shows good judgment in the care and management of his property. Five years ago, during one of the drink periods, he suddenly disappeared, and woke up in a large shipping house in a distant city where he was acting as clerk marking goods and making out bills. He had been at work for five days, and talked rationally and seemed thoroughly conscious of his surroundings. A mistake had occurred in the shipping of goods and he was reproved by the manager, and, in the excitement of defense, he turned pale, sat down, stopped talking, and seemed to recover his consciousness and asked where he was and what he was doing. He was told, and under great excitement he went to his employer and explained his position. He had appeared the week before and asked to be employed, saying that he had been in that work and would work a week for nothing on trial. He was not drinking at the time, and seemed to be a silent, quiet man, tending closely to business. He had no recollection of what had happened or why he left his own business.

A year after he went to New York, for the purchase of goods. After completing his business he drank and disappeared. Two weeks later an alarm was sent over the country, and he was found working as night clerk in a summer hotel. He did not seem to understand why he should be such an object of interest, and when told that he belonged to another city and had large business interests, he replied that they were deceiving him, that he had been in his present position for years, and that they were looking for another man. He was persuaded to take a Turkish bath, from which he recovered his loss of personality and returned home without being able to explain when and where he had been.

Within the past five years he has had three distinct periods of sudden loss of consciousness and aimless wandering. On one occasion he went to a distant city, and from there he started out on a tramp examining farms offered for sale. He made no purchases, but showed excellent judgment in talking and

giving estimates of the values of farm property. He gave to each person a different explanation of what he wanted and the purpose he had in view. He recovered, then went to a telegraph office and wired home for money to return.

On the next occasion he bought a ticket for California, and after reaching his destination recovered and returned home. The next blank was marked by his going on a hunting expedition alone in a woods several hours distance from his home. He had a gun and was looking for squirrels, had shot several when he suddenly awoke. As this was very foreign to his natural instinct it created great astonishment in his mind, and by the advice of his physician became a total abstainer. A year after, while under a mental strain, he drank and disappeared the next day. This time he seemed to be looking for mill sites for a new factory. A few months later another period occurred. He denied all use of spirits as an exciting cause. Coming under my care, a most careful examination revealed an enlarged liver and high tension pulse, memory a little dull, but beyond this all was negative. He seemed rational and anxious to do anything possible to overcome what he called spells.

A few weeks after admission he awoke one morning, called for paper and blanks, and wrote many business letters; also drew up a plan for the erection of a large addition to the factory, and seemed to think that he was in his office at home. An electric light bath restored him. Later he started off in the country, and was found a day later at a farmhouse planning for the purchase of the property. Since that time all blank states have disappeared. He complains of excessive weakness, and does not seem to realize these attacks as more than temporary so-called spells. This psychical condition was evidently the nature of a morbid impulse shutting off all consciousness of the present and all memory of the past, a complete disorientation. There seemed to be no motive or object in this condition. What he had done or said were simply the

reflexes of the surroundings. Something had suggested to him the different purposes he manifested in this condition. It was not the loss of personality altogether. He was still a business man, familiar with the duties and responsibilities. As a shipping clerk he evidently concluded that he was thrown out of business and must begin life again. As a hunter he believed that he was regaining his health by this form of sport. As a real estate buyer his object was evidently to carry out some purpose of moving to the country and giving up business. In these states he was quiet, rational, and talked with good judgment, saying little about the past and generally abstaining from spirits.

This phase of unconsciousness differs in this particular in that he was possessed with an acute consciousness of the present and desire to do and act wisely and clearly, with little or no reference to the past. When told that he had a large business requiring him home he acknowledged it, but said that the present interests were more important or denied it altogether. Later he claimed not to remember where he went or any purpose or object that he had in view.

In the study of his history it was found that his mother before he was born had mental troubles, said to be crazy fits, lasting a few hours, in which she sometimes drank spirits, talked very foolishly, or would go out wandering in the country, then recover and return and be rational for a time. He was the only child. His father was an army officer, and there was no history of any particular neuroses. His mother died early of some acute disease, and his father lived to an old age and was a strong, healthy man.

The action of spirits had evidently culminated in this peculiar form of psychical disturbance. This person is still under observation, but has withdrawn from active business, no blanks having occurred for over a year.

WINE AND THE POETS. — A CRITICAL STUDY OF
THE POETS' DEVOTION TO THE GOD OF
WINE.*

BY JOHN MADDEN, M.D., of Milwaukee, Wis.

Those who seek to abolish alcoholic beverages as drink for man by the simple process of legislative enactment do not appreciate the important position they hold in the psychology of civilization. Wine is a deity, strong drink a physician, and ale a giver of health and strength: such is the belief held by the great mass of intelligent humanity, a belief inculcated and propagated by tradition, by everyday experience, by the literature of all nations and times. Science declares against the food and stimulant value of all alcoholic drinks, penologists point out the full prison, social reformers tell of universal pauperism, anthropologists tell of the really alarming physical degeneracy of the thousands which should be a nation's strength, — all because alcoholic beverages are drunk so universally. But the evil continues to grow. The average man pays no heed to the dictates of science in this matter, — pauperism and crime he has always had with him. If they are increasing he is not sure that the increase is due to alcohol. He is told that it is due to labor conditions, to a protective tariff, to free trade, to over-production of manufactured goods, to the incoming of so much cheap European labor. The average man drinks, he prefers to believe that anything but his glass of beer or whisky, his wine at dinner, should be held responsible. He will not only refuse to believe, but he will refuse

* Read at annual meeting of the society for the study of Inebriety and Alcohol, at Portland, Ore., July 11, 1905.

to listen. As to physical degeneracy, that is a subject as remote from his interests as the doings of the inhabitants of Mars.

The voice of science against alcohol is as yet "a voice crying in the wilderness." Ten thousand paeans sing the divinity of wine, overwhelming and drowning the cool matter-of-fact voice which tells of the alcohol evil.

Wine worship has its cult, a cult as numerous as and a thousand times more devout than the believers in Christianity. The thought of the delights of alcoholic intoxication is the most universal thought, alcoholic desire is the most universal desire — more universal and stronger even than that which perpetuates the race — and the greatest thoughts of the greatest minds have given and are giving their meed of worship to the Wine God. In fact, if we search the literature of civilization we shall find the Wine God more often the subject of worship than the Universal God.

Examine the great poets of our own language and we shall find evidence enough of universal wine worship. Here, as in prose literature, we have both by direct and indirect statement the transcendent value of wine; but not of wine alone. The "good brown ale" has its devotees, and whisky has at least one of the greatest of English bards as its special disciple.

Poetry is the soul of literature. It is the function of poetry to convey that which is too holy and beautiful to be conveyed in prose. Poetry speaks to the heart and soul; it carries truth through the medium of the emotions, truth which is accepted without demonstration, without appeal to the reason, much like the truths of Christianity are accepted. When, therefore, we find wine the subject of poetic laudation, our natures revolt at the thought of considering wine an evil. We accept the poetic conception of wine's divinity as we accept the divinity of the Christian gospels.

Not only is wine worship greater in the number and faithfulness of its devotees than Christianity, but it has within it

an element of intense human aggregation and good-fellowship. If "all the world loves a lover," so too does a lover love all the world, and slight alcoholic intoxication brings about that peculiar state of mental and physical well-being which makes the drinker a brother to the whole human race; which makes him love his fellow and desire to share with him the happiness he feels. A simple drink of alcohol raises up the miserable, penniless, broken wretch of the slums to the same level of well-being as that enjoyed by the diner-out who partakes of costly wine. Let us recall the quantity of alcohol consumed daily and we cannot fail to understand how great must be this alcoholic brotherhood as an element in, not only shaping the conduct of men, but also in perpetuating the alcohol cult.

Going back to a consideration of the poets, let us see what they have done in the way of tribute to the wine god.

Wordsworth, whose poems, like his heart, throbbed with religious fervor, says to the nightingale:

"Thou singest as if the god of wine
Had helped thee to a valentine."

Surely a high tribute to the wine god to say that from this source the nightingale got his exquisite voice. Wine cannot be anything but divine if it can give to the nightingale his music, is the indirect lesson learned from the lines of Wordsworth.

But let us begin with old Geoffrey Chaucer, England's first great poet. Wine and ale were drunk in the last half of the fourteenth century, even as they are drunk in the first half of the twentieth century, and he who wrote of the people of that time could draw no true picture of their lives unless he told of their drinking habits.

The "Canterbury Tales" tell of the aims, ambitions, and concerns of divers sort of folk. The Nonne Preeste drank not at all:

"No wyn ne dronk she, neither
Whyt ne reed."

The Pardoner took his wine, but was nevertheless fully alive to the evils of excessive drinking. A fine example, no doubt, of the righteous moderate drinker who could see in the evil of drunkenness the evil of the man and of the drink also. He thus lectures the company on wine excess :

"A lecherous thing is wyn, and dronkenesse
Is ful of stryving and of wrecchednesse.
O dronke man, disfigured is thy face,
Sour is thy breeth, foul artow to ambrace,
And thurgh they dronke nose semeth the soun,
As though thou seydest ay 'Sampsoun, Sampsoun,'
And yet, god wot, Sampsoun drank never no wyn.
Thou fallest as it were a stiked swyn;
Thy tonge is lost, and al thyn honest cure;
For dronkenesse is verray sepulture
Of mannes wit and his discrecioun.
In whom that drinke hath dominacioun,
He can no conseil kepe, it is no drede.
Now kepe yow fro the whyte and fro the rede."

Surely this is a true picture of alcoholic degeneracy, as true now as it was five and a half centuries ago.

Nor did the Canterbury Pilgrims have far to go for an example of drunkenness. The Miller who was of their party was a constant "terrible example" to them :

"The Miller, that for-dronken was al pale,
So that unnethe up-on his hors he sat,
He nolde avalen neither hood ne hat,
Ne abyde no man for his curteisye,
But in Pilates vois he gan to crye,
And swoor by armes and by blood and bones."

His loud talk, his drunken boasting, his profanity, and obscene language might well have disgusted the finer personages of the pilgrims.

"Our Hoste saugh that he was dronke of ale," and after the time-honored manner of tavern hosts sought to quiet him, not only for the good reputation of the house, but because the company preferred to listen to a story from the lips of the

man more capable of telling it than was the drunken Miller; but the alcohol loquacity was upon him, that deceptive flow of words sans ideas which from time immemorial has been considered as the *stimulating* effects of alcohol, and he was not to be silenced. Advised to let some else speak he swore:

“By goddes soul,’ quod he, ‘that wol nat I;
For I wol speke, or elles go my wey.’”

In disgust bluntly spoken the host finally says to him:

“Tel on, ta devil wey!
Thou are a fool, thy wit is overcome,”

whereat the Miller, somewhat mollified, retorts:

“That I am dronke, I knowe it by my soun;
And therefore, if that I misspeke or seye,
Wyte it the ale of Southwerk, I yow preye.”

The old familiar excuse! It is not the man but the liquor that is to blame for the man's wrongdoing.

So the drunken Miller begins his story, and what a story it was!

A drunkard's story for drunkards, an unclean thing dressed in unclean language, a story of sexual appetite, such as the imbibition of alcohol is sure to suggest, a story the like of which may be heard wherever young men take their cocktail and their brandy-and-sodas in the lounging room of the club, such a story as the half-drunken sailor or lumberman is always delighted to recite or listen to, a story which is learned by heart to be told again and again wherever young men congregate and drink together.

There is no denying the interest of the Miller's story, its naturalness, its vulgar fun, its intense humanity. Hendy Nicholas is a Don Juan of coarse fibre, but a Don Juan nevertheless, the exploits of whom young, idle, wine-heated manhood is always eager to listen to.

What did Nicholas send to the young wife of the old hus-

band to win her favor? Of a truth something to drink, alcoholic beverages:

"He sente hir piment, meeth, and spyced ale."

Moreover, when Nicholas is concocting a scheme to deceive the ignorant old carpenter, husband of Alisoun, he sends the carpenter after ale, and the latter brings "a large quart," of which each drinks his part, very much like two modern business men discuss their affairs over a social glass or bottle.

There were wines and wines in the days of Chaucer, as there are in our own times, and certain legal enactments were deemed necessary to prevent wine doing an unwonted amount of damage. A strong, white wine was brought from Spain, especially from Lepe, not far from Cadiz. Very likely it was cheaper than the red wines or the Rhine wines brought into England. At any rate there seems to have been some sort of temptation to mix them. Chaucer refers to this in the following satirical lines:

"Whyte wyn of Lepe,
That is to selle in Fish-strete or in Chepe.
This wyn of Spayne crepeth subtilly
In othere wyne, growing faste by,
Of which ther ryseth swich fumositee,
That when a man hath dronken draughtes three,
And weneth that he be at hoom in Chepe,
He is in Spayne, right at the toun of Lepe,
Nat at the Rochel, ne at Burdeux toun;
And thanne wol he seye, 'Sampsoun, Sampsoun.'"

Of course, the implication is that the mixture produced a drink highly intoxicating, three draughts of which would rob a man of his senses and make him dead drunk, for the "Sampsoun" is meant to represent the drunkard's stertorous breathing. Is not this very much like protests of the present day, that it is impure liquors which cause the harmful drunkenness?

It was ordered in the Liber Albus that innkeepers were not to put these strong white wines in the same cellar with Rhen-

ish wines, and that no mixed wines were to be sold under penalty of being put in the pillory.

The bringing into England increased quantities of these stronger wines of Spain must have been attended by a noticeable increase in alcoholic intoxication in court circles, for we find a court order of the date of 1604 reducing the quantity of wine daily consumed in the royal household to twelve gallons.*

In the tale of Melebius we find this didactic message:

"Thou shalt also eschew the conseiling of folk that been dronkelewe, for they ne can no conseil hyde."

In *Piers Plowman* we find reference to "Whyte wyn of Oseye and red wyn of Gascoigne, of the Ryn and of the Rodeel."

While Chaucer does not sing the divinity of wine he accepts it as a matter of course, and shows us that the drunkenness produced by those wines of old was not unlike the drunkenness produced by the intoxicating drinks of our own time, and that drunkards have not altered their characters.

As our purpose is not to trace the evolution of poetical sentiment in regard to wine we will not give the poets in their chronological order.

Keats regards wine as one personage of the trinity which makes life worth the living. The other two are women and snuff:

"Give me women, wine and snuff
Until I cry out hold, enough!
You may do so sans objection
'Til the day of resurrection;
For bless my beard they aye shall be
My beloved trinity."

In our own day we may well regard snuff as being wholly out of this trinity; but Keats is not the first nor the last poet

* "And whereas in times past Spanish wines called Sacke even little or no whit used in our courte, and that in later years, though not of ordinary allowance, it was thought that noblemen — might have a cup or a glass" &c. we understand that it is now used as a common drink — hence the allowance to XII gallons a day for the court.

to sing of the delights of wine and women. It is not likely that any lengthy argument we could make to prove how devotedly the wine god is worshiped would be as effective as this association of wine and women as the chiefest of carnal pleasures.

In his inimitable poem, "The Eve of St. Agnes," wine plays a dramatic part in the love affair of Madeline and Porphyro. A great feast is on in the Baronial Hall of Madeline's father, to enter which means death swift and sure to young Porphyro should his presence be discovered. There is wine and song at the feast. One can almost hear the voices of the revelers rendered discordant and careless of harmony by vast libations of Baronial wine, almost hear the rattle, clank, and clash of the sword-belted and spurred guests gathered round the long uncovered table, still laden with broken meats, under the flare of smoking torches:

"Meantime across the moors
Had come young Porphyro, with heart on fire
For Madeline."

In the midst of all these enemies, each thirsting for his blood, Porphyro has a single friend, the ancient nurse, whose very bones rattle with fear to see him there; but she secretes him nevertheless in fair Madeline's chamber. Finally in comes the idol of his heart, and, as one in a dream, he sees her disrobe with only the moon to light her to bed. He hastens to her side when at last the castle is silent and in drunken sleep, he quiets her fears by an assurance that

"The bloated wassailers will never heed
There are no ears to hear, nor eyes to see, —
Drowned all in Rhenish and the sleepy mead,"

and so they escape, stepping over the prostrate bodies of the drunken guards without awakening them from their alcoholic lethargy, — an old story this of escape by reason of the watchers being drunk of wine.

It is, however, in his "Ode to a Nightingale" that Keats rises to the heights of the sublime in wine worship:

"O for a draught of vintage that hath been
Cooled a long age in the deep-delved earth,
Tasting of Flora and country green,
Dance and Provençal song and sun-burnt mirth!
O for a beaker-full of the warm south
Full of the tree, the blushful Hippocrene,
With beaded bubbles winking at the brim,
And purple-stained mouth;
That I might drink and leave the world unseen,
And with thee fade away into the forest dim."

Men in the earlier centuries of our present civilization sought for the fountain of eternal youth, and they expected to find it. Not less prevalent and sincere was a belief in some sort of liquor with the power to work magic. Wine, it seems, must have been regarded as somewhat akin to a nectar with supernatural properties. In fact, it is still regarded in this light by the great mass of uncultured mankind, and this belief is unconsciously reflected from the minds of the world's elect. There is a subconscious belief that good wine really has the characters described in Shelley's "The Witch of the Ottos":

"And liquors clear and sweet whose healthful might
Could medicine the sick soul to happy sleep
And change eternal death into a night
Of glorious dreams, — or, if the eyes needs must weep,
Could make their tears all wonder and delight."

Browning's references to drink have not the spirituality in them that we find in the lines of Keats and Shelley. They appeal to the human, material man rather than to the spiritual man. Off Cape Trafalgar he recalls the deeds of his great countryman, Lord Nelson, and at once arises the desire to pledge the invisible presence in something to drink, so he gives us the toast:

"Here's to Nelson's memory.
'Tis the second time that I, at sea,
Right off Cape Trafalgar here
Have drunk it deep in British beer."

Here's the stout religion of Gambrinus, and carries with it a notion that to pledge a great sea captain in British beer is to do something fitting and patriotic, something consonant with the character of Britain's greatest naval hero.

In the "Italian in England" Browning makes the homesick alien thus soliloquize over the delights of his native land:

"With us in Lombardy they bring
Provisions packed on mules, a string
With little bells that cheer the task,
And casks and boughs on every cask
To keep the sun's rays from the wine."

A picture of the delights of his sunny land which would be nought were it not for cask covered with bushes, and the anticipated pleasure of partaking of the contents thereof.

"The Englishman in Italy" recognizes the beauty of the Italian vineyard picture. He does not sigh for the fogs and fens of England, and good British ale is really out of place when

"Come your friends with whose help in the vineyards
Grape-harvest began
In the vat halfway up in your house-side,
Like blood the juice spins,
While your brother all bare-legged is dancing
Till breathless he grins,
Dead-beaten in effort on effort
To keep the grapes under,
Since still when he seems all but master,
In pours the fresh plunder
From girls who keep coming and going
With basket on shoulder."

Here is local color, to be sure, of the mountain-side vineyard, the clear blue sky, and the fragrant baskets of grapes; but there would seem to be little in the picture to inspire a great poet's pen. Indeed we can conceive that the poet's inspiration comes from the suggestion of wine,—here wine is being born. The juice which runs red today will ferment

by and by, will have a spirit, the thing which brings temporary bliss to millions every day. One can conceive the making of sauerkraut in the midst of surroundings as pleasant, but what poet would sing of the cutting of the sweet, crisp heads of cabbage, the pounding of it into barrels with a sprinkle of salt, and its prospective appearance on the table with ribs of pork?

Nor does the tramping out of the grape juice by the tough perennially unshod feet of the peasant always inspire the poet's song. The process so offended the sensitive soul of our own Hawthorne that his stomach refused the wine offered him by his courteous wine-making host. There were wines and wines for Hawthorne: while he looked upon the wine thus made with loathing, he could almost deify the "bottled sunshine" produced from the vineyards of Monte Beni.

Professor F. L. Washburne of the Oregon State University finds from his experiments with the sphygmograph that while the normal pulse beats seventeen times in one revolution of the cylinder, while the person is smoking a cigarette it beats twenty-two times. What wonder that the general health is interfered with by such abnormal work being forced upon the heart.

Dr. O. Gorman writes on the action of alcohol on the heart as follows: "The supposed increase in the number of heart beats after the use of alcohol is not evidence that the heart is doing a larger amount of work, on the contrary the vasomotor paralysis reduces blood resistance, and the weaker the heart gets the more frequent are its beats. In fact, the quickening of the beats is not increased energy but the embarrassment of weakness."

Abstracts and Reviews.

POISONINGS BY WOOD ALCOHOL.

Doctors Buller of Montreal, and Wood of Chicago, have contributed a most exhaustive study to the pages of the *Journal of the American Medical Association* on this subject. They have grouped authentic records of fifty-four cases of alcohol amblyopia from methyl alcohol. While it is not possible to publish the entire paper, which is practically a small book, we may give some of the conclusions and trust that our readers will be able to see the work in the original before long. Doctor Buller has collected fifty-four cases, with the full histories. These with what Doctor Wood has grouped make eighty-nine of authenticated cases of blindness. Absorption of the fumes of this form of alcohol, is responsible for ten cases of amblyopia. Altogether they have noted two hundred and seventy-five cases; one hundred and fifty-three were instances of blindness, and in one hundred and twenty-two, death occurred. Speaking of the commercial forms of methyl alcohol, the author says: There are many other forms of this fluid on the market, such as "Colonial spirits," "Union spirits," "Eagle spirits," etc., in the United States. "Green wood spirits" (mostly used for fuel) and "standard wood spirits" (a more thoroughly deodorized article) are largely sold in Canada and intended for the same purposes as the American Columbian spirits. The deodorized fluids all have the same volatile, agreeable, vinous odor, and the pungent, biting taste as pure ethyl alcohol, and it is often difficult for the average individual to distinguish them from grain alcohol. It is, therefore, quite easy to understand how the thirsty one, unaware of the danger to life and

eyesight, might indulge in a drink of the methylated product. Manufacturers of all sorts of alcoholic potions have not been slow to take advantage of this fact; indeed, there is hardly a "liniment," an "essence," an "extract" or a "bitters"—hardly any nostrum or concoction, medical or domestic, in whose preparation alcohol is employed, — that has not been, or is not now, adulterated with this poison. We have within the past few months had several proprietary remedies, suspected to have produced blindness, carefully analyzed, and they all contained wood alcohol.

As stated on the highly ornate labels of the bottles intended for retail consumption, one form of methylated "spirits" is highly recommended for "bathing, burning and cleaning." Among the uses specified are "bathing and sponging the sick; making liniments; rubbing for rheumatism, bedsores, etc.; veterinary uses where alcohol is required; Turkish bath cabinets; burning under chafing dishes and in spirit lamps; removing oil and grease from brass and woodwork." In all these instances ample opportunity is afforded for absorption of the poison.

The intoxication of persons from inhalation of the fumes of methylated alcohol is another example of poisoning by small quantities of the intoxicant, because the actual bulk of liquid so absorbed by the lungs and skin must be comparatively small.

The cumulative quality of methylism has been referred to by several writers. This matter will be further discussed in speaking of the pathology of the subject. Meantime our investigations undoubtedly demonstrate that in many instances no marked poisonous symptoms were noticed until after twenty-four hours or longer, after the last of a number of doses (usually small "drinks") had been taken. Unlike most poisonous agents that are responsible for acute symptoms, these may not much disturb the patient for a relatively long interval after the ingestion of the poison. Indeed, it may be set down as a

rule, that, except in persons exhibiting an idiosyncrasy against wood alcohol, or unless a large dose of the poison is drunk within a few hours, not only may the severe abdominal symptoms, the cardiac and nervous collapse, and the blindness be postponed, but even the fatal termination has, in some instances, been delayed for several days.

This information, derived from the histories just published, demonstrates the fact that there is danger, albeit an unknown degree of danger, to life and eye-sight attending the ingestion of any amount of wood alcohol. Moreover, while the acute, unmistakable symptoms of the ordinary forms of intoxication enable us to recognize them at once, there can be no doubt that much smaller quantities taken into the system as, methylated quack remedies, adulterated food stuffs (Jamaica ginger, "lemon extract," essences), or the secret dram drinking of bay rum, cologne water, etc., may, in persons not immune, injure the digestion and permanently damage the vision.

In considering the actual poisonous agent in the methyl alcohol of commerce, one must not forget the secondary organic compounds formed in the intestines and in the blood. It is quite likely that these play an important role in the damage inflicted on the system. Prof. C. S. N. Hallberg believes that the untoward effects of methyl alcohol are mainly due to formation of the poisonous formaldehyd.

In respect of its varying toxicity, however, this poison does not differ from many other lethal compounds, paris green, for instance. The effect on the individual, in the case of this arsenical drug, will be largely governed by the amount ingested, the condition of the patient's alimentary tract, whether his stomach is full or empty, whether already irritated by other agents, whether vomiting sets in early or late, and whether absorption of the poison is complete or not. If the conditions are adverse a fatal termination might ensue from a small dose and in a short time; if favorable, the drinker

might escape after the ingestion of a relatively large quantity of the poison.

The varying effects of methylated fluid on individuals is largely due to idiosyncrasy, exactly as in the case of ethyl alcohol and other poisons. For example, a peripheral neuritis, sometimes associated with blindness (toxic amblyopia), is one of the well-known results of ethyl alcoholism, but it does not so affect every drunkard. That about 50 per cent. of those exposed to the poisonous influences of wood spirit escape permanent damage is now a recognized fact, and this immunity is mostly due to a peculiar resistance inherent in the nervous and digestive apparatus.

Another fact, fully recognized by Reid Hunt in his laboratory studies, is clearly shown in the clinical history of those cases in which the poisoning was brought about by the ingestion of various mixtures containing different proportions of this drug, together with other things. In every instance the toxic action was that of methyl alcohol, as clearly and sharply defined as if nothing but the pure spirit had been consumed. It can, therefore, no longer be maintained that the poisonous effects of Jamaica ginger, lemon extract, bay rum, etc., are due to anything else than the methyl alcohol which some of these preparations are well known to contain.

In one series, for example, although the blindness was complete, no fundus alterations were discovered except, possibly, slight blurring of the disc outlines, or a faint congestion of the papillary vessels. These are, in all probability, cases of deep-seated retrobulbar optic neuritis, with no changes present in the nerve-head. In the course of time most of these cases suffer a postneuritic atrophy with abundant evidence of the lesion in the pallid papilla.

On the other hand, a well-marked anemia of the nerve is perceptible in many cases of intoxication a very short time

after the ingestion of the poison. In this regard wood alcohol acts like quinin. It is a question whether this condition should be called "atrophy," first, because fairly good vision has been recovered in not a few of these cases, and, second, because sufficient time to bring about true atrophic changes had not elapsed since the poisoning. Later on, without possibly any marked alteration in the ophthalmic picture, the sight grows dimmer with the occurrence of veritable optic atrophy.

A third picture is that of a mild papillitis. The outlines of the disc are obscured, the physiologic excavation is filled by an edematous swelling, and the vessels, especially in the veins, are distinctly turgescient. Vision will, in these, as in other cases, depend on the extent to which the central bundles of optic fibres are affected. A well-developed neurotic process situated far behind the globe and not discoverable by the ophthalmoscope may result in an early, sudden, complete and permanent blindness, while recovery, sometimes complete, may follow a superficial papillitis or an early blanching of the nerve-head.

These apparent anomalies must not, however, blind us to the fact, certified by all careful observers, that in the great majority of instances of intoxication an early retrobulbar neuritis, whose signs and symptoms shortly improve (with more or less clearing of sight), is the precursor of a genuine post-neuritic or secondary atrophy, from which most or all of the patient's useful vision is wiped out.

The lesions in the majority of instances of methyl alcohol amblyopia and amaurosis are local ones — that is to say, they are not secondary to central circulatory or nervous changes. Unlike other forms of toxic amblyopia, e. g. quinin, tobacco and ethyl alcohol, the poisoning is frequently accompanied by scleral and ciliary congestion, tenderness of the eyeball, painful excursions of the globe, pain in the eyes and forehead, and other evidences of an acute inflammation of the orbital or intraocular contents. The exact character of the morbid altera-

tions that give rise to these symptoms and to the blindness, probably varies somewhat, according to the severity of the intoxication.

From a study of these cases we may conclude that there are three degrees of wood alcohol poisoning.

1. An ordinary mild intoxication, with perhaps some dizziness, nausea and mild gastrointestinal disturbance, terminating in perfect recovery within a few days, but occasionally followed by more or less serious damage to the vision.

2. A toxic effect more pronounced in every way, dizziness, nausea, vomiting and gastroenteritis being conspicuous symptoms. Dimness of vision, often increasing to total blindness, is characteristic of this degree of poisoning.

3. An overwhelming prostration which terminates in coma and death. The clinical picture of wood alcohol poisoning usually depends on the quantity taken, modified, of course, by the resisting power of the individual. Generally there will be observed the ordinary effects of alcoholic intoxication (vertigo, nausea, gastric discomfort, and general malaise) with disturbance of vision.

The more pronounced cases exhibit headache, muscular weakness, vomiting, dimness of vision, often progressing to complete blindness, with considerable gastro-intestinal disturbance, and evidence of depression of the heart's action.

A step further and, with the exaggeration of all these symptoms, the patient becomes suddenly blind, or nearly so, with widely dilated, reactionless pupils, slow respiration, weak pulse, sweating, delirium or unconsciousness, often passing into coma and terminating in death.

It rarely happens that a patient suffering from methylic alcohol intoxication recovers if he once becomes comatose. He almost invariably dies unconscious, or, having regained consciousness, suffers a relapse and death shortly follows.

The characteristic feature in nearly all the severe cases

not terminating fatally is bilateral, total blindness, coming on in a few hours, or perhaps not for several days; then a partial restoration of vision, which again in a few days or weeks gives place to more or less complete and permanent blindness, with atrophy of the optic nerve.

Surely this is a picture entirely different from any other known form of intoxication and sudden amaurosis, and it has been drawn by many observers from actual clinical observation over a widespread area. It is a picture which methyl alcohol alone can create.

As already noted, vision is frequently good for several days after recovery from the intoxication, when without warning, blindness, often total, sets in. After a few days or weeks of darkness the eyesight returns, and the improvement may even be very marked—may, indeed, be almost as good as ever. Yet a relapse is almost certain to occur, and before long the blindness once more returns, and this time, as a rule, is permanent.

The visual field is nearly always contracted, and absolute central scotomata are rarely absent. The pupils are widely dilated and do not respond to light or accommodation. The optic neuritis characteristic of the early stages of methyl alcohol intoxication, shows itself in blurring of the optic discs, congestion of the papillary vessels and slight swelling of the nerve head. Later the congestion of the optic papilla disappears and complete atrophy, with a white or grayish nerve head and contracted retinal vessels, is easily made out with the ophthalmoscope.

Methyl alcohol poisoning, complicated with other poisons or with systemic diseases capable of producing some of the severer symptoms of methylism are, of course, not so easily diagnosed. Death from uremia in an ethyl-alcoholic, who has recently been imbibing quantities of grain alcohol, might