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THE QUARTERLY JOURNAL

OF

INEBRIETY.

PUBLISHED UNDER THE AUSPICES OF THE AMERICAN ASSOCIATION FOR THE STUDY AND CURE OF INEBRIATES.

T. D. CROTHERS, M.D., Editor.
56 Fairfield Avenue,
HARTFORD, CONN.

Vol. XXII. 1900. No.

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20 KING WILLIAM STREET, ON THE STRAND, LONDON, W. C.

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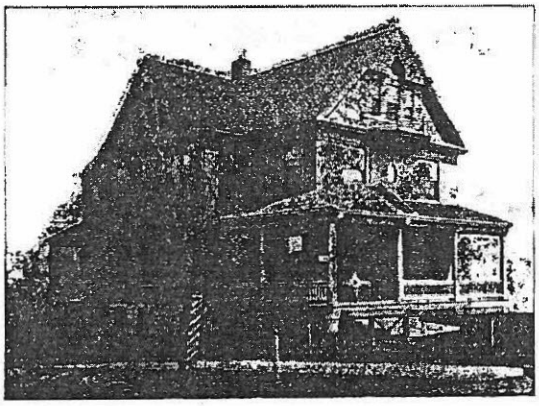

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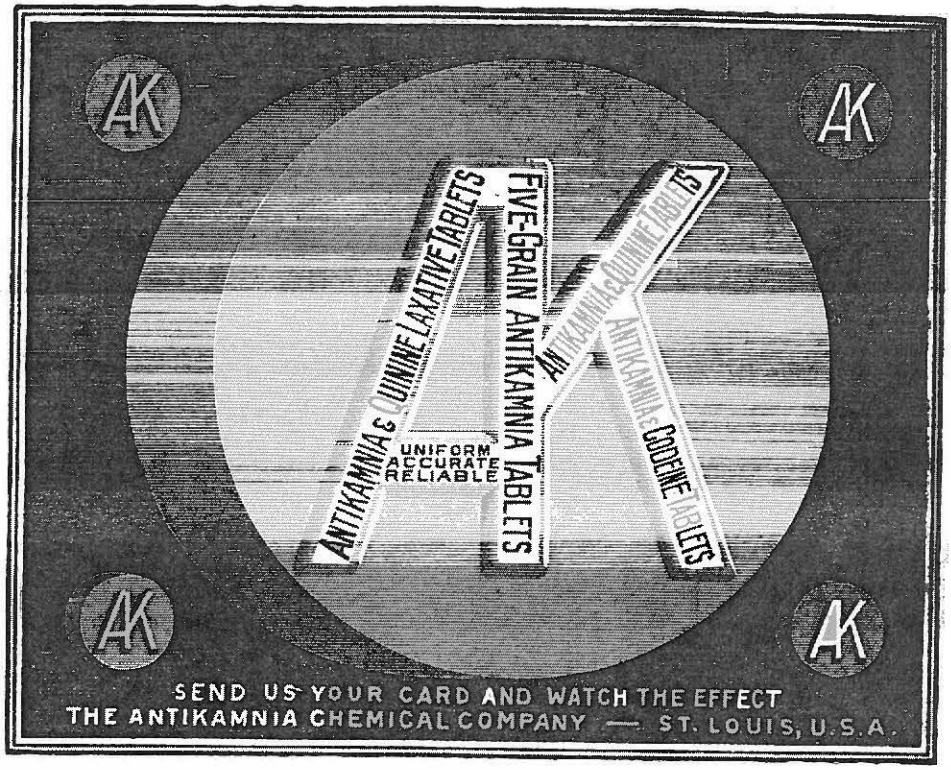
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Vol. XXII. OCTOBER, 1900. No. 4.

A STUDY OF CASES OF INEBRIETY.

By Geo. E. Partridge, M.D.,
Clark University, Worcester, Mass.

People who use alcohol drinks to excess may be divided into two classes, dipsomaniacs and drunkards. The former are periodic drinkers, and true dipsomania is now generally recognized to be an indication of some form of nervous disease. The drunkard is the steady drinker who, in general, drinks whenever he has opportunity, but drunkenness may take the form of sprees without becoming a true dipsomania. A study of various classifications of drinkers discloses the fact that there are two general types of organization which predispose to drunkenness. One is the undeveloped type, — intellectually, morally, and physically of a low order. It represents a low stage of culture in which habit and ideals do not clash. The second is the degenerated type. People of this type commonly possess the craving for intensity of consciousness, which goes with culture and high ideals, but lack

balance. To this class belong many men of genius who seem to crave strong excitement. But, applied to individual cases, such generalizations are unsatisfactory, and there is no more perplexing problem in individual psychology than is presented by the subtle differences of organization which make it possible for one man to drink moderately without danger, while another, apparently as well constituted and as favorably conditioned, perishes in the presence of alcohol.

Dipsomania is full of interest to psychology. On the mental side it is a recurrent impulse to become intoxicated. During the intervals there is no desire for alcohol, and usually aversion. Its rhythms are especially interesting. Howard says that he believes the long rhythms in nutrition and heat regulations of the body are factors in augmenting and aggravating the periodicity of dipsomania. Monthly rhythms of the female are often accompanied by attacks of dipsomania. The season of the year seems also to exert a minor influence in inebriety. Crothers says that inebriety is more marked and more impulsive in the spring and summer months. In a thousand cases of inebriety ninety-four drank to excess in April, May, and June, and at no other time of the year. In women the commencement of dipsomania very often dates from menstrual disturbances, from pregnancy, and from the menopause. The attacks of dipsomania are usually preceded by disturbed mental action and control. Before an attack the dipsomaniac is irritable, and there are other signs of nervous disturbance. When alcohol cannot be obtained there is restlessness, indefinable horror as of some impending danger, the throat is parched, the skin is hot and dry, the pulse rate is increased.

These are the main facts of dipsomania. For more extended accounts reference must be made to the psychiatrical treatises, such as the works of Krafft-Ebing, Krapelin, and others. Also to numerous articles in the JOURNAL OF INEBRIETY.

Below are given extracts from sixty-five cases of inebriety, studies by the present writer largely to determine the nature of the craving for intoxicants as it is felt by the inebriate. Most of the men studied were confined in criminal institutions. A few were voluntarily patients in inebriate asylums. For the most part the conversational language of the subject is retained.

CASE 1. Man, 25. Drank since 15. Used a quart of whiskey a day for years. Has drunk alone, but generally likes to drink in a crowd. No craving for it at all while in jail.

CASE 2. Man, 31. Drank his first glass at 24. Drinks socially altogether. Is drunk every Saturday night. No craving for drink now or during the week when he is out. When tired and thirsty one glass of beer tastes good. After that it is not the taste. He drinks for the feeling or because he has lost control, and does not care what he does. Afterwards feels the disgrace keenly. He is strong, of athletic build, and in perfect health so far as he knows.

CASE 3. Man, 36. Always drinks in company. Never intends to get drunk when he starts. Occasionally between drunks he will take a glass of beer. Trouble will always make him get drunk. When in jail feels the loss of his pipe, but does not feel the loss of his drink. As a boy, was very bashful. Would always take a few drinks before going to a party or social.

CASE 4. Man, 38. Been drinking since 16. Very seldom drinks alone. Has no appetite for it here, and doesn't see why it can't be the same outside. If he succeeds in going two or three weeks without drinking he does not crave for it.

CASE 5. Man, 52. Been drinking since 16. For the last few years has drunk very heavily. Drinks mostly in company. Drinks because he worries. He hasn't missed liquor at all since he came here. Misses his tobacco some. Is of a nervous temperament, always was nervous. Thinks he is not going to drink any more.

CASE 6. Man, 21. Been drinking since 14. Has drunk alone a good deal. Likes to be alone when drinking. Has drunk as many as thirty glasses a day. Had been drinking heavily when arrested, but missed the liquor for two or three days only. Takes more to make him drunk than when he began drinking.

CASE 7. Man, 43. Been drinking since 20. If he takes one drink is sure to take another. Doesn't like the taste of beer nor liquor. It is for the feeling after it is down. If there was no rum, would never have any longing for it.

CASE 8. Man, 52. Very hard drinker. Doesn't care for the taste of liquor at all. Doesn't care anything about it until he gets into company. Never goes into a saloon alone. If worried about anything goes out looking for company, and drinks. In jail, doesn't crave either liquor or smoking; but does crave chewing tobacco.

CASE 9. Man, 43. Of melancholy temperament. His drinking is periodic. Always drinks alone. When he drinks with a crowd, he spends too much money. Will go for two or three months and have no desire for it at all. Went a year without touching it. Is quite sure he is never going to drink any more.

CASE 10. Man, 50. Been drinking since 16. Has never had any craving for drink. Never thinks of it when in jail. Does not like the taste of whiskey or beer, or any other kind of liquor. Never goes in to drink alone, even when he has money. He never goes in because he wants a drink.

CASE 11. Man, 48. Been drinking since 19. Doesn't like liquor. Never goes in to get a drink by himself. Drinks by sprees. When he meets two or three old friends he likes to go in and talk over old times, and thus gets drinking, and can't stop. Misses the tobacco more than rum. A man doesn't need rum, he does need tobacco. Is sure he is not going to drink any more.

CASE 12. Man. 43. Been drinking since 25. Doesn't like the taste of liquor. No craving for it, now or ever. But

cannot take a glass or two and then stop. Always gets drunk when he drinks at all. His health is good, and he is not nervous.

CASE 13. Man, 30. Drinking since 17. At 30, commenced to use whiskey altogether. Always drank alone, and every day. His usual allowance was fifteen or twenty glasses in a day. Four years ago he stopped for a year after taking a six weeks' treatment. Has no craving for alcohol now, whatever, but there is a struggle all the time against depression and fatigue. If he hasn't had anything to drink for a month or two, he does not crave it at all.

CASE 14. Man, 18. Never likes the taste of liquor, except after he has been drinking heavily. For three or four weeks after coming to jail he craved both liquor and tobacco. Now he does not think of either.

CASE 15. Man, 36. A sailor. Drinks nothing when at sea. Misses it for the first two or three days out. Since he has been in jail has missed his pipe, but does not care for drink. He never drinks alone. Doesn't like the taste of liquor, it is the sensation.

CASE 16. Man, 35. First drink at 14. The only craving is on a hot day when thirsty, then he really feels a craving for a glass of beer. It is impossible for him to drink moderately now. When he drinks he always drinks too much. When he hasn't had a drink, he doesn't want it. When he has, he wants more. Is in perfect health, so far as he knows.

CASE 17. Man, 24. Doesn't like the taste of whiskey, nor crave it, but when once he takes a taste of it, can't stop short of extreme intoxication. Is never tempted to drink except when out with the boys.

CASE 18. Man, 26. Has been drinking since 20. After he has had one drink, he has a strong craving for more. Otherwise he has no taste for it whatever, and never thinks of it except when he is where there is excitement and drinking going on. To have a good time is the starting.

CASE 32. Man, 23. Has no craving for liquor. Once in a while drinks alone, but never intentionally to get drunk. Likes the taste of whiskey. When with a crowd, does not feel as if he was having a good time unless he drinks. If he takes one drink, he always gets drunk.

In fifty-eight of the sixty-five cases studied, there is no evidence of a conscious craving for alcohol, although most of the men who were questioned are confirmed drunkards. Nearly all are recidivists. One has been sentenced sixteen times for drunkenness. The statement that after liquor has been for any reason cut off for a period of from ten to twenty days the craving ceases, is so frequent in these cases that it must be regarded as expressing the true mental attitude toward drink of a class of people who are commonly considered incurable drunkards. In the six cases which follow there was some evidence of a craving for alcohol.

CASE 19. Man, 49. Unmarried. No nervous disease or insanity in the family, so far as he knows. His father died at 76, of old age; mother at 50, of pneumonia. He has six brothers and sisters, none of whom drink. He himself has always been healthy. Left school at 14; was a good boy, always went to church at that time. His first drink was taken at 16. Used to set up ten-pins in a bowling alley. Drank beer there altogether for a long time, before he began the use of stronger drinks. Never drank for the taste. In general his drinking has been to create a false spirit when he is downhearted. He has never been in the habit of drinking daily; for years his drinking has been by sprees. Between drunks he would not drink at all; has tried very hard to overcome the habit. Thought it was wrong, and that it was hurting him. Would fight it for five or six days, but sooner or later would get in with the boys. Of late years he has drunk alone mostly. Went without drink altogether for two years, from 1876-1878. At that time was working for good pay, and simply made up his mind to stop drinking, and succeeded.

Every month for the last seven years he has spent two days drinking and three days recovering from it. In this he has been perfectly regular. He has taken asylum treatment to no avail. Although, during all these four years, he has never missed once a week's drunk, he thinks that if there had been no way of obtaining liquor, he never would have craved it. He has no craving for it now at all, and doesn't think of it. But when he was working, every Saturday he would think of it all the afternoon, would go home in the evening, change his clothes, and go down town. He would walk around until about eight o'clock, and then would go in and get a glass of beer; that would be the beginning of drinking, which would be kept up steadily until Tuesday. He knows of no cause for his drinking, cannot in any way explain the impulse, which is entirely beyond his control. Never left the shop Saturday without fully intending to stay sober. Each time determines never to touch another drop. He feels that there is some peculiar weakness of his nature, and thinks that even in the absence of liquor, he would have found some other way to ruin himself. Again he says that he feels quite convinced that he is never going to drink any more. As a child he was restless, and uneasy, of vivid imagination, quick tempered, but honest and truthful. Never cared much for society of the other sex.

Case 20. Man, 38. Only child. Father living, now 80. A periodic drinker. At 11 was made drunk, was taken home by two men. Doesn't remember feeling sorry about it. As a child was very nervous and high strung. He has been a periodic drinker since he was 17. At 32 he broke a leg, and at that time began to use morphine to kill the pain. He used it ever since. Morphine makes him feel dull; it is quite different with alcohol. A little makes him thrill all over. The least taste of alcohol will set him going, even sweet cider, unless it is just out of the press. Morphine he uses now after he has been drinking heavily. It sobers him, makes him fall

asleep, and puts an end to his spree. His periods are usually precipitated by meeting a friend. Meeting an old comrade affects him in a manner which he cannot explain. He is inclined to be very intense, both in his likes and dislikes. He hates the taste of drink of all kinds. His periods come on at intervals of from three months to a year. He went once two years without drinking. Many times he can control the impulse, but is very easily and very strangely influenced. He feels that he will control his appetite altogether some time, but expects another attack when he gets out this time. He thinks he is safest when he is where liquor can be readily obtained; when away where he can't get it, there is likely to be an increasing craving. Periods are most likely to come on at times when he is despondent or depressed. He is by nature of an unstable disposition, loves frequent change, has worked at almost every trade. As a boy he had plenty of money, a good education, and never expected to have to earn his living. He feels keenly the disgrace of his condition.

CASE 21. Man, 34. An actor. Good health, no nervous disorders. His first drink was at 12. Was out skating on a cold night and drank cherry brandy. His next drink was taken at 17. He was working in a bank, came down town too late for breakfast, ordered a glass of beer. He was alone. After this he drank more or less, socially. He was occasionally drunk, but only at times of unusual festivity, as at New Year's Day, and the like. Was married at 21. From 21 to 27, drank rather steadily, but only in a social way. At 27 he parted with his wife. After that he drank to excess in order to forget. Drank alone altogether and continually. Rented a room and began a spree which lasted for six months. During that time there was not a day that he was sober. Since then his drinking has been somewhat periodical. Went west to work on a ranch, and went eight months without liquor. He was where he could not get it conveniently, and had no craving for it. Was offered a drink a few times during that

period, but refused. Lately, his sprees have been more frequent. Sometimes he can go for weeks and drink more or less moderately, but invariably ends in an uncontrollable spree. In 1893 he spent four weeks at the Keeley Cure, from that time to February, 1896, he went without drink. His sprees always last as long as he has money or can get whiskey. As regards the craving, when he hasn't been drinking, he doesn't crave liquor, but when he has once started, the need is imperative. He has no craving since he came to the inebriates' home, although he has not been under restraint. Thinks that if he lived all the time in such an environment, he would never think of liquor. The craving is more of a mental than a physical craving. It is a desire to get away from himself. The craving for drink is a craving which any other pleasure equal in degree would satisfy. It is a disgust with present conditions and a desire to cut loose from old ruts and have a change. Of late, his sprees have always been preceded by a fit of despondency. Looking back, he can trace two quite different conditions which are likely to initiate a period of drinking; one is depression, and the other is unusual success. The nature of his mental condition during a spree differs greatly according to the mood in which it starts. If he starts in a happy mood, he is jovial all the time; if he starts drinking when he is depressed, he is unsocial, and silent, and there is no stage of exhilaration. He does not feel at all sure that he is cured. One might as well ask him whether he ever intended to have pneumonia again. It is a thing which he does not control.

CASE 22. Man. 45. Father died at 65 of kidney trouble. Mother living at 70. One brother and one sister, both died young. Was 17 when he took his first drink; it was at a wedding. After that he drank steadily, and his drinking was periodical from the start, his sprees occurring at intervals of from three to six months. The longest interval was a year and a half, when he was thirty-eight. At that time he was a

member of a reform club. During all that time he never had any craving for liquor whatever. Excitement and association broke the spell. His periods are induced usually by associating with people who drink, or by misfortune or anger. He does not like the taste of alcohol nor crave it; but if he gets to drinking he cannot stop. He has been arrested eight or ten times, each time for drinking. When drunk he is peaceable and jolly. He never drinks alone. Probably never drank 25 drinks alone in his life. He never cares for drink unless there is excitement, and there is no excitement when a man is alone. Says he cannot remember a day in jail when he ever wanted a drink. He craves tobacco, however, and gets so nervous craving for it that he could almost chew iron. He doesn't feel sure that his drinking is permanently stopped. He thinks confinement has no effect, for a man can't be cured by loneliness, the only way is to keep away from drinking society.

CASE 23. Man, 38. Born in Ireland. For the last 28 years he has been drunk about once a week. When he is out of jail has a craving for drink, it is like a gnawing in the stomach as though he wanted something to eat. Is thinking of it all the time until he gets a drink. Never thinks of it at all when he is in jail. Tobacco he craves. Would think of the whiskey, too, probably, if there was any chance of getting it. It is the thought of it which puts the appetite down into the stomach. Has taken the pledge a good many times, and kept it once a year and a half fifteen years ago.

CASE 24. Man, 40. Is nervous, weak, and emaciated. Suffers from insomnia. Says that he doesn't know of any worse drunkard than he is. Left school at 15, first drink at 18, was out with a crowd of boys, and took two glasses of beer. Has never been able from the very start to drink moderately. Still he thinks he has no craving for it when he has not been drinking. Never cares for it when alone except after drinking, then he would walk five miles to get it. Man-

aged to stop for a few months once, but got out with the boys again; thought that he could drink moderately, but was soon as bad as ever. His sprees usually last until he gets out of money, sometimes he drinks almost continuously for two weeks. Never thinks of the liquor when he is in jail, craves more for the tobacco. Thinks he has been getting worse lately; the excitement and exhilaration after drinking is less, he seems soon to lose his mind, and can remember but little afterwards. He has frequently signed pledges, and once or twice has gone three or four months without drinking. Means to do right, has sworn time and time again never to drink any more. The craving for liquor, as he feels it, is hard to describe. He recognizes it as a kind of hankering and worrying; it is entirely different from the craving a man has after he has been drinking. Since he has been in jail he has felt worried and depressed, but feels nothing which he can call a desire for liquor. Once when he had not been drinking for two months he came to the city on a holiday, and going by a saloon it seemed that he must go in and get a drink. The thought almost made him dizzy, felt as though he could not take any interest in anything, as though all the fun and excitement would be monotonous unless he had a drink to help him enjoy it; but he resisted the temptation, went into a restaurant and had dinner, and all the rest of the day he had no thought of drink. Sometimes when he has a craving for drink other things will satisfy him, as non-alcoholic beverages, or a dinner, as in the case described above. The presence or odor of alcohol will not always arouse the craving. He has often been where there was plenty of it, and would have no desire for it, and could not be induced to touch it.

Case 25. Woman, 52. Periodical drinker for the last 17 years. The periods have usually come at intervals of from four to six weeks. She has been six months without drinking. Thinks she has been worse since she was 44. For the last four years and a half she hasn't drunk at all, having been in

voluntary confinement in an inebriates' home. She is not in any way under restraint. She goes out to church and on errands, and during the day works, serving the establishment in the capacity of cook. In appearance she is strong, well nourished, apparently of strong will, very intelligent. Has a deep religious sense, is extremely sensitive about her degradation and her menial position. Is at times unsocial, irritable, and sarcastic. She still has the craving for alcohol, which is likely to overcome her about once in a month. At those times she goes to the matron and asks to be watched. She thinks that she will have to fight this craving all her life. Her only physical ailments, so far as she knows, are slight dyspepsia and nervousness. If things go wrong the craving is likely to be more intense. At these times she feels as if she must hold herself to keep from going out to get a drink. At communion service the taste of unfermented wine makes her "mad" to drink the whole cup. The craving is not a thirst, and it is very different from the craving she used to have after drinking. Then she would tear everything to pieces to get a drink. Would walk from the Battery to Harlem for it. Her craving, as nearly as she can analyze it, seems to be a longing made up of depression, increased sensitiveness to slights of all kinds, and a general nervous irritability.

The testimony of all the men who were questioned upon the subject goes to show that the craving for alcohol is rather an unimportant part of the intoxication impulse. As one expressed it, "the craving for alcohol is more than a desire to take a drink, it is the craving for something which accompanies it." With one or two exceptions the testimony is that after a man has been without drink for a few days (10 days is the time mentioned in most cases), there is no longer a craving for alcohol. This is especially true when a man is so situated that liquor cannot be obtained. This testimony is emphatic, and there is no doubt of its correctness as far as the introspection of the subjects will go. The testimony is equally as em-

phatic that for the first few days the craving is so intense that there are physiological accompaniments, such as a genera distress, burning in the throat or stomach, weakness and trembling. The usual reply when a man is asked whether he felt the loss of liquor when it could not be obtained, was, "I never think of it," or "It never bothers me at all." On the other hand, the testimony is equally strong that tobacco is missed. There can be no doubt, whatever, of this difference of feeling. The change of expression of the face when tobacco is mentioned cannot be mistaken. Many say, "I think of it every day." As to the interpretation of these facts, a partial explanation of the difference is found in the fact that tobacco is sometimes obtained in jail, and is secretly used. The thought that there is a possibility of obtaining it keeps alive the craving. Another reason is the fact that tobacco is not regarded as the cause of the disgrace and annoyance of imprisonment. Another cause, in all probability the most potent of all, is the social condition of the man in prison. Tobacco is, perhaps, most enjoyably used when a man is alone and inactive. It is a solitary habit quite as often as a social habit, and the solitariness of prison life continually suggests the use of tobacco. The alcohol habit on the other hand is not a solitary habit in most cases. The conditions of life in prison are unfavorable for keeping alive the desire for drink, which is in general an accompaniment of the social consciousness. It is certain at least that whatever longing or craving a drunkard in prison may have, it is not recognized by the man himself as a craving for alcohol. The only real conscious craving, so far as can be discovered, is in the neurotic cases. The clearest example of a craving for alcohol is case 25. In this case there is doubtless a nervous disturbance of some kind which is periodic, and which is interpreted as a craving for alcohol. This may be an erroneous judgment on the part of the subject. The strongly fixed belief, that there is indelibly stamped into her organism a craving for alcohol, no doubt

tends to keep the craving alive. It is certainly nothing more than association which makes her "mad" to drink all the unfermented wine at communion.

In other cases the effect of the popular belief in the organic nature of alcohol habit, instilled into the mind of the drunkard by people who are trying to help, is evident in making him lose hope, if it does not actually take away the possibility of cure.

Further evidence of the mental nature of the craving for drink is furnished by the cures. The conversion and moral cures are confessedly mental. They cure the craving for drink by changing the general life interest. Leuba gives in detail several cases in which the drink craving was taken away instantly by conversion. From this article the following are quoted:

MAN, 42. Converted when 33. Sometimes drunk for a week together. Then not a drop for a whole month. Never went more than a month, but once, when he joined the Good Templars, when he went without drink for three months. He experienced sudden conversion. "From that hour," he says, "drink has had no terrors for me. I never touch it, never want it." Another says, "I believe God took away the appetite for drink that night when I asked him." Man, 44. Converted in 1883. Had been a hard drinker. Made many resolutions, but could not keep them. Had a sudden sense of powerlessness, experienced conversion. Conversion took place on Sunday. "On Monday," he says, "there was no desire for drink." "Since that day I have not had to surmount strong temptations."

Two of my own cases show well the mental nature of the cures for intemperance.

CASE 26. Man, 48. First drink at 18 with a crowd. Became a settled habit at 28. Drank every day. Began on beer, and about 28 changed to heavier drinks. Would go two months drinking everything, then stop for a week from

physical incapacity to drink anything more. Drank to keep up an exhilaration so that he could do more work. Drank when he hated the taste of liquor, and could hardly get it down. But had to take it in order to appear right. Took more and more as time went on. Before he was 38 had tried to reform several times. Changed his residence, but it did no good. Always drank alone for the reason that he didn't want any one to know about it. Never stayed in a saloon longer than was necessary to get what he came for. When 44 he had been drinking very hard, and his wife made him promise to try to reform, urging him to become converted. He had always scoffed at the idea that change of heart would do it, but went to a clergyman and told him that he would sign the pledge for a year. The clergyman would not accept it, so he made out a life pledge, and signed it. Gave his wife all the money he had except a very little, thinking that if nothing could cure him, he would buy some liquor. For a few days after signing the pledge, he was terribly weak and unable to act. All the time there was a craving for liquor. He knew that it would put new life into him, and make him act. The craving was settled in one day. It suddenly occurred to him that he was not more than half honest in the matter, so he went to his wife and gave her the rest of the money and confessed his intentions. As soon as he had done that, it seemed as if the craving was entirely changed, and from that time on, until nearly three years after, he had no craving from alcohol. His health was good, worked at the hardest kind of work, chopping in the woods, and so far as he knows, felt no effect of his hard drinking after the first two weeks. At the end of three years, when on a visit to a summer resort, he drank two glasses of cider. The next day he was as weak as ever. Found out that the weakness had not healed, became frightened, fearing that his drink habit would return, and started away in the rain to walk seven miles to the depot. When he reached the first house, he stopped and asked for a

drink, and got it. Got some more a little farther on. This commenced a downfall more complete than the first. He has continued drinking up to the present time. Says that he has to have alcohol to keep him steady, and to make him think. If he goes a day without it, his nerves seem to be shattered. Thought he couldn't add a column of figures unless he had a drink in the morning. Has a craving for liquor which he cannot resist.

CASE 27. Man, 44. Was through college at 18. Went to work in a bank. At 22 began to drink steadily, brandy and port wine being his favorite drinks. Drank for the taste of the liquor mostly. Belonged to clubs and drank at socials. Soon began to use liquor to excess, and drank both for the taste and the feeling. It was steady drinking all the time. Drank in company altogether. Later, drank alone, but never to get drunk alone. There was hardly a day that he didn't drink excessively, although he never went to extreme intoxication. The last two years of his drinking (from 42 to 44) didn't try much to control his appetite. Kept up his business, and used to do better work after he had three or four drinks. Was doing some literary and lecture work at the time. Always drank heavily before going to make a speech. Stopped drinking in April, 1894. Had been to a kind of a racket at a club, drank heavily all night. In the morning was walking around with three or four men. It suddenly occurred to him that he was living a useless life, told the men he was with that he was not going to drink any more. They laughed at him and told him that could not stop. Drunk as he was, he sat down and made out an agreement not to drink any more from April 14 to July 4. This he agreed to sign if any of the others would. One agreed, so he signed the paper and handed it to the other man. The one remarked that as long as he had the agreement, he guessed he would not sign himself, and put it into his pocket. This angered him and he made up his mind to keep the agreement whether the other man did or not.

Did not drink any more that day, left the men at four o'clock, and went home sick. Went to a doctor, who told him that he would have to stop by degrees, or it would kill him. But he refused to drink. After a week there was no craving, and he refused liquor ten times a day for the next six months. He has never drunk since. Very frequently now he goes into a saloon with friends, but always calls for non-alcoholic drinks. The odor and sight of liquor do not arouse in him any craving. He has noticed that since he stopped drinking he cares less for the society of men, and feels that in a way his social feeling is weakened.

In other cures the principle is psychic. Most of the inebriates' homes depend upon moral instruction and social environment. The principle of such a cure as the Keeley Cure is largely, if not altogether, mental. In the methods, which are used by regular practitioners, reliance is placed upon general tonics and moral influence. Other cures make use of substitutes which have an effect similar to alcohol. Emetics are given which create an association of nausea with the taste of alcohol.

The evidence from the cases indicate that the craving for drink is not a craving of childhood. In the few cases in which the first drink was taken at nine or ten the real history of the case does not begin until some years later. In general, if our cases are typical, drinking does not begin during school life. In a great majority of cases the first drink was taken after the boy had left school and had begun to associate with older men. The beginning was almost always social. In but two instances was the first drink taken alone. There are one or two instances in which the first drink was taken after 40. In the latter cases alcohol was taken by a doctor's orders, and the habit thus formed was never broken.

Parrish says that the drink craving does not declare itself until the demands upon the nervous system come to be exorbitant, and that its terminal period comes with as much

certainty as does its initial stage. He thinks "that there is an inebriate climacteric in every life, when nervous periodicities become faint, when internal and external excitants to intoxication lose much of their vigor and the inebriate diathesis is too feeble to respond to excitation. Between forty and fifty a great number of spontaneous recoveries occur. Between fifteen and twenty-five most cases begin. About twenty-five years closes the drinking period, either by exhaustion of the desire, or by death." Crothers says "that there are periods from seventeen to twenty-five and from thirty to forty in which the liability to contract the drink habit is greatest. This is most likely to die out between forty-five and fifty, or from fifty-eight to sixty-two. The physiological changes of mature life bring changes of nerve vigor and growth periods closely corresponding to the evolutionary periods of women." Superintendent Hadley of the McAuley Mission in New York city says that most conversions of drunkards take place between the ages of thirty and fifty. Dr. Branthwaite, superintendent of the Dalrymple Home in England, says that most of the cures take place between thirty and forty-five, though many cases do well older, up to fifty-five and sixty. The younger cases are most unsatisfactory. He says "very few indeed succeed in getting right under twenty-five or twenty-six." If the physiological basis of the drink craving is the change of protoplasm, due to the continued assaults of alcohol, as many maintain, it would be difficult to account for the fact that young men are, as a rule, less easily cured than older men.

From the data obtained from these cases we can simply enumerate the usual motives which lead to intoxication. For a quantitative estimation of these motives a much greater number of cases would be needed. They are as follows: (1) a desire for excitement, experience, and abandon; to increase companionship, to put off reserve in the presence of others. (This desire to heighten the social feeling is probably the most

prominent cause of drinking. Many drunkards would regard it as a disgrace to drink in any other way than socially.) (2) To kill pain, to calm moral distress, to overcome fatigue, a desire for temporary relief from poverty or monotony; to increase courage to overcome self-consciousness, to steady the nerves for work or unusual strain.

INFANT MORTALITY IN THE FAMILIES OF TOBACCO WORKERS IN NANCY.

The *Presse médicale* publishes a report of a recent meeting of the Société de médecine de Nancy, at which M. G. Étienne stated this occupation did not seem, on the whole, to have any very considerable influence even on the evolution of pregnancy. The mortality among the children of the working women was more than double the infant mortality in the whole working population — thirty-seven per mille instead of seventeen per cent. of the total mortality. The prognosis was alarming in infants who continued to be nursed at the breast after their mothers had returned to their occupation. On the contrary, it was favorable in those whose mothers did not resume their work. The mortality was notably less in children who were nursed at the breast until their mothers resumed work, and then alternately given the breast milk and the bottle, or the bottle alone. M. Étienne thought that these conclusions led to the following practical conclusions: 1. The physician should not endeavor to facilitate nursing in women who have to resume work in a tobacco factory. 2. The general employment of sterilized milk should be furthered by its distribution at the lowest possible price, or even gratuitously, by relief associations and by the charitable institutions. 3. The mothers should not be allowed to resume work until a month or six weeks after confinement if the child lived. It was known, said M. Étienne, that after this lapse of time the child was much more apt to tolerate artificial feeding.

THE PHYSIOLOGICAL CHEMISTRY OF ALCOHOL.

By Henry F. Hewes, M.D., Boston, Mass.

The question of the influence of alcohol upon the metabolism of the human body has been the subject of a considerable amount of investigation during recent years.

To ascertain definitely this action of alcohol in and upon the metabolism of the human body three facts must be determined:

(1) The method of the disposal of alcohol in the body.

(2) The effect of alcohol upon the respiratory metabolism, the metabolism of the non-nitrogenous organic tissue substances.

(3) The effect of alcohol upon the metabolism of the proteids or nitrogenous tissue elements.

The first fact is to-day definitely and finally determined for us. Alcohol is oxidized in the body. Upon this point the results of all the investigations of recent years are in agreement. The most complete observations prove that of a quantity of alcohol, not exceeding 72 grammes of ethyl hydroxide, introduced into the body during twenty-four hours, at least 95 per cent. to 96 per cent. is consumed, the remaining 4 per cent. to 5 per cent. being eliminated as alcohol.

In regard to our second fact our knowledge is less settled. The results of earlier investigations were in practical unanimity that alcohol in moderate doses caused a loss of body substance as measured by the effect upon respiratory metabolism. More recent results show a lack of uniformity upon this matter. Thus the experiments of Futh, Vogelius, and Bodlander indicate that alcohol causes a lessened respiratory exchange,

those of Zunty and Bjene that it causes an increased change, while those of Geppert indicate that the variations observed under alcohol are within the normal limits of variation. Atwater's published observations show in one case (Experiment 7) a loss of carbon under alcohol as compared with a companion non-alcohol experiment (Experiment 8), in the other no variation between the alcohol and non-alcohol experiments (Experiments 9 and 10).

A careful critical study of all these researches leads us to conclude that the effects of moderate quantities of alcohol upon respiratory metabolism vary much according to the conditions present. In most conditions it appears to cause a loss of substance.

In regard to our third fact also, our knowledge cannot be said to be absolutely settled. Here, however, our lack of uniformity is much less in evidence than in regard to our second point. Some discrepancy is found in the results of the several researches of certain observers, but the majority of cases under each observer and the great total majority of cases investigated indicate that alcohol in moderate doses (40 to 72 grammes ethyl hydroxide in twenty-four hours) causes a loss of nitrogen to the body. And the study of the several researches conducted upon men during the last ten years, seven in number, leads us to conclude that the alcohol, though its effect in moderate doses upon proteid metabolism is obviously slight, fails to spare the proteid tissues. Large doses are distinctly prejudicial to proteid metabolism.

This work upon the effect of alcohol upon proteid metabolism in the human body, published during this present decade, consists of a research of von Noorden in 1891, one by Miura under the direction of von Noorden in 1892, one by Schmidt under Rosemann's direction, one by Schöneseiffer, one by Neumann, one by Stromm, and one by Atwater. Rosemann has shown that all the work upon this subject done previous to 1890 is valueless, owing to the fact that the observers worked with insufficient data.

In von Noorden's investigations upon three individuals, a loss of nitrogen under alcohol was observed in two cases, a maintenance of nitrogenous equilibrium in one. The case without loss received a rich proteid diet.

Stromm, in his researches, found that a loss of nitrogen was the rule under alcohol. Exceptions were present in some observations. Miura made three similar researches upon the following plan: In the first period the subject (himself) was brought into a condition of nitrogenous equilibrium upon a regular diet. In the second period a certain portion of the carbohydrate of the diet was replaced by isodynamic quantities of alcohol (65 grammes alcohol daily). In the third period the regular diet was restored, the sugar again replacing the alcohol. In the fourth period a diet minus both the sugar and alcohol (a reduced diet) was given. Miura's results showed that under alcohol the nitrogenous equilibrium was not maintained, the loss of nitrogen under alcohol equaling that lost upon reduced diet. When the sugar was replaced in the diet nitrogenous equilibrium was restored. This research of Miura appears to be the most complete and adequate upon the subject published up to date.

The researches of Schmidt and of Schöneseiffer gave results similar to those of Miura.

Neumann claimed that the results of this observation proved that alcohol spared the proteid tissues of the body. Rosemann, however, has made a careful review of this research of Neumann, in which he proves conclusively that the experiment is inadequate and the conclusion drawn from it by the author unwarranted by the results. We cannot, therefore, accept the testimony of this research in regard to our question in hand.

Atwater has published two researches. In both the subject received 72.59 grammes ethyl hydroxide daily in place of isodynamic quantities of carbohydrates or of fats. In both researches there was loss of nitrogen under the alcohol as

compared with the results under the regular diet. Professor Atwater tells me that further experiments have given conflicting results, in some cases a maintenance of nitrogenous equilibrium under alcohol, in some a failure in this maintenance.

The question of the nutritive value of alcohol has long been a subject of controversy among physiologists. Liebig, arguing from the similar chemical composition of alcohol to that of the fats and carbohydrate food substances, classed it among the fuel-food substances, and many physiologists have accepted this classification. An equal number of scientists, on the other hand, deny that alcohol has any nutritive value whatsoever in conditions of health.

It is interesting to consider this question in the light of our modern scientific knowledge. According to Voit, a nutrient is a substance which replaces or spares any necessary material of the body. The ordinarily recognized nutriments of the body are the organic foods, the proteids, carbohydrates, and fats, and the inorganic foods, as water, sodium chloride, oxygen. These substances all replace similar materials in the body. Some of them, as the fats and carbohydrates, also possess the property of sparing the proteid tissues. Alcohol cannot replace a similar material in the tissues, since alcohol is not a fixed constituent of the body. Its nutritive action — if it possesses any — must therefore consist in sparing by its action in metabolism some native tissue material. The review given above of the investigations up to the present time upon the action of alcohol in and upon the body metabolism reveals the following facts in this regard: Alcohol is oxidized in the body with the consequent liberation of energy therein. Its effects upon proteid metabolism appear to vary somewhat with the conditions of the organism. As a rule, in the normal individual its use is accompanied by a loss of nitrogenous tissue. In small doses this effect upon proteid metabolism is slight. In large doses it is marked. The effect of alcohol upon the metabolism of the non-nitrogenous organic tissue ele-

ments appears to be variable even in normal conditions. In most cases it fails to spare the fats of the body. Its effects in small doses in either direction are very slight. As compared with the fuel foods which it resembles in its chemical composition we find that if in normal conditions 500 calories' worth of fat or carbohydrate in a diet, under which a man maintains himself in tissue equilibrium, be replaced by an equal calories' worth of alcohol, a loss of nitrogenous tissue will as a rule result. If this alcohol be in turn replaced by the fat the body will as a rule return to its state of nitrogenous equilibrium. That is, alcohol has not, in the general rule, the sparing property upon the tissues of the body possessed by the ordinary organic foods.

Summing up our results, we find that alcohol resembles the organic foods in the fact that it is oxidized in the body. It differs from them in that, while these can as a rule, in normal conditions, be depended upon to replace a given amount of body material, or to spare such material, it cannot be so depended upon.

The results of our scientific researches in regard to the nutritive value of alcohol at present, therefore, permit of our drawing only the restricted conclusion that in the average case it has no such value. The variations present forbid an absolute denial of this property in all cases. Since, however, these results show clearly that alcohol either lacks the tissue-sparing property of the regular fuel foods or possess this property in a much less degree than these, they justify the full and unreserved conclusion that its nutritive value, if it possess any at all, is clearly less than that of any of these substances, and, calorie for calorie, sugar or fat should always be preferred to alcohol. Why the alcohol, producing an equal amount of energy in the body to the fat or sugar, should not be of equal value there cannot be absolutely determined. It is probable, however, that through its well-recognized action upon the nervous system, some disturbance of metabolism or of the oxidation of the tissues is effected, as a result of which the

proteids or other tissue elements fail to get the benefit of the nutritive aid of the alcohol as they do that of the ordinary foods. This fact is in a manner an evidence that this poisonous action of alcohol is present even when small quantities are taken. Else why should not the same results upon tissue metabolism be obtained with alcohol, which are obtained with the same quantities of sugars and fats?

Of the existence of this poisonous action of alcohol, even in small doses, upon the nervous system, or upon the body through its effects upon this system, we possess a mass of experimental evidence. Kraepelin, Lombard, Aschaffenburg, and others have reported experiments which show that even small amounts of alcohol (doses of 20 to 30 grammes hydroxide) cause diminution in the total capacity of the individual for mental or muscular effort. The work on this subject reviewed by Kraepelin in a recent article includes over 2,000 researches. It is a well-proven fact that, though the combustion of alcohol must provide heat to the body, still the action of the alcohol upon the nervous system is such that by the resultant dilatation of the peripheral vessels the body is made less rather than more able to maintain its heat supply under alcohol.

Whether this poisonous action is, as is generally believed, a paralysis of the nerve centers or not, it certainly is present to a greater or less degree in all cases of health, and it is natural to suppose that it is this result which offsets any beneficial nutritive influence which the energy derived from the alcohol might tend to lend to the body.

The variation in the results of the experiments with alcohol quoted may be in part explained by the possession of a greater or less immunity in the subject of experiment to this poisonous action. The sum total of all the results of alcohol upon the body metabolism certainly inclines the unprejudiced student to agree with Horsley that total abstinence has a scientific basis.

ALCOHOLISM.

By H. L. Staples, A.M., M.D., Minneapolis.

I may say, in prefacing my remarks, that no malady which we encounter in a medical or surgical way requires more skill, tact, and patience to treat than alcoholism in its protean manifestations. Alcoholism may be defined as a disease of heredity or acquirement — a pathological state caused by excessive use of alcohol, manifesting itself by lesions of the brain, spinal cord, or peripheral nerves. There is a rapidly strengthening opinion at the present time that in a certain sense it is nearly always hereditary. It is not claimed that all alcoholics have a similar parentage; but trace back the family lineage, and, together with this disease, we find insanity, epilepsy, chorea, hysteria, morphinism, syphilis, prostitution, pauperism, and crime. All children of inebriates are degenerates and the disease may be handed down for four generations.

Says Sir Thomas Browne in his Religio de Medici: "Among thy multiplied acknowledgements lift up one hand to heaven that thou wert born of honest parents, that modesty, honesty, and veracity lay in the same egg, and came into the world with thee." Would that all our doctors sprung from similar eggs!

The alcoholic is only a member of a family group; one branch of a decadent stem.

Vigorous, evenly balanced people of good parentage and health very rarely use liquors to excess. Dr. Dercum has thus clearly expressed himself in this regard: "To strictly normal individuals the use of stimulants beyond the limits pre-

scribed by ordinary social usage, is unpleasant and distasteful, and even when, as the result of special social occasions, alcohol is taken to excess by such persons, a disgust for the drug ensues, and leads to a period of relative abstinence."

Too little attention is given by most of us to the matter of heredity. From one intemperate mother in three generations sprung twenty-seven persons; twelve were alcoholics and three morphine habitués. Demme thus writes: "The direct posterity of ten families of drunkards amounted to fifty-seven children: twenty-five died soon after birth; of the remainder, six were idiots, five dwarfs, five epileptics, one each had chorea, chronic hydrocephalus, hare-lip, and club foot. Two of the epileptics became alcoholics." I had for a patient an actress who combined with a brilliant mind the least regard for morality in any form that I ever had the opportunity to observe. She had been drinking absinthe for several days, and, to say the least, was somewhat broken up. When I asked her in regard to her habits, she replied: "My father was never sober, and my mother a morphine eater. Conceived under such circumstances what can you expect of me?"

Kiernan's history of a degenerate family is in part as follows: "The offspring of the nymphomaniac daughter and her strabismic, migranous cousin were a ne'er-do-well, a periodical lunatic, a dipsomaniac daughter who died of cancer of the stomach, deformed triplets who died at birth, an epileptic imbecile son, a hermaphrodite, a prostitute, a double monster born dead, a normal daughter, and a paranoiac son. This paranoiac married his color-blind cousin; their progeny consisted of an exophthalmic daughter, an epileptic with an undescended testicle, a cleft palated imbecile, dead born quadruplets, an idiot, and a bleeder."

Yet occasionally from such ancestry some of our greatest writers and orators have been produced.

Says Wood: "Many children of genius have an intellectual life spent upon the borderland of insanity, and a moral

history setting them apart from the normal human being, and showing but too clearly the traces of their ancestry."

Goethe, one of the world's greatest poets, dyspeptic and tuberculous, fell in love at fifteen with Gretchen, and worshiped her as Dante did Beatrice; from that time he was never without a passion, and wrote erotic and sensuous songs without number. Victor Hugo's family were nearly all insane, and his finest productions show unmistakable evidence of madness. The father of Lord Byron was a profligate, inebriate army officer, while his mother was ill-tempered and passionate. His uncle, a homicide, was termed the wicked Lord Byron. Byron often sought consolation, like Childe Harold, in the harlot and the bowl, and wrote Don Juan while living with the Countess Guiccioli, a woman whom he had induced to leave her husband.

Poe's father and mother were actors of irregular habits, and the works of this most popular writer of his generation were elaborated in a condition of semi-madness and intoxication. One writer remarks that some are drunkards by choice, and some by necessity.

There is a wide variation in the amount of stimulants which different persons can imbibe without exhibiting the effect. Some get drunk first in their legs, others in their heads. The chief pathological changes may be thus briefly stated. The peripheral nerves and nerve endings are particularly liable to structural changes, as are also the brain and cord. The pia is often thickened, and pachymeningitis is frequently observed. There is œdema of the convex surface of the brain, and effusion into the ventricles. Pure alcohol has been distilled from the brain.

Multiple neuritis is common, more frequent in steady drinkers than periodics, and in women than men. Chronic gastric catarrh almost always exists, and dilatation of the stomach in beer drinkers. I saw some stomachs in the Vienna morgue which on inflation resembled balloons, demonstrating

where the numerous quarts of beer were deposited during an evening's conviviality. Hepatic cirrhosis is almost constant, the alcohol acting directly upon the liver cells. Interstitial nephritis is not as frequent as formerly supposed, while the enlarged, flabby, congested kidney is common. A typical chronic croupous nephritis is noticeable about middle life in many. Degenerative changes in the heart and arteries always appear, dilatation, valvular disease, and fatty heart, are the common results. According to Strümpell, who speaks ex-cathedra, alcohol is the most frequent factor in producing arterial sclerosis. Glycosuria is common in great beer drinkers, notably in Bavaria. A chronic alcoholic is not a good risk for life insurance and should always be written on the sub-standard plan, whether he has taken a so-called cure or not.

Alcoholism is by no means as frequent in women. It is observed more often in England, where gin drinking is prevalent. The chief causes are neurasthenia due to lack of nutrition, menstrual distress, the worry of domestic life, and social demands where stimulants are frequently employed to spur the flagging energy. Whisky and morphine are the popular remedies, taken too often by advice of the physician. Unfortunately alcohol does not so frequently bring sterility as opium, and a diseased, depraved progeny is infused into the community. Psychical derangement, ranging from slightly erratic conditions to maniacal outbursts, are common, owing to the inebriety of women being usually periodic. I know no sadder sight than a woman of culture and refinement crazed with intoxicants. Where every form of intelligent, persistent treatment is without avail, I believe oöphorectomy is in some cases eminently proper. This might cure the malady; it surely would prevent the continuance of the disease in her offspring.

The French women, and a rapidly increasing number of Americans, are becoming addicted to liqueurs, starting with creme de menthe, then progressing by rapid stages to benedictine, curacoa, and absinthe. The delirium of women is usually

of a noisy, raving type: a refined, charming woman may become profane and obscene, set fires or throw weapons. One woman was committed to jail one hundred and thirty-seven times for being drunk, and when drunk her invariable practice was to smash windows.

With the symptoms of an acute debauch we are all familiar from frequent observation, or, more rarely, personal experience. There exists a toxic gastritis with irritation of the kidneys and hepatic cells. The urine frequently contains albumen, and, more rarely, blood. The conjunctiva and skin are yellowish, the tongue tremulous and heavily coated; there is gastric and hepatic tenderness, nausea, and the classical symptoms of an enlarged head and intense headache.

The constant drinker presents many singular phases. One of the most interesting is that of the solitary drinker. We observe this sometimes in men who apparently lead the most exemplary lives — such as clergymen, temperance advocates, college professors, and literary men. Such men would never enter a saloon, or even drink wine at a social gathering, but in their studies, surrounded by their books, they abandon themselves to the free use of the bottle. Many a grand and noble effusion has evolved from the brain thus stimulated.

After years of indulgence a chronic gastric catarrh, cirrhosis of the liver, or a general paralysis reveals the condition. When the habit becomes known it gives rise to such remarks as "What a brilliant mind has been impaired by drink," or "What would he have been, had he left stimulants alone." This is in a measure wrong; for the fact is that the brilliant rhetoric and persuasive eloquence are brought about by the action of whisky on a degenerate brain, and the person deprived of this spur to action would very likely be commonplace. Periodicals or drink-storms are much like mania, and are almost all from defective ancestry, as insanity, epilepsy, or moderate drinkers. These drink-storms resemble epilepsy closely, and the intervals usually grow shorter with succeeding years. Sometimes they

occur with astronomical exactness, as in one case it occurred every 91 days and two hours; another, every 62 days and four hours. Some get drunk on Saturdays, and attend church on Sunday as a measure of atonement. The proprietor of a large mercantile house would apply himself closely to business for eleven and one-half months, and then go off on a fishing trip with a low character whom he employed to keep him constantly intoxicated for thirteen days, reserving one day and night for sobering up, and preparing for the resumption of his business.

There is no distinct proof that general paralysis is due to alcoholic excess alone, but it is a powerful factor when overwork, intellectual strain, worry, and terrible disappointments exist.

The chronic alcoholic is a most unmitigated liar at all times, and no credence can be placed in his sayings or promises. He is also a coward, but occasionally dangerous, as when he has the delusion that some one is endeavoring to poison him. The sexual delusion frequently gives rise to uncontrollable jealousy and wife-murder results. Many a lovely, refined woman has thus been sacrificed by an alcoholic lunatic.

Cerebral automatism has been well established in the minds of scientific observers for years; yet it is almost impossible to have it recognized in the law courts. Somnambulism, epilepsy, catalepsy, the hypnotic condition, and, more frequently, alcoholism are the causes. Persons who are under the influence of alcohol suddenly commit murder or some other crime entirely at variance with all previous conduct. A young man was convicted of murder under the following circumstances: He was unaccustomed to drinking, but went to a barn-raising, drank some hard cider, and later took a drink of gin. He had a pistol, and while wandering aimlessly about, deliberately shot a man. When he recovered he was entirely unconscious of the occurrence, yet did not appear drunk when the shooting took place.

A merchant in an Eastern city was never drunk, but was

a heavy wine drinker, which frequently caused intense headache. He drank champagne heavily at the club, and his mind became confused. When he recovered two weeks later, he found he had married a lady acquaintance, visited Boston, Portland, and Montreal, awakening at Saratoga. He drank steadily all the time, his mind appeared clear, and nothing unusual was noticed in his manner or conversation. He applied for a divorce on the ground that he had no knowledge of what he had done. This was promptly denied by the courts, but a settlement was mutually agreed upon. One year later he awoke on the ocean, and found that he had taken a steamer for Liverpool, and was several days from the port of sailing. All he could remember was that he had imbibed quite freely with a friend in Boston, and he ascertained that he had embarked the same evening. I had for a patient a traveling salesman who was drunk for a week, during which time he sold several bills of goods. When he became completely sober he positively asserted that he had no recollection of any event of the past week. The business men whom he called upon noticed that he had been drinking; yet he appeared to understand his business thoroughly, and exhibited his usual manner in securing their orders. He had handled one class of goods for years so that automatically he went through his accustomed routine.

Delirium tremens presents a multitude of phenomena, from the tremulousness, depression of spirits, mental confusion, and the so-called horrors to the wildest mania. It develops usually during a debauch or when the stomach will no longer retain liquor. That a sudden cutting off of stimulants will occasionally precipitate an attack cannot be denied, but if the case is intelligently handled it is a rare accident. The hallucinations are usually those of terror or horror, and sometimes ludicrous, as in a case narrated by Flint, where the patient declared that he could readily sleep if the persons under the bed would stop tickling his fundament with straws. Insects, snakes, toads,

rats, spiders, dragons, and wild beasts are frequently imagined to be present. One of my friends would delay sending for me until he saw a rat with a blue tail, which was evidence to him that he was in bad shape. Another would keep his arms outstretched, and declare that he was one of the thieves crucified on Calvary. Persistent insomnia and restlessness are constant features much exaggerated at night. A typhoidal condition is usually fatal, though I have observed recoveries from apparently hopeless conditions. Occasionally the thermic centers appear paralyzed, and a temperature of 104 degrees to 105 degrees ensues. The patients are very excited, delirious; sweat profusely, and die in a few days of exhaustion. Vomiting is frequently excessive, and the retching is painful to observe. Thirst is intense, but fluid increases the nausea, placing the poor devil in the condition of Tantalus in Hades. Sometimes the patient will be courteous and quite rational, yet the mind will be preoccupied, and a certain unrest and uneasiness will be observed. A celebrated actor had been drinking several days, and was placed in my charge one morning that he might be rendered fit for the evening's engagement. As there was an advance sale of $1,200, the gravity of the case from a financial standpoint became apparent. The liquor was dispensed with at his own suggestion. He was given a hot bath and vigorous massage, followed by hot broths containing the red pepper condiment. Three doses of strychnine nitrate, 1-50 gr., were given hypodermically. Through the day he conversed and joked freely. A drachm of sodium bromide produced a short afternoon nap. On account of his manifest uneasiness and habit of watching the corners of the room, I did not feel sanguine of success. He went to the theater at the usual time, accompanied by his valet, declaring that he never felt better in his life, and started to make up for the performance. He soon exclaimed that on account of certain odors about the dressing-room, it would be impossible for him to act, and no persuasion could change his determination. I well re-

member the array on the table at his room when I called an hour later. On the table two bottles of champagne, an equal number of beer, and a quart of whisky were conveniently arranged, while opposite sat a boon companion, endowed with a royal purple nose. He greeted me in this fashion: "Doctor, I don't need you any more to-night, but come very early in the morning."

I had some curious experiences while surgeon of a national soldiers' home containing nearly 2,000 inmates. They would drink anything containing proof spirits, from cologne water to liquid shoe blacking. My druggist was quite intelligent and once had a good pharmacy in New York city, which he had lost on account of delirium tremens. He promised me faithfully that he would let the tinctures alone if he could have half an ounce of whisky three times a day. All liquors and essences, of course, were securely locked up. Our formula for essense of peppermint was one ounce of oil of peppermint and 15 ounces of alcohol. He had just prepared this amount, and before I could lock up the bottles, I was called away by an accident. On my return half an hour later he was collapsed on the floor, and the empty bottle showed that he had swallowed the contents, probably without dilution. An emetic was administered, and he was removed to the hospital. He had all the various acute inflammations mentioned in medical dictionaries, running from stomatitis to cystitis, and was gathered to his fathers on the third day.

One day a painter brought an order from the commandant for a pint of alcohol to cut some shellac. Fearing the result, I had him bring his paint-pot, into which I poured the alcohol. In half an hour he was dead drunk with his lips well decorated with paint.

At one time, having an unusual number in the guardhouse, I inquired of my secretary as to the cause. He replied: "We take Jamaica jinger and beer mixed, and I tell you it makes a hell of a fuddle."

The treatment of an acute debauch consists of an emetic, if the stomach is still supposed to contain liquor; hot baths; calomel, followed by a saline laxative; broths with pepper, and hot milk.

A case of delirium tremens must be carefully examined, especially in reference to the condition of the heart, kidneys, and nervous system. The patient should be confined to the room, and in most cases to the bed. I much prefer a strong, good-natured, even-tempered nurse to strapping or a padded room. The alcoholic is usually not aggressive, or prone to injure others than himself. All liquors should be absolutely interdicted. **This has been my rule in hundreds of cases, except in case of pneumonia or great heart weakness; and I rarely am obliged to deviate from it.** The continuance of small quantities of liquor does more harm than good, and prolongs the convalescence. Moderate smoking I allow. If not too weak, a hot bath, followed by a vigorous rubbing, is helpful. Turkish baths are dangerous to persons with dilated hearts, a common occurrence in inebriates.

I have had two cases of heart fracture in Turkish bath-rooms, one of the right auricle, the other of the right ventricle.

Emetics should never be employed, owing to the danger of cerebral hemorrhage, or arterial rupture in other localities. For days usually, no food has been taken, and this is of first importance. Hot, strong beef tea, to which cayenne pepper has been liberally added, is most excellent. An amount of pepper which would produce gastritis in a healthy stomach is often a beneficial stimulant to the inflamed stomach of a drunkard. Various broths, malted milk, peptonized milk, soft boiled eggs, custard, bovinine, liquid beef, milk and Vichy, are all of assistance. I once prescribed liquid peptonoids, and my patient drank a pint bottle to get the effect of the sherry which it contained. All foods should be soft and easily penetrable by the gastric juices.

A drug of great value in quieting the patient and procuring

sleep is sodium bromide, and it should be given in large amounts. Never give less than one drachm, but usually two, as the initial dose. This should be well diluted. Years ago I heard Wm. A. Hammond lecture on the diseases of Wall Street, and his advice in such cases was, give 100 grains and repeat in two hours if necessary. I have given one ounce in twenty-four hours with good results. Hydrobromate of hyoscine as an auxiliary remedy is of value, gr. 1-100, hypodermically, repeated but once in two to four hours. Watson, the Macaulay of medicine, strenuously advocated the use of morphine, and since his time no efficient substitute has been found in certain conditions. Where the retching is intense and there is evidence of great pain, I know of no remedy comparable to the injection of morphine. It should be carefully watched, and the quarter-grain dose not repeated too frequently. At first it should be combined with atropine, which has a positive effect in allaying the drink craze. Chloral is an efficient hypnotic, likewise a dangerous remedy, which occasionally causes death. Several accidents have come to my notice, and prejudiced me against its employment. In sthenic cases half a drachm, in divided doses, may be safely administered. Digitalis is of benefit in certain cases of weak heart, preferably in the shape of digitaline used hypodermically, or 10 to 20 drop doses of the tincture every three or four hours until the effect on the pulse is noted. The heroic dose of one-half ounce should be condemned. Calomel has a markedly sedative action on the stomach, and is best administered in the form of powder, dropped on the tongue. A certain amount will be absorbed even when the vomiting is frequent and profuse.

Sometimes a patient will feel the impending drink-storm and apply for relief, or more frequently his friends will make the application for him. Certain remedies are valuable in this connection. First, if the patient be plethoric and a hearty eater, a large dose of calomel should be administered, followed

by a saline, such as Hunyadi or Rubinat water. Probably the best treatment is to give, hypodermically, strychnia 1-50 gr. and atropine 1-100 gr. three times a day. Quite rarely the atropine dose must be reduced on account of unpleasant physiological action. Sodium bromide is necessary for quiet and sleep. Potassium bromide should be avoided, on account of the depressing action of the potassium salts. For years I have given the acid phosphates as cerebral tonics, and I believe they do good. There is a tremendous loss of phosphates by the urine, and, theoretically, such preparations are indicated.

The question of a permanent cure for alcoholics has been a fruitful subject for discussion, and probably always will be, unless mankind becomes constituted on radically different lines. The home treatment has many disadvantages, and is rarely of benefit. Isolation in a state or private institution for periods of from one to six months holds out the greatest hope for success. We could adopt here, with modifications, the Austrian method, where the inebriate is taken in charge by the state for a limited time, either on his own complaint or that of friends, on much the same plan as in insane cases. Each case is carefully analyzed and as carefully treated.

We annually expend in this state hundreds of thousands of dollars in caring for insane people who never can be any good to themselves or the community, while one-tenth of that amount additional would be the means of rendering hundreds of alcoholics useful members of society. It is a fitting time to advocate the establishment by the state of a hospital for inebriates, located in close proximity to the Twin Cities, and managed by the best talent obtainable, not reformed drunkards or morphine habitués. Many physicians are not aware that in well conducted establishments over 50 per cent. of their patients have been temperate for a period of over five years after treatment, and the percentage is rapidly increasing.

A few years ago Keeley announced his bichloride of gold remedy, and an epidemic of cures ensued. The Dwight hypo-

dermic injection gives an analysis of strych. sulph. gr. 1-64, atropine gr. 1-128, boric acid, and water. This usually has a yellow label, or is contained in a yellow bottle, for mental effect. The tonic consists chiefly of a compound tincture of cinchona, a little aloin, and chloride of ammonium. Not a trace of any gold salt has ever been found.

Many of the so-called cures contain tartar emetic. This stops the drink craving and also desire for food, and usually keeps the patient busy attending to his stomach and bowels. The liquors furnished at the cure establishments contain this drug, and the patient very honestly states that his system is so changed that he cannot enjoy the taste of liquor.

A few years ago a gentleman of this city desired me to remain with him while he took a bottle of a positive cure. He stated that he knew he would be very sick, which was correct. The evidence of tartar emetic was unmistakable. A few months later he informed me that another bottle would be necessary to complete the cure, which was evident from his condition, but I declined to be present during the ordeal.

Many of these cures are an abomination, being managed by unscrupulous men for the purpose of robbing the unfortunate inebriate, anxious to shake off the terrible octopus which is dragging him down. These vultures are armed and equipped with glowing testimonials, not only from patients, but also from highly moral and philanthropic individuals. There never was a medical swindle so vile that it could not readily induce some constipated old minister or some short-haired creature, masquerading in female attire, to sing pæans in its behalf.

The following is but a single instance of their knavery. A university graduate became engaged to a young lady who had pronounced ideas on the liquor question. Hearing that he had drunk beer with some students, she declared that he must take the cure before the marriage could take place. He hies himself to a so-called cure, and states his case, that frequently

he would drink a glass or two of beer, but was never intoxicated in his life. He is promptly informed that treatment is highly necessary to secure him from perdition. He pays his hundred dollars, is injected, and numbered among the redeemed. On making application for life insurance he is promptly rejected, and only accepted after a thorough investigation of the matter.

One of the local cures is managed by a graduate of a fake institution, whose sole ability consists in a Uriah Heep expression of countenance, and a sepulchral voice. When his tartar emetic preparation is swallowed, the recipient sees with a new light, loses the desire for liquor instanter, and seeks the seclusion which the bath-room grants. His star commendation is from an actress who is a morphine, cocaine, and liquor fiend, and whose present condition is as lamentable as before undergoing treatment.

To argue that a man can be entirely rehabilitated in three or four weeks is absurd, and that the medicines administered have a lasting effect, no sensible physician will admit. Moreover, these cases are not carefully examined. One of my patients was treated the prescribed time, all the while being very ill with chills and fever. On his return home a huge rectal abscess was discovered.

One fact should be well known, that many cases recover suddenly without any treatment, the disease having died out, when the man becomes an abstainer from that time. No matter whether he has signed the pledge, taken a cure, or swallowed sugar pills, the craving for liquors has ceased, probably brought about by some cerebral change.

I well remember a New England village character who was embalmed in whisky and hard cider for twenty years. One day he appeared on the street perfectly sober, and to his wondering friends said the he had made a d——d fool of himself long enough. He was never known to touch liquor again. Man goes through climacteric changes much the same as woman, and at these epochs the disease is most apt to disappear.

THE EFFECT OF ALCOHOL ON THE NERVOUS SYSTEM IN THE LIGHT OF RECENT SCIENTIFIC RESEARCH.

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The evil effects of alcohol upon the body become more and more apparent and conspicuous when the search-light of modern scientific methods is focussed upon this subject. It has been well known to physicians and scientific men for a number of years that the use of alcohol, even in moderate quantities, when long continued, produces various diseases of the nervous system, such as paralysis, insanity, apoplexy. In hundreds and even thousands of cases of those who have been addicted to the use of this poison for any considerable time, by post-mortem examination, severe and distinct organic changes have also been found in the brain and other parts of the nervous system.

The immediate evil effect of alcohol in moderate quantities, however, has not been so clearly understood or appreciated until more recent methods of study have been applied to this line of investigation. The fact is now thoroughly established that alcohol, even in small quantities, does produce serious structural changes in the different tissues of the body. These organic changes can be demonstrated in the human body after death caused by acute alcoholic poisoning, and in the bodies of lower animals that have been given moderate quantities of alcohol, and killed a few hours after the administration of this

poison, the cells of the body being then subjected to a careful microscopical examination.

The purpose of this paper is to bring out clearly, if possible, and to emphasize the fact that alcohol in moderate quantities does produce, in a short time, serious organic changes in the nerve cells of the brain and central nervous system. To make the matter clearer it may first be necessary to place before the mind of the reader some facts with reference to the finer anatomy of the nervous system, and the internal structure of the nerve cells which form the essential tissue.

The central nervous system, consisting of the brain and spinal cord, is made up of different kinds of tissue: First, the nerve tissue proper, which is composed of nerve cells; second, connective tissue, which forms the framework of the nerve system, and the supporting tissue for the cells; third, the blood vessels and lymphatics, the function of which is to carry food to the nerve cells and to the other tissues of the brain, and also to carry off waste matter.

Figure 1 is an illustration of a nerve cell and shows how the nerve cell is made up of several different parts. It takes all these different parts and processes to form a nerve cell in its entirety. This cell, or nerve unit, is usually considered as made up of two parts in general: first, the central part, described as the body of the cell; and, second, the various branches or processes that are attached to the body of the cell, and extend out in various directions from it. From one standpoint, the body of the cell is, perhaps, the more important part, as it has control of the life and nutrition of all the other parts and branches of the nerve cell connected with it. The branches, or processes, which extend out from the cell body are attached to the central part or body in somewhat the same manner as the branches of the tree are connected directly with the main trunk. As the branches of the tree are a part of the tree, so these branches, or processes, of the nerve cell are really a part of the nerve unit. As will be seen in Fig.

1, these processes extend out in nearly every direction from the body of the cell. There is usually one process much longer than the others, and this may be two or three feet in length. In the illustration this is marked n. Its entire

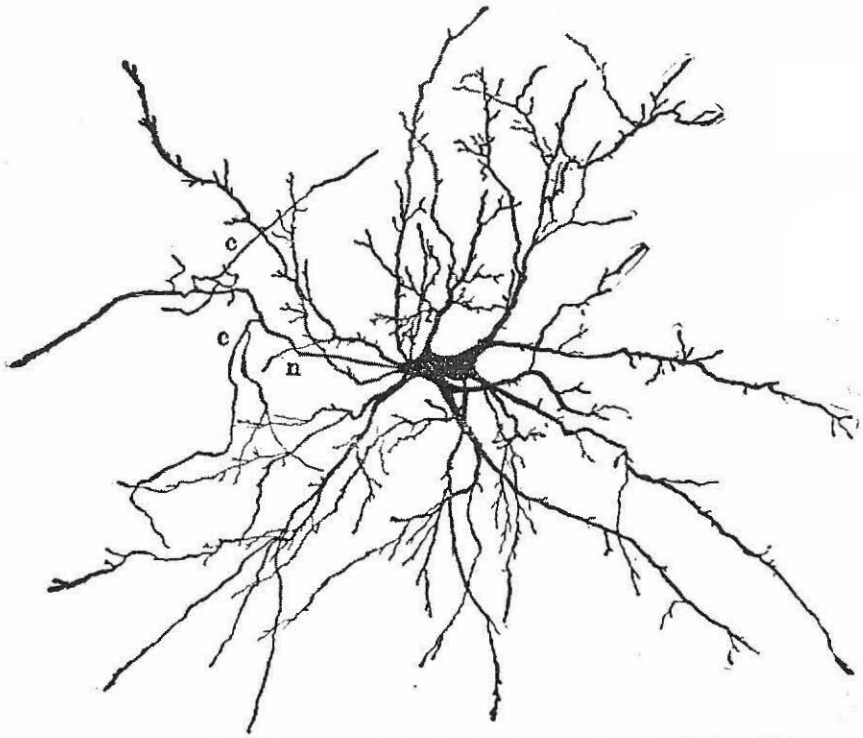


FIG. 1. A healthy nerve cell of the brain of a cat; n, single axis cylinder, which extends some distance outside of the drawings, and in some cases in the nervous system of man, may be two or three feet long; c, c, are collateral branches of the axis cylinder. The other branches of the nerve cell are called the protoplasmic branches, and extend only a short distance from the body of the cell.

length is not represented, for this would be impossible; but in many cases, as, for instance, in the nerve cells in the lower part of the spinal cord, this particular branch extends down the lower limb, and ends finally in the skin on the sole of the foot, in this case being three or more feet in length.

These nerve cells, as we term them, are the units or funda-

ments which make up the whole nervous system. They may be looked upon as real living animals, for such indeed they are, — very small, to be sure, so small that we must have a powerful microscope to see them; yet these little bodies are alive and active, and take in food from the blood.

Each cell has its peculiar duties to perform, the same as individual members of society have each their particular place and vocation. These nerve units have various shapes, forms, and sizes, many of them being in the same shape as that shown in the illustration; others are star shaped, some are flask shaped, some spindle shaped, and still others have irregular forms of various kinds. These nerve cells, as before stated, are microscopical in size, but some of them are comparatively large, and in some of the lower animals they are sufficiently large to be seen by the naked eye. In order to study their shape and form, their internal structure, and the various changes that occur in them as the result of poisons like alcohol, and disease processes, it is necessary first to color or stain these nerve cells with a dye so that they may be better seen. and then to observe them carefully under a powerful microscope. There are millions of these little living nerve units in the brain and nervous system, and it is by their activity that we are enabled to hear, to see, to feel, to move, to smell; in short, to perform all the functions of intelligent men and women. Whenever they become diseased, or their function is in any way impaired, some of our senses or our faculties or the function of some organ of the body, become impaired or destroyed. In order that these microscopical bodies may do their work properly, it is necessary that they be kept perfectly healthy, and that they have the proper amount and the right kind of food.

We may regard each of these little nerve bodies as a minute machine, the purpose of which is to transform into nerve energy the energy that we take into our bodies in food. This nerve energy is a real form of energy, and not a myth. The

nerve current travels along the nerve fibers that are attached to the body of the nerve cell, and passes from the brain and the central nervous system out, in one instance, to the muscles to make them contract, or along another nerve path to the heart to keep it in motion. Other currents travel along still other lines to the stomach and bowels, and to all the different organs of the body, keeping them stimulated and active and performing their functions properly. No mechanism conceived by the mind of man is so complex and so delicate in its make-up as these little nerve cells. It is really wonderful how well they retain their integrity under so many varied and harmful conditions. In order to appreciate more fully how delicate the make-up of these little nerve cells is, we may notice briefly some of the main points in their internal structure, as revealed by the microscope when they have been properly stained for this study.

Figure 2 shows the body of a nerve cell with part of the processes that are attached directly to the body, but it does not show all the processes, as does Fig. 1. One may notice in this first a little black point in the center of the cell. This is known as the nucleolus. Outside of this is another larger space, showing white in the illustration, which is known as the nucleus. Scattered throughout this white space is a fine meshwork composed of delicate nerve fibers, which is usually spoken of as a nucleo-reticulum. Outside of the nucleus is the principal part of the cell, known as the cytoplasm. We may notice in this a network of nerve fibrils similar to those seen in the nucleus. This is called the cyto-reticulum. Scattered through the cytoplasm of the cell are small masses of matter which stain or color very readily with certain dyes, and are therefore called chromophilic bodies. They are represented by the dark-colored patches within the cell body. All of these different parts of the body of the nerve cell are shown in Fig. 2. When seen under the microscope these chromophilic bodies have a somewhat granular appearance. They are supposed to be the

food matter for the cells, and are composed of highly complex and elaborated substances that have been transformed by the cell from the food substances brought to it by the blood current. During our waking and active hours we are constantly using up nerve energy. This nerve energy is manufactured

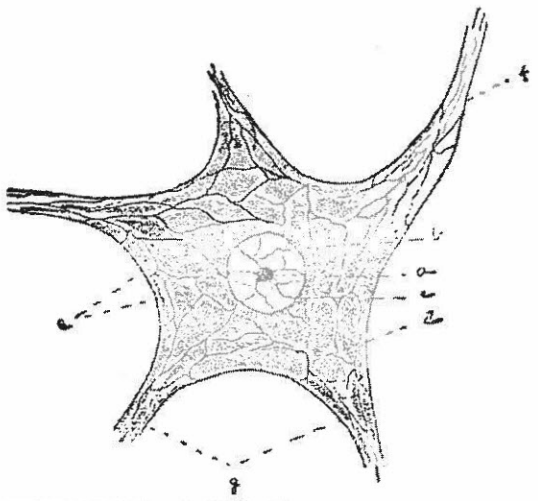


FIG. 2. (After F. R. Bailey, in *Medical Record*.) The body of a human nerve cell, showing the internal structure of a cell, and the beginning of the different branches or processes which extend out from it: *a*, nucleolus; *b*, nucleo-reticulum; *c*, nuclear membrane; *d*, cyto-reticulum; *e*, chromophilic bodies; *f*, axis cylinder process; *g*, protoplasmic processes.

within these little nerve cells out of the energy that is stored up in the chromophilic bodies that we are now describing.

When one becomes fatigued by exercise, the energy in the nerve cell is nearly all used up, and we find by examination of the lower animals after they are fatigued that these chromophilic bodies are very much lessened in number and in quantity, and the nerve cell is very much smaller, and irregular in outline. This would seem to emphasize the fact that the little nerve cell is a very perfect and complex machine for transforming the nerve energy out of the latent or potential energy that we take into our bodies in our food. These

chromophilic bodies are more susceptible to influences, perhaps, than any other part of the cell, and consequently when any poison like alcohol comes in contact with the cell, the effect is first seen by changes in them. In fact, the changes which occur in these chromophilic bodies furnish us a very delicate test of the effect of different substances upon the nerve cells of the nervous system.

The fibrous network, or reticulum, in the body of the cell, is that part which has to do with originating and transmitting nerve currents. This part of the nerve body is not so sensitive to different substances and poisons, and consequently changes are not observed in these fine fibrils so quickly as in the chromophilic bodies. Nevertheless they are very delicate, and their structure is very easily affected by alcohol and other poisons that may be brought to the cell in the blood current.

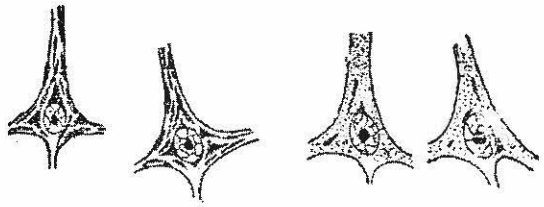
Experiments have been made upon the lower animals, particularly the rabbit, the dog, and the cat, to determine, if possible, the immediate effects of alcohol upon the internal structure of the nerve cell. These experiments have been followed out somewhat as follows: An animal like the rabbit has been fed a moderate amount of alcohol with its food, the amount given being sufficient to produce slight or moderate intoxication. The animals have been killed at different periods after eating the food containing alcohol, and the nerve cells and the central nervous system have been subjected to careful microscopical examination by the latest and most approved methods of study. Some animals have been killed in a few minutes after the drug has been administered; others, in a few hours. In more than one instance, changes have been found in the nerve cells in less than an hour after the administration of the alcohol. A German investigator by the name of Dehio, and also Dr. C. C. Stewart of Clark University, Mass., have brought out some interesting and convincing facts along this line. Dr. Stewart found distinct retrograde and pathological changes in the body of the nerve cells of the rabbit

fifty minutes after the administration of a moderate quantity of alcohol. The same changes were also observed in a more marked degree in the case of other rabbits that were killed and whose nerve cells were examined some fifty-four hours after the administration of the alcohol.

The same changes that have been observed in the nerve cells of these lower animals under the administration of alcohol have also been observed in the brain cells of man in cases where death has been produced by acute alcoholic poisoning. The nature of the first changes found in both the rabbit and in other lower animals, and also in man from alcoholic intoxication, is a dissolving and scattering through the body of the cell of the chromophilic bodies previously described. The change is apparently the same whether alcohol is given to the lower animals, like the rabbit, for experimental purposes, or whether it is taken by man himself for the purpose of gratifying his perverted appetite. The opinion of all investigators is unanimous that alcohol causes a breaking down and dissolution of the chromophilic bodies. The larger the quantity of alcohol taken, and the more severe the poisoning, the greater are the changes found in the nerve cell. If the poisoning is continued for any length of time, as it is in cases of chronic alcoholism, then the more solid structure of the nerve cell breaks down under its influence, and in some instances the cell is entirely destroyed and disappears.

Figure 1 is an illustration of nerve cells from the human brain: *a* represents the cell in a healthy condition, and the chromophilic bodies can be distinctly seen; *b* is an illustration of the nerve cells from the brain of a man who died of acute alcoholic poisoning. It will be noticed that in this nerve cell the chromophilic bodies have largely disappeared, and in place of the granular substances being collected together in masses, as is shown in *a*, they are dissolved and scattered, and have almost entirely disappeared from the body of the cell. The changes represented in *b* are the same as those observed in

the nerve cells of rabbits and others of the lower animals that have been fed alcohol, and in which cases the examination of the nerve cells has been made within a few hours after the administration of the poison. It should be emphasized that this dissolution and disappearance of the chromophilic bodies within the cell is a retrograde process, and is the initial step in the breaking down of the nerve cell, which goes on from bad to worse with the use of alcohol. The dissolving and disappearance of these chromophilic bodies is known as chromato-



a *b*

FIG. 1 (after F. R. Bailey, in *Medical Record*) is an illustration of the nerve cells from the human brain. The nerve processes of the cell are not shown in the drawings: *a* represents two healthy nerve cells; *b*, the nerve cells from the brain of a case of acute alcoholism. In *a* the chromophilic bodies are shown distinctly; in *b* they are dissolved and scattered, and have largely disappeared, from the internal use of alcohol.

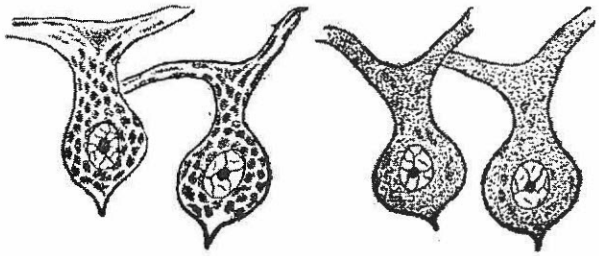
losis, and is the first change that occurs in the degeneration of the cell.

Figure 2 portrays the changes that occur in the nerve cells in certain diseases, such as sunstroke, diabetes, diseases of the kidneys, in which poisons are accumulated and retained in the body, and affect the nerve cells; *c* represents the healthy nerve cell, while *d* represents the diseased nerve cell, caused by poisons that accumulate in the body as a result of these diseases.

Figure 3 represents the changes produced in the nerve cell as a result of the poisons of infectious diseases, such as diphtheria, typhoid fever, hydrophobia; *e* represents a healthy nerve cell with the chromophilic bodies distinct, while *f* represents the cell after it is acted upon by the poisons of these diseases.

In figures 1, 2, and 3 we have a very telling example of the effect of different kinds of poisoning on the nerve cell. From

this we can see that alcohol is an active poison, producing the same changes in the nerve cell as do the poisons of diphtheria, typhoid fever, diabetes, and other constitutional diseases. These changes in the nerve cell already referred to are the

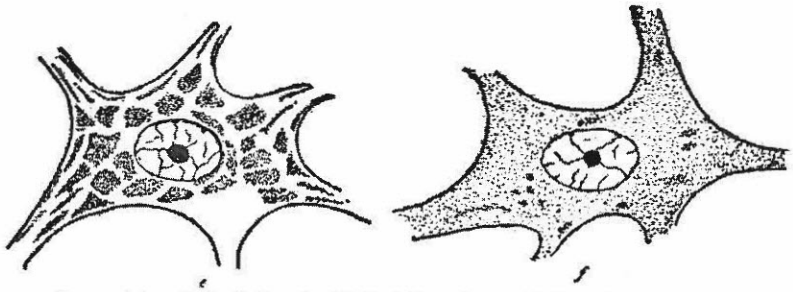


c *d*

FIG. 2. (After F. R. Bailey, in *Medical Record*.) Nerve cells from the cerebellum, or hind brain: *c*, represents healthy cells; *d*, cells that have been poisoned by such diseases as sunstroke, diabetes, and uremic poisoning accompanying diseases of the kidneys. In *d* of this illustration the chromophilic bodies are also dissolved in the cell by the poisons of these diseases.

initial or beginning changes. When alcohol is used for any considerable length of time, the retrograde process goes on, and more severe changes are noticed in the nerve cell.

Figures 4 and 5 are drawn from the nerve cells found in the brain of a man who died from alcoholic insanity. It will be



e *f*

FIG. 3 (after F. R. Bailey, in *Medical Record*) represents nerve cells from the human spinal cord: *e*, a healthy nerve cell, showing distinctly the chromophilic bodies, and *f*, the appearance of a nerve cell that has been poisoned by the toxins produced by diphtheria, typhoid fever, hydrophobia, etc. Here we see in *f* an almost total absence of the chromophilic bodies. They have been dissolved and scattered by the poisons of these diseases. We may see from these illustrations the effect of three classes of poisons upon the nerve cells. These three classes of poisons produce the same degenerative changes in the body of the nerve cell.

noticed that the nerve branches in Fig. 4 are very much swollen and distorted and broken down. In Fig. 5 are seen the degenerative changes that have occurred in the body of the cell

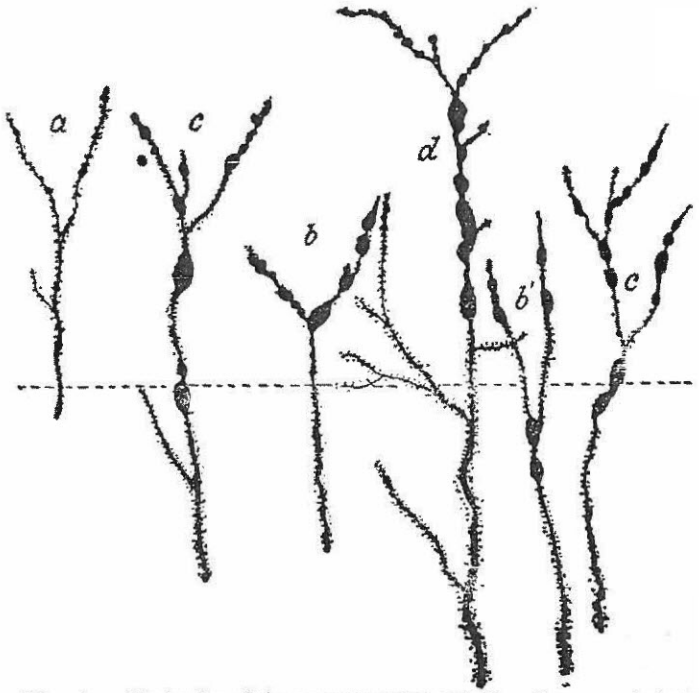


FIG. 4 is an illustration of the nerve branches and fibers in a case of alcoholic insanity. The patient died of this disease, and when the nerve fibers were examined under the microscope, they were shown to be swollen and broken down in the manner illustrated in the drawing. These swellings of the nerve fibers, as seen in this illustration, are characteristic effects produced by alcohol, and are usually seen in the brain of those dying from alcoholic insanity.

as well as in its branches. Compared with a healthy nerve cell, Fig. 1, there is a decidedly different appearance.

Since alcohol causes these various changes in the nerve cells of the brain and in the nervous system of man, it is no wonder that when he is intoxicated his mind is clouded, his speech is incoherent and thick, that his ideas are disconnected, his vision is blurred, objects seem distorted, he has hallucinations and illusions of various kinds, he staggers. How can

any one whose nerve cells are broken down by this poison think and act as one who is sane and healthy?

Many, of course, may argue that an occasional spree does not injure their health, but if feeding a rabbit or a cat a moderate amount of alcohol is sufficient to produce retrograde

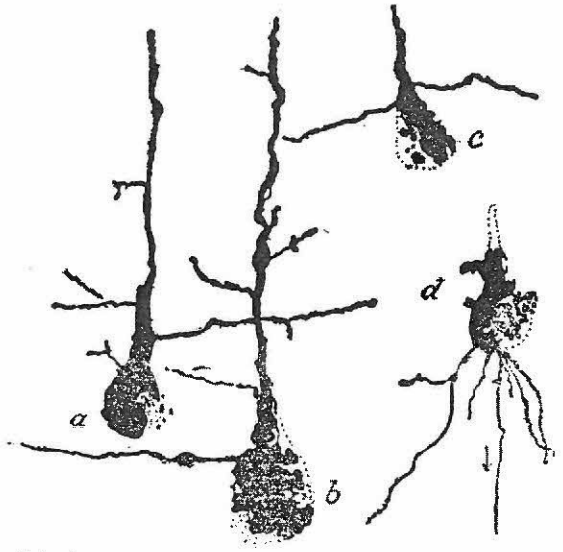


FIG. 5. This figure shows four nerve cells from the brain of a man who died of alcoholic insanity. It will be noticed that the body of the cells and the nerve fibers are broken up and degenerated.

The changes in the nerve cell and nerve fiber shown in Figs. 4 and 5 are the more severe changes, and represent complete destruction of the nerve tissue. The changes represented in Figs. 1, 2, and 3 are the initial changes produced by alcohol and other poisons, and are the beginning of a degenerative process. Such changes as are shown in *b* of Fig. 1 occur whenever a man becomes intoxicated from the use of alcoholic liquors.

changes in the nerve cells, is it not reasonable to suppose that every time a man becomes intoxicated, the nerve cells undergo the same retrograde process in their structure? We can come to no other conclusions from these scientific investigations.

It is true that if the nerve cell is not too thoroughly poisoned it will rebuild itself, and in time present a normal appearance, but no one can argue that this is beneficial to the nerve cell; on the contrary, common sense and reason both tell us that it is positively detrimental. Evidence is becoming more

and more clear and emphatic that alcohol at all times, and in all quantities, however small, acts as a poison upon the human body. Of course, the less poison taken, the less the harm; the more taken, the greater the harm; but harm is always done to a greater or less degree. A man may use alcoholic liquors for a time without doing apparent injury to his life, but sooner or later there is a reckoning day, and at the age of forty-five or fifty years he may be paralyzed, suffer a stroke of apoplexy, or contract some other serious disease resulting from chronic alcoholic poisoning. The writer has seen scores of cases of paralysis caused by alcohol in one who never became "intoxicated." Man does not need to be so intoxicated as to dethrone his reason in order to have the drug do him harm.

It is claimed that alcohol is a food because it is oxidized in the body. The fallacy in this argument will be clearly seen if it is stated in the form of a syllogism.

All foods are oxidized in the body. Alcohol is oxidized in the body, therefore alcohol is a food. Let us take some other substances that are known to be oxidized in the body. Phosphorus is oxidized in the body, therefore phosphorus is a food. Iron filings are oxidized in the body, therefore iron filings are a food. In the decay of meat and other proteids, certain compounds are formed known as ptomaines. Some of these are deadly poisons and are oxidized in the body, therefore ptomaines are food.

Again, it is claimed that alcohol is a food because it decreases tissue waste. Apply the syllogism and see how this will bear the test of logic. Morphine, when taken into the body, reduces tissue waste, therefore morphine is a food. Arsenic diminishes tissue waste, therefore arsenic is a food. And so we might multiply by going through the whole list of narcotic poisons.

What can be said in defense of such sophistry? Is it not an insult to the common intelligence of school children? To say nothing of the audacity of attempting by such argument to overthrow the combined testimony of the highest authorities on physiology!

MENTAL SUGGESTION AS AN AID IN THE TREATMENT OF MORPHINOMANIA.

By Sam'l H. Green, M.D., Oakdale, Ga.

On September 10, 1893, I received into the hospital of the Chattahoochee Brick Company's branch of the Georgia penitentiary Robert D., white, age thirty-five, who had been, according to his own statement, addicted to the morphine habit for over five years. The prison guard who brought him from the jail, not being instructed by the county physician, refused to let him have the drug during the trip, and, as a consequence, when he reached the hospital he was almost immediately seized with a violent convulsion. A letter from a reputable physician, who had attended him professionally during his incarceration in jail, stated that he was in the habit of using four hundred grains of morphine a day. I restored patient by hypodermatic injections, and ascertained that his stomach frequently failed to take up the morphine, and then he was in the habit of resorting to the needle. Hundreds of red blotches, which literally covered his arms and legs, bore out this statement. The patient said that he had been told that when he arrived at the penitentiary, the morphine would be cut off, and begged piteously that it be not done. After reflection I decided upon a new line of treatment in this case, and in order to secure the patient's confidence, I resorted to diplomacy. I told him that he had been misinformed, that his supply would not be cut off, but that he had been addicted to the habit so long that he could not do without it, and that I would furnish him the drug as long as he remained in prison.

As an earnest of good faith on my part I gave him a little over three ounces of morphine in a bottle, instructing him to take it when he thought he needed it, and to come to me for another supply when he had used that. Promptly on the afternoon of the fourth day he asked for another supply. In the interim I had kept patient under surveillance, and in every way possible had fortified my already strong hold upon his confidence. I told him that the morphine I had had been on hand for several months, and when kept so long lost a percentage of its potency, and to counteract this loss of strength it would be necessary for me to make a solution and add another drug to the mixture. I took a quart bottle, filled it with water, and put three hundred and sixty grains of morphine in it; of this mixture I gave him a tablespoonful three times a day, and placed him on a light, nutritious diet. On third day patient showed rapid, nervous heart. I told him it would be necessary to increase strength of mixture, and that I would give him a drug which, when taken into the stomach an hour after the morphine solution, would make the latter more effective. In the meantime I had secured a quart bottle exactly like the one containing the morphine mixture, and after filling it with water, had placed it in my medicine cabinet. When I noticed that he observed my actions, I took the bottle of water out, and putting about half an ounce of sulphate of quinine in it, set it away in the cabinet again. The patient smiled confidently when he saw me do this. I then gave him his regular dose of the morphine solution, telling him that the recent addition had made it extraordinarily strong. Patient concurred with me in this, saying that it tasted "awful strong." Patient complained that his legs and arms pained him like they did when he had been deprived of morphine on his journey from the jail to the penitentiary. I told him that it was caused by rheumatism, and that I would give him something that would cure that. I took a two-ounce bottle, put four fluid drachms each of tincture of iron chloride, and digitalis in it, filled it

with water, and commenced giving him ten drops three times a day. I had kept patient on morphine mixture two weeks, when I commenced a further reduction by putting in a tablespoonful of water every time I gave patient a dose of the mixture. I kept him on this treatment, also the digitalis and iron, for four weeks, when I commenced to give him five grains of quinine in solution four times a day. Patient began to improve greatly, circulation became better, and his appetite increased wonderfully. At the expiration of seventy-two days I gave patient last dose of morphine mixture. Under the reduction of one thirty-second of the solution, each dose was virtually water, and had been so several days. Patient continued taking quinine solution, believing he was still on morphine mixture. I kept up digitalis and iron, and in exactly four months from date of entrance to hospital he was doing light work in prison blacksmith shops. Patient weighed one hundred and twenty-eight pounds when he arrived at prison, and six months from date of reception weighed one hundred and ninety-five. When I informed him that it had been some weeks since he had taken any morphine, he was greatly astonished, but after a while seemed much pleased, saying that he would never use morphine again as long as he lived. Prisoner was pardoned by the governor shortly afterwards, and went back to his home, where he now pursues his avocation of blacksmith. I have received several letters from him, in which he says he thanks God that he is free from the habit forever.

Edwin H., white, aged twenty-seven, was admitted to the prison hospital on the 16th of June, 1894. Patient had been an opium smoker for two years, and had then shifted to morphine, and had been addicted to the morphine habit over three years. When I first saw him, patient was using about three hundred and eighty grains of morphine daily; patient had been an inveterate cigarette smoker for over twelve years, and so excessive had been his use of them that on the first day of

his admission to the hospital he had two hemorrhages from his lungs, losing nearly half a pint of blood. I stopped hemorrhages by giving elixir of vitriol, one-half ounce, added to four ounces of water in half teaspoonful doses in wine-glass of sweetened water every hour. Patient realized that excessive cigarette smoking had caused the hemorrhages, and never cared for them again. Patient was a man of intelligence, and I commenced to secure his confidence by telling him that I sympathized with him greatly in his trouble, and that I would be pleased to do anything I could for him. Patient said that he had been informed that in penal institutions it was customary for the physician to cut down the supply to morphine habitués in the shortest possible time; said he had been using opium and morphine so long that if he were denied his usual quota his shattered nervous system would not be able to stand the shock, and that he would surely succumb. I concurred with patient and told him that, as he only had to stay in prison twelve months, I would supply him with as much of the drug as he desired. In the interim, to counteract the effect of the two hemorrhages I gave him subcutaneous injections of five drops digitalis and a half drachm of whisky. I let him have his usual quota of morphine for four days, after which I made a solution of three hundred and sixty grains of morphine in quart of water as in case number one. I told patient that, on account of the hemorrhages, it would be necessary for me to make a solution of the morphine so that I could incorporate another drug to increase its power. In order to strengthen him, I put him on four drachms of the quinine solution three times a day. I also gave him ten drops of the digitalis and tincture of iron chloride three times a day. On same day reduction of morphine was made patient complained of pains in legs and arms. I gave him hypodermic injections of half drachm of whisky at intervals of six hours, keeping up the injections for three days, at the expiration of which time I ceased giving the whisky and commenced giving him

five grains of quinine sulphate four times a day. In the meantime had placed him on a light, nutritious diet, occasionally between meals giving him a cup of malted milk. Patient inquired if I had not reduced morphine some. I told him that the medicine I had given him for the hemorrhage had blunted his sense of taste, but that if he did not think it strong enough I would add more morphine. I then went through the operation of putting quinine in a quart bottle of water where he could observe the action. Patient was immediately reassured and commenced to mend rapidly. When he had been on morphine mixture two weeks, I commenced reduction by placing in bottle a tablespoonful of water for every one of the mixture taken out. Reduction was gradual, but patient improved, and at the end of sixty-two days I told him he was taking water made bitter by a little quinine. Patient was surprised, but said he was glad that I had adopted that method of reduction. Patient weighed one hundred and twenty-six pounds when admitted to hospital. He, at this writing, weighs one hundred and eighty-five pounds. He is now, April 1, 1895, hospital steward at the prison hospital, handles morphine almost every day, and is thoroughly cured of the habit. To use his own language, he "becomes thoroughly nauseated when he thinks that he was ever addicted to the habit of using the vile stuff."

The remarkable features in these cases was the enormous reduction from four hundred grains in case number one and three hundred and eighty grains in case number two in twenty-four hours, to fifteen grains each in both cases in the same length of time without any bad effect except the rapid, nervous heart and pains in the limbs, which disappeared like magic under the combination of digitalis and iron, quinine, and suggestion.

Will you not concur with me when I say that suggestion is a great aid, if nothing more, in the treatment of morphinomania?

DAMAGE OF DAILY USE OF ALCOHOL.

By C. H. Hughes, M.D.,
Prof. of Mental and Nervous Diseases, Barnes Medical College, St. Louis, Mo.

If mankind in general knew what advanced pathology teaches the widely observant physician of the effects of daily alcoholic potations on the human organism, the use of alcohol and its principal compounds, natural or artificial, as a habitual daily beverage, would be shunned as a viper is avoided. Daily potations of strong drink persevered in, except in most exceptional moderation, will ultimately undermine the strongest constitutions as insidiously as the wiles of Delilah conquered the mighty Samson. Tri-daily potations of strong drink are stitches in the shroud and nails in the coffin of the drinker, by which the garment of life's span is prematurely finished and the funeral casket that transports us to the end of earth is prematurely ready for us.

Alcohol thus indulged in and not physiologically counteracted by an exceptional organism endowed with unusual power of resistance, makes morbid changes in the brain, its blood vessels, its coverings, and its substance, as well as in the heart and other organs of the body. Wine is a physiological mocker, and whosoever is deceived thereby is not wise. The morbid changes in the chronically alcoholized brain are well set forth in the recent treatise of Dr. W. Bevan Lewis on mental diseases. "The vessels dipping into the cortex, or outer layers of the brain, from the pia mater (or under covering of this organ) are of under size, coarse, and frequently tortuous, and their coats are in advanced stages of atheromatous (earthy deposit) and fatty change." "The nuclei of the adventitial sheath are somewhat num-

erous, are freely proliferating (projecting out) or their protoplasm is in a state of fatty disintegration," or breaking down.

The most prominent feature of chronic alcoholism, however, is the abundant increase of the scavenger cells of the surface of the brain lying immediately beneath its membranous covering.

Beneath the inner covering of the brain (the pia mater, as it is called, or pia), and pressing into the brain surface, pathologists often find a vast quantity of what they have called amyloid bodies. Proliferating nuclei appear along the walls of the blood vessels, giving them a peculiar spinous appearance. The perivascular spaces, or spaces around the blood vessels, which carry the lymph-like brain fluid to cushion the vessels, are often found unduly distended with lymphoid elements.

The motor cells of the fifth layer of the brain cortex, or rind of the brain, undergo a fatty change, become degenerate, break down, and are absorbed, hence the chronic alcoholic paralysis of old drunkards and the temporary and acute paralysis from the great blood pressure of acute intoxication upon these same centers in the brain. The saying, "he is paralyzed," jocularly applied to a man who is very drunk, has more scientific accuracy than was intended by the originator of the expression.

The blood vessels of the brain are the first to feel the effects of alcoholic intemperance. They become enormously and unequally distended, and the brain suffers from blood pressure symptoms. Locomotion, perception, and ideation are at first embarrassed and finally permanently impaired or destroyed. "We are struck," says the author previously quoted, "by the large number of extremely coarse dilated vessels which afford us evidence also of grave structural change."

Neither does the spinal cord escape, for throughout its whole extent we find increased vascularity. The change in

the vessels of the spinal cord is like that which has long been recognized in chronic Bright's disease, says Bevan Lewis.

"Through the medium of the blood vascular system, alcohol, by its ready absorption and permeability, is rapidly conveyed to the most distant parts of the organism, establishing wide-spread constitutional disturbances; while through the peculiar selective capacity of the nervous centers for this poison, it thereupon expends its primary and most potent influence. Although in all cases the nervous centers bear the chief brunt of its attack, it by no means follows that the subjects of chronic alcoholism suffer in the same way. In one, the gastric (stomach); in a second, the hepatic (liver); in a third, the renal (kidneys), and cardiac (heart) symptoms may come to the front; while in others the nervous centers express the special virulence of the agent in their direction. Undoubtedly a neurotic heritage plays a foremost part in thus predisposing to more exclusive determination of the morbid agency upon the higher nervous centers, just as those subjects predisposed to renal degeneration will, on the establishment of alcoholism, display the usual cardio-vascular (heart and blood vessels) changes of chronic Bright's disease."

The general effect of alcoholic excess is depravity of nutrition and impairment of the nutritional fluids and functions; the digestion becomes disordered, the excretory functions become deranged, and the nerves exhausted or destroyed. The higher centers of the brain break down in delirium tremens, insanity, dementia, or paralysis, or lesser degrees of mental impairment — a paresis, or lesser paralysis, of speech or motion, and aphasia, or speech forgetfulness, and memory failure in general sets in, and thus science confirms the truth of all observation that wine is a mocker, and whosoever is deceived thereby is not wise, and to him who tarrieth long thereat or imbibeth oft, its organic consequences are physical ruin and dissolution. This temple of the human soul in which a god might dwell and angels walk about, can by the unwisdom of

the alcoholic habit become transformed into a dwelling place of fiends and furies, can by the diseases it engenders be made the dwelling place of misery and woe, of mind and body, as the testimony of our advancing civilization with the human wrecks in its dreadful wake, distorted, crippled, dethroned, and dead, fearfully prove.

Besides the mental and physical destruction revealed by science in the pathway of alcohol as its immediate effects, she points with pitying finger to woes innumerable in the aftermath of its devastating violence which the hand of municipal and individual charity gathers into the hospitals for the insane, the homes for the feeble minded, the colonies for epileptics, the alms houses and penitentiaries of the land.

She points the transgressor with warning hand to the mentally and nervously maimed of the children and children's children of the drunkard.

Alas that one should put an enemy in his mouth not only to steal away his own brains but to rob an unerring heritage of that normal mentality which is or should be the inherent right of the innocent and unfit posterity for the battle of life. The testimony of science says: Be cautious! beware! "For in the last it biteth like a serpent." It poisons the blood, the heart, the brain, and the nerves. It distorts, depraves, degenerates the organism. It destroys the delicate mechanism of the mind's display and pollutes the fountain source of the soul's manifestation. It burns out the machinery of the mind with fire infernal, and where a spark of divinity might dwell it leaves but the cinders and ashes of a once brightly glowing and glorious mentality.

Its poisoned fangs are like unto those of the stealthy adder in the cradle. Through its baleful influences the unborn come into lives of misery, neurotically and mentally maimed, unfitted for normal life, and fortunate if they fill graves untimely; while hurt and helpless womanhood mourns and dies in the mists and blasts of the world's tardy awakening to the destructive effects of the drink habit.

DELIRIUM TREMENS IN MODERATE CONSUMERS OF ALCOHOL.

By Frank H. Pritchard, M.D., Monroeville, Ohio.

In the July number of *The Medical Times*, Dr. R. Elmergreen of Milwaukee has reported four interesting cases of delirium tremens in moderate consumers of alcohol which are very instructive, and particularly with regard to their pathology. The writer has done us a service in calling our attention to this peculiar variety of delirium, for one may meet with them in practice, and they may be very embarrassing and treat one to unpleasant surprises. He seems to think that he has found a form of delirium tremens that stands apart from the usual one and which has something more or less mysterious about it. I must admit that the general text-books do not give much attention to this peculiar variety, and that it certainly is confusing. Osler, for example, does not offer much light on it.

My view of these cases is that they are usually uræmic and that through the moderate consumption of alcohol, and especially of beer, the kidneys are undergoing parenchymatous degeneration, possibly without any external signs or evidence of these lesions, and with the oncoming of a "congestive attack," as the English call it, or an acute congestion, or better said, an acute nephritis, in an already damaged kidney, the delirium is precipitated, the degenerated organs are unequal to the strain, and going from bad to worse, there is a general "smash-up," and with a rapidly rising temperature which, just before death, in the pre-agonic stage, reaches a grade at the top of the thermometer.

It will be noticed that in his first case there is a history of poor appetite, coated tongue, and morning nausea, with gastric distress three months preceding his death, all symptoms certainly demanding an examination of the urine, and probably due to renal insufficiency and parenchymatous degeneration. His second case offered signs of an oncoming congestive attack from the shock of seeing his comrade mangled.

Moderate consumption of alcohol will sooner or later lead to lesions or post-epileptic states, but where it was noticed before the convulsions which set in. Here, in this group, the urine was dark, reddish brown, a little turbid, cloudy, and sometimes of a slimy consistence. The specific gravity was high, 1020-1035, the quantity greatly diminished, 100, 150 ccms. daily, or even complete anuria, for a day. There were casts of different kinds, renal epithelium, red and white blood corpuscles; these elements were most numerous at the height of the attack or immediately after. After the patient became quiet they disappeared.

The next group was of those with pronounced and well developed delirium without convulsions, who entered in the prodromal stage. There was albuminuria in them all, with renal epithelium and cylindroids, and in one fatal case a decided organic lesion was found post-mortem.

In another group which came under observation with delirium, without convulsions and during the delirious stage, in all there was albuminuria, in varying degrees, from a mere trace to goodly quantities. The state of the urine was less abnormal than in those with convulsive phenomena, which agrees with the view that those cases with convulsions are the most serious.

The series of symptoms which are set forth as characteristic of latent nephritis have a striking similarity with those of the prodromal stage of delirium tremens. In both states there are both gastric and intestinal symptoms, cerebral and

nervous phenomena, and, indeed, even nose bleed is an accessory symptom in the not unusual hemorrhagic symptoms, which may be noted among the prodromes of Hertz's cases: hæmatemesis, epistaxis, bleeding from the gums, and hæmaturia. Dieulafoy calls this state "petite urémie," and even without this hint one is led to look upon a condition which often shows itself with headache, and nearly always with nausea and vomiting or slight gastro-intestinal disturbances, together with renal troubles, as allied to uræmia. Then it is but a step to regard the whole delirium, together with the convulsions, as a sort of uræmia. Such a parallelism is not difficult to demonstrate. Convulsions, that typical uræmic symptom, appear in grave forms of uræmia as well as in severe cases of delirium tremens; the vomiting never continues into the stage where the severe cerebral degenerative changes in the kidneys, several writers to the contrary notwithstanding, and that either directly or indirectly. Professor A. Villard of Marseilles — "Lecons sur l' Alcoolisme," p. 72, 1892 — in speaking of the effect of this poison on the kidneys, says: "In whatever way that it be brought about, whether gradually or by repeated congestions, chronic nephritis is the usual fate of the steady drinker. Anatomically, you will find in general the small, granular, and sclerosed kidney . . . and, indeed, the kidney of alcoholics is looked upon as the type of interstitial nephritis of arterial origin. . . . with secondary malnutrition of the exciting cells and consequent degeneration. . . . In some cases you will discover instead of the small and contracted kidney a kidney but little or not at all reduced in volume, which on section offers brown or raspberry colored areas on a pale background — c' est le rein tacheté ou bigarré. In these kidneys the fundamental lesion is still a sclerosis, with areas of congestion or even of hemorrhage. Do not forget that the fatty degeneration of which I spoke as occurring in the liver may be met within the kidney, concurring with cirrhosis — the small granulo-fatty kidney. At

times the fatty degeneration will be found as existing alone, and particularly in beer drinkers. The kidney is then soft, of a white and lardaceous appearance; on section shining and greasy. The line of demarcation between the two portions is ill-defined. Thus you may meet with cases of moderate drinkers where uræmia suddenly sets in under various circumstances and suddenly puts an end to life, whose other organs seem to bear the fatal poisoning well."

So much for these statements. In 1898, in Nos. 8, 9, and 10 of the Danish medical journal, *Hospitalstidende*, Dr. Paul Hertz published a very interesting and instructive article on the "Pathogenesis of Delirium Tremens," which throws light on Dr. Elmergreen's cases. With admirable, patient, and scientific thoroughness, which is characteristic of the Scandinavian physicians, he investigated for several months the cases of delirium tremens coming into the General Hospital in Copenhagen. He especially examined the urine of these patients before the delirium set in, when possible, as well as during and after. It was investigated immediately after entering, several times a day, microscopically, and as to specific gravity, quantity, etc. He had 124 cases of undoubted delirious tremens, which he divides into groups. The gravest were those where there was a severe and uncomplicated attack, with convulsions — nine cases — all with albuminuria, which was noted in the prodromal stage, in goodly quantities, and which was not a consequence of the convulsive symptoms appearing in delirium tremens. The delirium of uræmia is well known. Toulouse has made it the object of a thorough study —"Les Troubles Méntaux de L'Urémie," *Gazette des Hospitaux*, No. 70, 1894 — and he characterizes it as an acute hallucinatory delirium. Delirium tremens is exactly the same form of psychosis. Indeed, one French writer, Lecorché, asserts that uræmic delirium may be still and quiet or violent, and easily confounded with delirium from other causes, as for example, that of alcoholism. That uræmic delirium more

frequently is joined with convulsive than with comatose forms of uræmia also points to a relation with delirium tremens.

The temperature in delirium tremens has been difficult to understand, but possibly it is more easily comprehended if one remembers that it depends upon similar causes to that in uræmia. Hughes and Carter — "A Clinical and Experimental Study of Uræmia," *American Journal of the Medical Sciences*, Vol. 108, 1894 — claim that the temperature in uræmia is no constant nor pronounced symptom. It may be either above, below, or at the normal. It is more frequently observed above in parenchymatous nephritis. Stengel — "Fever in Nephritis," *American Journal of the Medical Sciences*, Vol. 110, 1895 — mentions that the temperature may rise with coma or delirium or convulsions. Dethlefsen has found rises of temperature after convulsions in forty-two per cent. of his cases.

Finally, Hughes and Carter have said that uræmia may set in without the urine being albuminous and yet the necropsy reveal a well developed renal disease. This must be comparatively rare, though I have noted the albumen in some renal affections to vanish at times, and to be plentiful at others. Therefore, the following conclusion may be drawn: if insufficiency of the renal functions during that state which is called uræmia, is able to produce hallucinatory confusion, therefore it is not illogical to assume that the hallucinatory confusion which is called delirium tremens, and which always has other symptoms in common with uræmia, is dependent upon an "insufficiency of the renal functions" when there are always signs of disturbed kidney function associated with it.

Hertz concludes his lengthy and very instructive article as follows. As a result of my investigations it may be concluded that:

1. A renal disturbance is a constant accompaniment of uncomplicated delirium tremens.

2. That the relation of time between the renal disturbance and the appearance of the delirium shows that the renal disease is primary and the delirium secondary.

3. That the anatomical base of the renal disturbance is an acute nephritis, which, as a rule, probably develops without any preceding chronic nephritis.

4. That the course of the renal disturbance follows so closely, step by step, with the delirium that there is good ground for assuming that there is a genetic connection between the two phenomena.

5. That there are so many similar points in the two states which are notoriously brought about by an insufficiency of the renal functions (uræmia), and delirium tremens, that there is reason to assume that ***the delirium is an acute auto intoxication-psychosis as a consequence of the insufficient kidney function,*** *which is due to the acute nephritis.*

6. That the peculiar form that this psychosis takes on is dependent upon its developing in chronic alcoholics.

Finally, 7. That there is a probability that delirium tremens in pneumonia is dependent not on the pneumo-toxines directly, but the always present renal lesion.

I have examined the urine of quite a number of beer and whisky drinkers, and I have found that even when they were in fair condition yet their kidneys were not normal, for the urine would be thin, with a slight trace of albumen, a few renal epithelia and an occasional cast, if they were a little under the normal. If they would take cold the quantity of albumen would increase, hyaline casts be thrown off, and symptoms of renal inadequacy set in. On leaving off the habit the urine would quickly or slowly return to the normal, according to the amount of renal mischief already done; of course, if decided alterations had already occurred, then much less restoration would follow. In short, I doubt whether the kidneys in cases of delirium tremens were so normal before the attack, and whether the renal insufficiency had developed on

such virgin soil as Hertz would assume. He had no means of examining the urine of these patients weeks before they entered. His evidence is somewhat contradictory, for on page 239 he asserts that in about one-third of the cases he had found pre-existing symptoms of chronic nephritis, in others stethoscopic and physical signs of a hypertrophy of the heart. He assumes that the delirium develops not with a background of a chronic renal disease, but as an actual acute process. I would not attempt to dispute him, but I have gained the impression that alcoholics have kidneys of lesser resistance. Dr. Elmergreen tells me nothing about the urine in his cases. Possibly he might have had more light had he examined the urine carefully.

Dr. Happel of Trenton, Tenn., in a presidential address, says: The moral degenerate is seen in the profession by the increasing numbers of alcoholics and morphine-habitues in the ranks of the profession. Men who are recognized as reputable practitioners of medicine are found totally unfitted to minister to the sick and suffering because their perceptions are blunted by the long-continued use of alcohol, morphine, or cocaine. **These men should be barred by special statutes from continuing to practice any branch of medicine or surgery.**

At the Seventh International Congress Against Alcoholism, which took place in Paris in 1899, it was decided, on motion of the Austrian delegate, to hold the next meeting in Vienna in 1901. A committee has already been formed for the purpose of arranging the business of the congress. The committee is make up of various medical men, with Prof. Max Grubier as their head. The committee is prepared to enter into communication with specialists abroad in order to make the congress as far-reaching as possible, and requests that those wishing to take part notify the fact to Dr. Daum.

Abstracts and Reviews.

ADDICTION TO DRUGS, ESPECIALLY IN REFERENCE TO THE MEDICAL PROFESSION.

By Richard Dewey, M.D., Wauwatosa, Wis.

The recent general discussion of drug habits, especially with reference to the question whether an undue number of the medical profession are victims of this addiction, has aroused an interest which warrants further inquiry and renders discussion desirable, to bring out the facts whereon to base correct opinions.

The first question is, What predisposes to drug addiction? Why do certain persons, plainly knowing the injurious effects, slavishly employ morphine, cocaine, etc., until ruin of health and character is wrought? Lack of intelligence or of strength of purpose, or both, must be present, and it is generally true that victims of such addiction are so defective in equilibrium or limited in intelligence as to be inherently prone to excess.

Inquiring next whether inebriety in drugs differs from other vicious habits essentially or only accidentally, one is led to see that the vast preponderance of those who, for instance, are addicted to the use of alcohol are those who more closely come in contact with it, as persons in and near saloons, bars, liquor shops, breweries, distilleries, wine cellars; and in like manner, those who resort to drugs are those who

most easily reach them and have them ever at hand or before their eyes — physicians, druggists, nurses, and members of their families — although a certain *penchant* for certain intoxicants exists in some cases irrespective of accessibility. The resort to drink or drugs is, however, largely a matter of accident, and the essential things are the instability of the individual and ready access to the given intoxicant. The same ruin may be wrought by other poisonous agents. There are nitrogenous "sprees" and "jags" of carbohydrates which are as surely vicious to health. The victim of drink or drugs, however, becomes a spectacle to gods and men, while the destruction wrought by other sensual gratifications is often thought to be due to a mysterious providence. The drunkard, like the poet, is "born, not made," but who is most prone to excess and suffers most under the tyranny of an intemperate and ill-balanced organization *may* so place himself as to escape the disaster lying in wait for him.

There are all possible degrees of continence, temptation, and opportunity, and there is no means of drawing hard and fast lines, but in a general way all victims of these excesses are unstable and neurotic.

Among those prone to excess, examples of great genius, rare gifts, and splendid talents are found, like Alexander the Great, Coleridge, De Quincey, Burns, Daniel Webster; but that the incontinence was no necessary part of genius itself is shown by the fact that still greater geniuses, like Dante, Shakespeare, Milton, Goethe, present none of these glaring defects; and on the other hand, the average of those who are inebriates is an average of low intelligence and morality.

Careful examination of these cases to determine if physical degeneracy was an associated factor has failed to show that it was; indeed, it has been noticeable in the essayist's cases that fine specimens of physical development abound, and yet the mental and moral stigmata, irritable mind, and nervous

system were almost invariably present. It is shown that the habit of resorting to drugs grows insidiously, and soon a state exists which is intensely sad to contemplate. The victim enmeshed in the snare will either emancipate himself by a series of toils and struggles like the combined tortures and labors of Tantalus and Sisyphus, or, like Promethus bound, his vitals are, for all time to come, to be preyed upon by the ravening vultures of remorse, hopeless resistance, alternate prayers and curses. The puzzled will wrestles with the chains and bars of servitude. The contradictions are so great as to be not inaptly described by the couplet:

> **You can and you can't; you will and you won't;**
> **You'll be damned if you do; you'll be damned if you don't!**

Many, however, have no desire to reform from a moral point of view. The pains and penalties they suffer make them wish for relief — provided it can be accomplished without too much inconvenience. Others desire so much relief as will enable them to go on with a career of self-indulgence, and the physician who attempts to aid, sometimes has his choice between assisting at a farce or bidding his patient find some one else to participate in a course of deceit and chicanery.

In studying these addictions one is surprised to find how often several of them are combined. Alcoholic intemperance is exceedingly common with all drug addictions, and taking those patients given to morphine, one will find tobacco (especially cigarette smoking), chloral, cocaine, trional, all forms of alcohol, all the coal-tar preparations, tea and coffee, excessively indulged in, together with the greatest excess and irregularity in diet and exercise—there is no measure or moderation in such persons, who are constitutionally extremists. In the case of the cocainist it frequently becomes impossible to continue the cocaine, and the patient then "sobers off" for a time on morphine — to be able to go on again with the more attractive mistress of his affections. The quantities of these intoxicants that will be tolerated are also surprising. A young

man who consulted me had used thirty grains of morphine and four of cocaine daily for more than a month. Another, himself a physician who had been cured twice and remained well seven years the first time, but only a few months the second, in his third attack took in 128 consecutive days 6452 ounces of whisky, 725 grains of cocaine, 426 grains of codeine, and 292 grains of morphine.

Erlenmeyer remarks that those who treat disease furnish the larger number of habitués. Physicians, druggists, nurses, or the wives of such, are in the majority. This observation was made at least twelve years ago by Erlenmeyer, and as this question of the extent to which physicians use morphine is one of great interest at the present time, I shall seek in this paper to present some few details bearing upon this point.

In reference to the extent to which physicians are addicted to these habits, quotations are given from Crothers as follows: "In a general history of 3244 physicians residing in the eastern, middle, and some of the cities of the western states, twenty-one per cent. were found using spirits or opium to excess. Six per cent. of this number used morphine or opium prominently. Ten per cent. were using opium or other drugs secretly outside of this number. At least twenty per cent., including this number, used spirits in so-called moderation.

"In another study of 170 physicians, seven per cent. used opium or morphine, and six per cent. were secret drug-takers.

"From the personal observation of a number of physicians who have a large acquaintance with medical men, from eight to ten per cent. are either secret or open drug or morphine habitués.

"These figures appear to be approximately correct, and show that at least from six to ten per cent. of all medical men are opium inebriates. This is undoubtedly a conservative statement, considering the fact that drug-takers, and physicians in particular, are secretive and conceal their use of drugs, particularly where it implies weakness and reflects on their social standing."

Dr. Crothers has been criticized for giving occasion to unwarranted inferences, but the general consensus of opinion is whatever the details may be, attention has been drawn to a real evil.

Dr. Orpheus Everts informed me that about twenty per cent. of opium habitués within his knowledge were medical practitioners. He considers, however, that owing to the very large preponderance of the laity who seek Keeley cures, and employ various proprietary and secret means in the hands of the irregulars, the proportion of physicians in regular medical institutions is abnormally increased, and gives an incorrect idea of the relative number of physicians — a consideration undoubtedly entitled to much weight. The general medical officer of another large sanitarium found of all cases of drug addiction coming under his notice in the last five years, thirty-one per cent. were physicians. A friend, knowing the status in one of the larger hospitals in Greater New York, writes: "Since my connection with the hospital (not over fifteen years) I know twenty-one doctors on the staff (of internes) who were either morphine or cocaine fiends, or both. There may be and probably are many more that I know nothing about. . . . If you asked how many drank to excess my answer would be: For several years there have been only one or two of the whole staff who did not."

The statistics as to morphine habitués treated in Prussian sanitariums show that of sixty-two male patients, almost one-third were physicians, and of eighteen female patients, three were wives of physicians.

My experience is that in twenty-eight cases of morphine and cocaine addiction under my care in four and a half years, thirteen were physicians, a percentage of forty-six. Taking physicians and the sporting fraternity together, the percentage would have been seventy.

The sporting class and demi-monde are specially prone to drug as well as alcoholic excesses. I would emphasize, how-

ever, the fact that a great difference exists as to the reasons for these excesses in one case and the other. The physician is wearing himself out in loyal and unselfish service; the other class in vicious and licentious courses. He is watching at the sick bed, while they are reveling; he takes something to brace himself for a new effort for humanity, while they are engaged in plundering and pandering.

The conclusion arrived at is that the percentage may be overestimated or underestimated, and is likely never to be accurately determined. There is, nevertheless, far more inebriety of this kind than appears on the surface. It is also likely to be overestimated in the public mind, and an unjust suspicion to attach to the profession. As a professional body we should not only be virtuous, but *above suspicion*, and if necessary should promptly repudiate drug habits and those who practice them.

I have not sought to say anything here of the interesting subjects of diagnosis and symptoms of drug habits, of prognosis or of therapeutic means — all of which merit new and thorough study, and concerning which I hope to give my experience at another time.

I will close with a word concerning the most important subject of all — prophylaxis. It should be an inflexible rule with every physician neither to prescribe nor use the drugs that induce vicious habits except when absolutely indispensable, and when absolutely controlled by himself alone; and, furthermore, never to employ these powerful agents of good or evil *in his own person* except when prescribed for him on each occasion by a brother physician in whose skill and integrity he may place absolute confidence. — *Medical Age.*

THE LONDON COUNTY COUNCIL'S INEBRIATE REFORMATORY.

The *British Medical Journal* has the following editorial which is of interest to our readers:

This, we hope, marks the dawn of a new era of increased energy in combating drunkenness on the lines indicated in the report of the select committee of 1894, and in pursuance of the statutory powers conferred on county councils by the Act of 1898. Despite abundant criticism from magistrates and others, we are disposed to think that the London County Council has acted wisely and prudently in dealing with this matter. It has, we understand, utilized so far as practical existing agencies for the treatment of inebriates within the meaning of the Act. It entered into contracts with two out of the three certified reformatories in England, namely, Lady Henry Somerset's Home at Duxhurst, and the Roman Catholic Reformatory at Ashford. The council contributes one shilling a day per head for the maintenance of London cases sent to these institutions, and this carries with it the half-guinea grant per head per week authorized by the treasury from April, 1899, for three years. Some nineteen female cases are now under treatment at Duxhurst, and some forty at Ashford, for whom the London County Council contributes maintenance grants, and we understand that the contracts with these homes, which were entered into for one year from July, 1899, have recently been renewed. Time and experience alone can show the scope and value of the social betterment contemplated by recent legislation. The object aimed at is nothing less than the rehabilitation of the human will, and the period mentioned in the Act of 1898, namely, "a term not exceeding three years," even at its maximum, is probably not too long for the achievement of the end in view. In regard to the number of persons for whom it may be desirable in the interests alike of society at large and the ratepayer in particular to provide and maintain these reformatories, it is not possible to speak with pre-

cision. Section 3 of the Act under which the new reformatory at Farmfield has been established provides that any person who commits any of certain scheduled offences in which drunkenness is the main ingredient, and who within twelve months previously has been convicted summarily at least three times of any such offences, and who is an habitual drunkard, shall be liable upon conviction, upon indictment, or if he consents to be dealt with summarily on summary conviction, to be detained for a term not exceeding three years in any certified inebriate reformatory, the managers of which are willing to receive him.

It is manifestly intended that the new system is to provide a welcome alternative to the futile and discredited system of attempting to cure drunkenness by short terms of imprisonment. However sanguine or skeptical one may feel inclined to be as to the prospects of the reformatory plan, competent opinion is practically unanimous as to the dismal failure of that system which has hitherto been almost exclusively resorted to. It is stated on the authority of those who have had most experience in regard to voluntary retreats for inebriates, that some 50 per cent. of the cases treated are reclaimed to habitual sobriety. Much, however, necessarily depends on the age, disposition, and environment of the individual, to say nothing of the hereditary factor. Managers of reformatories will not only be justified but will be well advised in exercising the greatest care in selecting suitable cases on which to try the influences of the new system. The enhanced amenities of a well-contrived reformatory over the prison cell must secure not merely the advantage to society of the segregation of the drunkard but must reform the individual; the object of the reformatory must ever be not penal, but remedial. We observe that the Act of 1898 enables a secretary of state to establish a "State" reformatory for criminals who, under the influence of drink, have committed offences punishable with penal servitude. We are not aware of any action which

has yet been taken under this power. It may be well that the imperial government is not unwilling to watch the experiments which county councils are invited, and indeed, incited, to take under the same statute. In this as in other directions the intermediate agency of county councils is invoked where an initiative might have been expected from the fountain head. The reformatory at Farmfield is intended for females, although, we understand, the question of providing a male reformatory on the same estate is engaging active attention of the committee which has the matter in hand. There are more than 300 acres of land attached to the estate, and we gather from the committee's reports that this was purposely acquired with a view to considerable expansion as their experiment develops, and with especial regard to the great advantage to men and women alike of active out-door work in overcoming the craving for alcohol. The new reformatory is pleasantly situated midway between London and Brighton, about two miles from Horley Station, in the midst of a beautiful country. Two mansions on the same estate have been modified to suit the purpose for which they are intended, and their appearance belies the usual barrack-like structure which the very name "reformatory" is apt to call up in the mind. A large and well-stocked kitchen garden is attached to Farmfield House, and at the home farm, some three hundred yards off, is a dairy farm with a well-appointed cow-house, dairy, and bake-house. A fruit farm is shortly to be laid out, and the electric light installation, a costly item, is nearing completion. Mrs. Matthias, formerly of Bath, is the lady superintendent, and is assisted by a staff of five sisters. The accommodation already available is for thirty inmates, but we anticipate the work will develop and a rapid expansion may very soon be necessitated. We know there are those of the temperance party who regard reformatory work of this kind with suspicion — if not with dislike — as a tinkering with the drink evil at the wrong end. The restriction or the extinction of public

houses is with such the only panacea. While, however, the attainment of that goal does not appear as yet to be within measurable distance — and its advent is not accelerated by recent dissensions within the temperance party itself — we who have learned the interdependence of mental and physical disease with habits of drunkenness, who are convinced by reports innumerable from medical officers of asylums and jails, to say nothing of the domestic tragedies to which every practitioner can bear witness, are profoundly convinced of the value to the body politic if this new departure in municipal philanthropy, which is in our opinion alike demanded by a sense of public duty, and justified by scientific knowledge.

THE INFLUENCE OF ALCOHOL UPON SUSCEPTIBILITY TO INFECTION.

It is not long ago that alcohol enjoyed a wide range of therapeutic usefulness. It was given to reduce fever, and it was taken to produce warmth; it was prescribed for sleeplessness as well as for the purpose of arousing the flagging mental activities; it was supposed to stimulate the appetite and to furnish food, and it was used accordingly; and in the treatment of infections and certain intoxications, acute as well as chronic, alcohol has long played a very prominent part. In not a few instances the treatment of infections with alcohol in its various forms has been carried to such an extent that "heroic" is the most popular term to describe the doses given.

But the rôle of alcohol as a panacea is being rapidly curtailed. The light of exact investigation has shown that the therapeutic value of alcohol rests on an insecure basis, and it is constantly being made clearer that after all alcohol is a sort of poison to be handled with the same care and circumspection as other agents capable of producing noxious and deadly effect upon the organism. In reality, practically noth-

ing is known concerning the influence of alcohol on the susceptibility and the course of infections in man. Clinical observation cannot solve such questions properly. The basis for final judgment must be found in experiments, but so far little has been done in this line. It has been shown by Abbott and others that alcoholic animals are more susceptible to infections with various organisms than normal animals. And Laitinen, after having studied the influence of alcohol upon infections with anthrax bacilli, tubercle bacilli, and diphtheria toxine in dogs, rabbits, guinea-pigs, fowls, and pigeons, reaches the same general results, and this with certainty and directness.

Under all circumstances alcohol causes a marked increase in susceptibility, no matter whether given before or after infection, no matter whether the doses were few and massive, or numerous and small, and no matter whether the infection was acute — anthrax, or chronic — tuberculosis, or more the nature of an intoxication — diphtheria. The alcoholic animals either die while the control remains alive, or in case both die, death is earlier in the alcoholic. Without going into details in connection with the experiments — and there is room for further work here — it may be said at this time that the facts brought out by the researches of Abbott, Laitinen, and others do not furnish the slightest support for the use of alcohol in the treatment of infectious diseases in man.

EFFECTS OF ALCOHOL.

The well-known Viennese clinician, Prof. Max Kassowitz, asserts that the dogma concerning the nourishing and strengthening character of alcohol is one of the fatal errors of science. He holds the view that the majority of physicians take up an inconsistent position with regard to the use of alcohol, for the reason that while they are well aware of its

dangerous and poisonous qualities, they nevertheless contribute to making permanent the false ideas concerning the value and effects of alcohol which are so generally disseminated. Kassowitz explains these inconsistencies on the ground that the teaching which considers alcohol a food, because it is burned in the organism, has held its ground in spite of many disregarded newer investigations which have shown its indefensibility. He is, therefore, of the opinion that the assumption ascribing food properties to alcohol based on simple theoretical consideration is a grave scientific error, the removal of which is the most important preliminary condition to an effectual battle against alcoholism.

Dr. Hermann Blocher of Basle, Switzerland, comments upon Professor Kassowitz's utterances, and discusses the matter from the standpoint of physiological experiment. He refers to the investigations of Miura, which indicate that alcohol belongs to the same group of substances as glycerine, lactic acid, butyric acid, and so forth, which are, indeed, burned in the animal body, but which, nevertheless, are not fit, even to the smallest extent, to take the place of necessary food in the preservation of the body. Miura found that the addition of alcohol to the food before its being taken not only causes no diminution of the nitrogen output, but does not prevent the loss of body material.— *Medical Record.*

HEADACHE PREPARATIONS.

The danger from the so-called "Headache Powders" is an important question. The use of such powders is surely on the increase. It has been recommended that their composition be required on each package with the idea of attempting to minimize the evil results by thus warning the patients of the dangerous ingredients. This, however, would probably have

very little effect for the reason that the sufferer thinks little of the danger at the time — only looking for relief. Legislation is also suggested, but even this cannot put reason into the minds of those who are utterly oblivious to their own welfare.

Mr. Geo. A. Wilson, Ph.G., of the Massachusetts College of Pharmacy, obtained thirty-six different preparations, and submitted them to a qualitative analysis. Twenty-nine of the samples were obtained through the wholesale houses, and are those that are largely advertised in Boston. The remaining seven were purchased from different retail stores of good standing, and were sold on inquiry for "something for headache."

In the analysis attention was paid to the active ingredients principally, and little or no time was spent upon diluents, coloring matter, aromatics, etc.

The following is the list of articles and the number of samples in which each was found:

Acetanilid,	in 30	samples.
Sodium Bicarbonate,	" 19	"
Caffeine,	" 14	"
Phenacetine,	" 5	"
Tartaric Acid,	" 4	"
Potassium Bromide,	" 3	"
Camphor,	" 3	"
Camphor Monobromate,	" 2	"
Sodium Salicylate,	" 2	"
Quinine Sulphate,	" 1	"
Potassium Bicarbonate,	" 1	"
Antipyrine,	" 1	"
Sulfonal,	" 1	"
Ammonium Carbonate,	" 1	"
Ammonium Bromide,	" 1	"
Salicylic Acid,	" 1	"
Potassium and Sodium Tartrate,	" 1	"

In addition to above, some contained sugar, milk sugar, celery, charcoal, calcium carbonate, and sanguinaria, while two evidently contained belladonna and gelsemium. — *Dr. Squibb.*

ACETIC ACID AS A MENSTRUUM IN THE PLACE OF ALCOHOL.

Dr. Squibb of Brooklyn, New York, in a paper read before the N. Y. State Medical Association, makes the following reference to this subject:

The advantages of acetic acid as a menstruum over alcohol alluded to here last year have not only been thoroughly verified but the statements then made have been still more forcibly impressed upon those who have been working in this line. The following very broad statements or axioms may now be confidently laid down:

All the alkaloidal drugs are readily and thoroughly exhausted by this agent. From a series of experiments, now somewhat extended, acetic acid does *not* convert the alkaloids present into acetates, but acts simply *as a solvent.*

As far as experiments now show, in ninety per cent. of those drugs which have been successfully exhausted, it is a better solvent than alcohol — producing an extraction more thoroughly representing the drug than was ever accomplished with the alcohol menstruum.

For the purpose of prescription writing, it is important to realize that all water soluble salts are soluble in acetic acid, and thus combinations of the acetic fluid extracts with the bromides, iodides, sulphates, and chlorides can be accomplished, and without danger of decomposition.

The older preparations which are favored by many (especially the older practitioners), such as the aceta, decoctions and infusions, can be safely prepared from the acetic fluid extracts.

After the experimental stage has been completed and sufficient time be allowed to offer a finished preparation by settling, the cost of the acetic fluid extracts will be found to be very much less than the officinal alcoholic preparations.

As another illustration of the advantage to be obtained by the substitution of acetic acid for some of the mineral acids in

the already officinal preparations, it may be interesting to mention that an aromatic acetic acid has already been sufficiently tried to establish its superiority over the present officinal aromatic sulphuric acid. This aromatic acetic acid is prepared simply by substituting 99.5 per cent. acetic acid for the sulphuric acid in the formula used in preparing the officinal preparation. A vegetable acid is undoubtedly less irritating and more beneficial to the alimentary tract than a mineral acid, and therefore it is claimed that this combination will prove useful in many cases.

A REPLY TO "ALCOHOL AS A GENERAL STIMULANT AND HEART TONIC."

(A paper read by Dr. T. J. Hillis, N. Y. State Medical Association, New York, Oct. 24, 1899.)

By ALBERT S. ASHMEAD, M.D., NEW YORK CITY.

In Santiago, Chili, during the first and the last four months of each year are observed the greatest number of entries of mental alienics into the hospitals. Dr. M. S. Beca, the superintendent in charge of the insane asylum there, says that the time of the year during which there are the most admissions from alcoholic causes corresponds to the epochs of excess in drink, and to the social class to which this custom is the more frequent. That period is the one which corresponds to the popular feasts, which the Chilians are accustomed to celebrate by abundant and prolonged libations. The national feasts of September and of the New Year are the pretexts for these rejoicings, whose consequences are found afterwards in the Hospital for Alienics. During these months the establishment receives a greater number of alcoholic insane than during the rest of the year. This observation has repeated itself many times. During these five months of 1891 there entered one hundred and twenty-three alcoholics more than during the rest of the

year, when there were counted only thirty-one, a total of one-hundred and fifty-four. The forms which affect these cases of alienation are very varied: Alcoholic delirium, fifty-four; maniacal excitation, twenty-three; acute mania, thirteen; melancholia, twenty-five; delirium of persecution, nine; alcoholic dementia, six; pseudo-paralyses, five, etc. In these one hundred and fifty-four cases were counted nineteen women. From the point of view of age, the greater number of insane were between twenty and thirty years. After that age until fifty years, the cases were equally numerous.

This is always observed: this period of thirty years comprised between the twenty-fifth and fiftieth year, says Dr. Beca, is that during which are presented the greater number of alienics caused by alcohol, that is to say, the mean period of life when the excesses of every class, the tangible manifestations of passions and vices, are more common, and are produced more easily and more imperiously. This is the period during which, for similar reasons, hereditary influences are found to be felt more effectually and occasion some special tendencies, some physical and psychical diseases, and among them, alcoholism.

The proof of the action which these divers causes could have exercised on the production of alcoholic alienation on these one hundred and fifty-four patients of the year 1891 is established by the following evidence: Nine men and one woman had alcoholic parentage, and six men were of consanguineous marriage, while eighty-nine men and seventeen women had no such hereditary antecedents.

THE DECREASE OF ALCOHOL.

The *Medical Times* gives the following facts which appeared in the Philadelphia *Press:*

In 1884 the highest point of annual consumption reached during a period of prosperity was 1.48 gallons per person.

After the panic a decrease followed to 1.21 gallons per capita in 1887. Consumption increased again to 1.51 in 1892. It fell under President Cleveland's administration, and reached the lowest level on record of a yearly consumption of spirits in 1896 of only 1 gallon per capita. From this point it increased, and in 1899 it was 1.15 gallons per person, or barely three-fourths the yearly capita consumption in 1892.

This decrease in the consumption of alcoholic liquors has been in progress for two generations, and the average annual amount of spirits consumed per capita in this country is now only two-fifths of what it was sixty years ago, according to the census of 1840, when the per capita consumption was 2.52 gallons. In 1860 it was still higher, or 2.86, so that from 1860 to 1897 the per capita consumption had fallen almost one-third.

It is remarkable that the consumption of wine varies in much the same way. It rose a little over one-half a gallon per head in 1880, .56 of a gallon; decreased steadily through the depression of 1885; rose again in 1888 to .61 of a gallon, and then continued to decrease, reaching its lowest point in 1896, when it was only .26 of a gallon per person. From this point it has increased, and in 1899 was .35 of a gallon. The consumption of wine does not follow so closely the general condition of prosperity as the consumption of spirits, but it bears a close relation to the general state of trade.

Malt liquors, on the other hand, have increased steadily in annual consumption with greater regularity and through all years. In 1875, a quarter of a century ago, the yearly average per capita consumption in this country was 6.71 gallons. An increase has gone on with great steadiness in good years and bad alike, until in 1892-93, the consumption reached the highest point which it has ever had — 16.08 gallons. Then for the first time since malt liquors were introduced in this country by the German emigration in 1848 there began a slight decrease in the per capita consumption of beer. It has fallen

slightly year by year, rising in 1898 as compared with 1897, but falling again in 1899, when it was 14.94 gallons per capita. The additional tax levied for war purposes of $1.00 per barrel may have had its effect of decreasing the consumption by slightly increasing the price, but as the price of beer per glass has in general remained the same it is difficult to see how this can have affected retail consumption.

IS ALCOHOL A FOOD OR A POISON?

Kassowitz maintains that it is not so much a question as to whether alcohol *per se* is toxic or nutritive, for it can hardly be denied that it is an active poison capable of causing the death of any animal or vegetable protoplasm with which it comes in contact, but rather as to whether in spite of these injurious properties it can still be of value to the organism and serve to sustain it. A food-stuff to be classed as such must not only be capable of supplying the organism with energy to be dissipated as heat and in the performance of work, but must also under proper conditions enter into the bodily structure and replace tissue that has become worn out. Recent investigation has shown clearly enough that alcohol is easily and abundantly oxidizable in the human body, but the mere proof that a substance is consumed in this way does not entitle it to rank as a food, and still less can this supposition be entertained if in addition it at the same time causes decomposition and destruction of living protoplasm. That alcohol does this is not to be doubted in view of the present knowledge of metabolic processes, and this granted, it is evident that a substance capable of destroying body tissue cannot also at the same time serve to build it up and replace damaged parts. Therefore the position that alcohol may play the double role of food and poison is untenable, and the sooner it is dropped from the list of drugs for internal administration the better it will be for physician and patient. — *Medical Record.*

SIXTEENTH ANNUAL REPORT OF THE DALRYMPLE HOME AT RICKMANSWORTH, ENGLAND.

The following is an abstract of the year's work by Dr. Hogg, the superintendent.

During the year forty-five patients have been admitted and forty-three discharged, and there remain twenty in the Home.

These numbers are larger than any that have hitherto been recorded, but the record is not a matter entirely for congratulation, as it points to the fact that many short period (three months) patients have entered the Home, and that there are still large numbers who prefer to enter a retreat as private patients rather than to place themselves under the Act, amended though it be; for, out of the forty-three discharges, the duration of residence was three months in sixteen cases, while three patients stayed nine months, and only five remained in the Home for a year. The chief reason for this result, excluding the inebriate's inherent objection to being a party to his own compulsory retention, is the fear of publicity on the part of the inebriate's friends, to many of whom the idea of going before a magistrate, and a magistrate to whom perhaps their family is known, is repellant; and although the amending clauses of the 1898 Act simplified the procedure of entry into a retreat, this method of entry has not yet become popular.

The total number of patients admitted since the opening of the Home is 581, and the discharges now amount to 561.

During the year three patients have been discharged before the expiration of their time on the ground of misconduct, and on every occasion after such a discharge I have noted a marked improvement in the tone of the Home.

Of the remaining forty who have been discharged during the year, although so many stayed here for far too short a period to be of permanent benefit to them, I have heard excellent reports of fourteen, another fourteen are drinking either regularly or periodically in moderation, the results in ten cases

are unsatisfactory, and one, who after a short stay immediately reverted to his former habits, is dead.

It is a pleasure to note the continued prosperity of this famous Home for inebriates. Dr. Hogg is to be congratulated on the success of his work.

PRACTICAL URANALYSIS AND URINARY DIAGNOSIS. A Manual for the Use of Physicians, Surgeons, and Students. By Charles W. Purdy, LL.D., M.D., Queen's University, Fellow of the Royal College of Physicians and Surgeons, Kingston, Canada; Professor of Clinical Medicine at the Chicago Post-Graduate Medical School. Author of "Bright's Disease and Allied Affections of the Kidneys"; also of "Diabetes: Its Causes, Symptoms, and Treatment." Fifth Revised and Enlarged Edition. With Numerous Illustrations, Including Photo-engravings, Colored Plates, and Tables for estimating Total Solids from Specific Gravity, Chlorides, Phosphates, Sulphates, Albumin, Reaction of Proteids, Sugar, etc., etc., in Urine. Six by Nine Inches. Pages xvi-406. Extra Cloth, $3.00, net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia.

A very useful addition to this edition is a chapter on The Microscope, which comprises all that will be found necessary for a working knowledge of the instruments, together with numerous directions for the best possible employment of its different parts. These minor matters so requisite for a successful investigation are given a place. A number of "wrinkles" which the author has found to be of advantage are described. Such subjects as the manner of using the mirrors with the different objectives, the preparation of the sediment for examination and mounting, the method of using the condenser, the handling of cover glasses, and the making of a cell are mentioned. The chapter on the differentiation of epithelia is excellent. The anatomical and chemical sediments are

fittingly illustrated, in black and colors. Various improved apparatus for centrifugal analysis and quantitative estimation of sugar receive attention. It is a book to be commended.

STUDIES IN THE PSYCHOLOGY OF SEX. The Evolution of Modesty.—The Phenomena of Sexual Periodicity.—Auto-Erotism. By Havelock Ellis. Six and three-eighths by eight and seven-eighths inches. Pages xii--275. Extra Cloth, $2.00, net. Sold only to Physicians and Lawyers. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia.

This work of three hundred pages comes from a very distinguished and careful author who has most successfully grouped and studied a great variety of facts from a scientific point of view. It occupies a new field in scientific medicine, and has great value in explaining phenomena of sex that are practically unknown. The grouping of authorities and facts bearing on the different topics is exceedingly interesting. This book will, undoubtedly, draw attention to a much neglected field, and enable students to have some starting point from which to base more accurate studies. The author has contributed a most important discussion, the interest of which will grow with the coming years. Many of the facts have a vital bearing on poison cases, and all of our readers would be immensely benefited by a perusal of this book. The type and index and charts associated are all well executed. The author and publisher are to be congratulated on bringing out such a valuable work.

SPRINGTOWN ON THE PIKE. By John Uri Lloyd, is announced by Dodd, Mead & Co. Price, $1.50.

It is a study of Northern Kentucky during the war, and brings to view conditions that involved the people of that border state during the boyhood of the author. Of it, the talented writer, Judge J. Soule Smith of Lexington, Ky.,

writes: "No such vivid landscape painting of Kentucky seasons and Kentucky scenery is to be found in any other book." The *New York World* states that it "reminds one of the figure in American literature cut by physicians, from Dr. O. W. Holmes to Dr. Weir Mitchell and Dr. W. A. Hammond," and in this same line of thought the *American Journal of Pharmacy* states that "Our faith in American literature is strengthened by the entrance into it of professional men like Weir Mitchell and John Uri Lloyd."

MEDICINE AS A BUSINESS PROPOSITION. By G. Frank Lydston, M.D., of Chicago. A lecture delivered at the public meeting of the St. Joseph County Medical Society, South Bend, Ind., Jan. 30, 1900. Published by The Riverton Press of Chicago. Price, 25 cents.

This little work will be very helpful to every reader in pointing out some common and very grave mistakes being made by physicians in every section. The author is fearless and vivid in his descriptions of medical abuses which are fostered and encouraged by the carelessness and stupidity of doctors. Such efforts should be welcomed and the author warmly praised for attempting to correct abuses which are fast becoming a menace to all professional growth and development.

In the October number of *The Homiletic Review* (Funk & Wagnalls Co.), are several articles which should be read together as giving in their joint thought a clearer conception of evolution. Prof. Jesse B. Thomas, D.D., has written of "The Stampede Into Evolution," which he explains is more largely due to certain sentences in Mr. Darwin's "Origin of Species" than to any arguments presented therein. Robert Walter, M.D., shows in his "Mistakes of Modern Science" that Mr. Spencer has failed to scientifically explain his theory of transformism. The editorial entitled "The Supernatural Again Bowed Out" exposes the shallowness of "Guesses at the Riddles of Existence" by Prof. Goldwin Smith.

The *Literary Digest* is a weekly for the busy man who would like to keep in view the changes and movements of political events and history. A very impartial grouping of the opinions of the literature of the day is a striking characteristic of this valuable journal.

The *Scientific American* still comes freighted with the new facts constantly appearing along the frontiers of science. It is really one of the most valuable weeklies that appear in our exchange list.

DRUNKENNESS IN LONDON.

A parliamentary return on the working of the Inebriates Act, under which the magistrates are able to commit habitual drunkards to inebriate reformatories, discloses the startling fact that of ninety-two such convictions ninety were women. Such convictions would be more numerous but for the fact that state reformatories do not exist, but it is significant that of the six institutions existing five are for females. Within the London metropolitan police district there are 11,000 public houses. The temperance reformers say that this oversupply is greatly responsible for the fact that there were 46,899 arrests for drunkenness in London in 1897, but whatever may be the moral effect one result of the great number of licensed liquor shops is certain, viz., the hindrance of street improvements in London, for the value of the licenses in addition to the cost of acquiring property must be paid by the rate-payers. An example of the seriousness of this cost is seen in the case of an avenue now being made connecting the Strand with Holborn. The purchase price of liquor licenses along a route of less than half a mile in length was over £100,000. This has been the cause of the abandonment of many desirable improvements in London.

Editorial.

PREVENTION OF INSANITY BY TREATING INEBRIETY.

All observation shows that inebriety is closely related to insanity. While this is doubted by some persons, there is no question that inebriety induces many distinct forms of insanity. For a long time the influence of inebriety in the causation of insanity has been discussed with varying conclusions, and recently some leading authorities have pointed out many startling facts. Dr. Clouston of Edinburgh, in his last report, says that at least twenty-five per cent. of all insanity is traceable to alcoholic excess.

A leading American superintendent of asylums thinks that not over 10 per cent. of all insanity is due to inebriety.

Other authorities in this country think alcohol a comparatively small factor, or one of the most influential, in the production of insanity.

In Europe the magnitude of this cause is becoming more and more prominent.

Dr. R. Percy Smith, president of the psychological section of the British Medical Association and lecturer on Psychological Medicine at Charing Cross Hospital, in a late address, remarked as follows:

"Next to heredity alcohol figures most largely in the causes of insanity given in the commissioners' tables, accounting for twenty-two per cent. of the male, and 9.1 per cent. of the female cases. This refers to the effect of alcohol on the individual alone, and takes no note of alcoholic inheritance as

leading to the production of insanity, idiocy, alcoholism, epilepsy, or other neuroses in the offspring, though it is well known to act in this way.

"This large percentage of what may well be looked upon as a preventable cause of insanity ought to give the legislature profound heart searching as to whether it is doing its duty to the community in checking the ravages of this destructive poison. I shall not be contradicted when I say that the percentages above quoted do not represent anything like the real amount of damage which is done to the nervous systems of the community by alcoholic excess.

"In addition to the actual numbers who are sufficiently poisoned by alcohol to be certified as insane, there are large numbers of individuals who are from time to time dangerously unsound, it may be for a few hours or a few days, who are the terror of their relatives, who form a large proportion of the cases at police courts, and ruin themselves in health and fortune. And those who have had charge of the insane will agree with me that the cases of mental disorder due to alcohol are among the most difficult to manage, the most hostile and litigious, and after recovery very often the most ungrateful of any patients with whom we have to do. No doubt in many cases the alcoholic is a person who starts in life with an unstable nervous system; he has either alcoholic or insane or neurotic inheritance, and to a certain extent he is defective *ab initio* in self-control, and goes without much resistance into the paths of chronic alcoholism, but at present the legislature has given him no assistance. The facilities for drinking are enormous, and the revenue of the country largely depends upon the quantity of alcohol consumed."

Dr. Smith's statement that heredity, alcohol, and syphilis were the most active causes of insanity, is sustained by an increasing number of authorities. While heredity is a more complex problem, alcohol and syphilis are clearly preventable causes.

Inebriety when stripped of all theories and examined from the physical side is seen to be the result of causes whose origin, growth, and development can be controlled and checked. The medical recognition of inebriety and its treatment reveals these causes and points out the possibility of preventing them with great certainty. The startling fact that insanity is increasing gives new interest to this subject, and the fact that inebriety next to heredity is the most active cause opens a wider field for practical work. The conviction is strengthened every year that the recognition of inebriety as a preventable disease, and the use of legal means and measures will diminish a large part of the burdens of insanity, inebriety, crime, and its associated evils. The possibilities in this direction are increasing, and the successful treatment of individual cases under adverse conditions furnishes the strongest proof that inebriety as an active cause of insanity can be broken up and permanently driven out in the near future.

DANGER FROM THE USE OF STRYCHNINE IN INEBRIETY.

When strychnine is given in continuous large doses to inebriates, two very marked conditions appear — one is that of general depression, with muscular and mental feebleness and indisposition to all activity; all thought and desire for spirits pass away, and, although the mind is clear, energy and ambition to do more than is absolutely necessary is absent. The conviction that spirits will never be taken again is emphatic and clear, and the certainty of a cure is uppermost in the mind. The appetite is good, and sleep is without dreams, and no anxiety or care about any present condition exists. The second general condition is the opposite, and is marked by periods of excitement, both mental and muscular. The same confidence of cure and absence of desire for spirits exists. The

mind seems alternately clear and dull. In the dull periods apprehension and a feeling of insecurity and suspicion of disease and trouble exists. In the excited period there is trembling, hypersensitiveness, and great elation. Dreams occur at night, and strong disposition to be engaged in something all the time. Emotional states and muscular agitations come and go with the disposition to work it off by incessant activity. When strychnine is withdrawn, both of these conditions pass away, or improve to such an extent that the origin is apparent.

Persons who have taken the "Gold Cures" often display these two conditions, and speak of the profound impression which the medicines make on the mind and body. In some instances the stupid stage never passes away. Such persons exhibit a degree of mental and muscular feebleness the rest of their lives. It is evident that strychnine is a very unsafe remedy given indiscriminately in inebriety. Persons who suffer from the irritable stage following the use of this drug very frequently relapse, drinking to greater excess than before, with more prostration and general feebleness. Where strychnine is used to produce a disgust for spirits the result is very unsatisfactory, and it is doubtful if more harm does not follow than good. While an aversion for spirits is easily produced it is in the nature of a substitute supplying one narcotic for another. The impression from the strychnine extends to all of the functional and organic activities of the body, and when continued becomes a new source of poisoning, with still further organic derangements. Using strychnine with spirits is still more dangerous, and is often followed by low states of delirium and spasmodic conditions which disappear when the drugs are withdrawn. In these states the increased heart's action, with muscular trembling, is followed by a marked rigidity and tension of the muscular system which calls for more spirits until states of paralysis follow. Strychnine is, no doubt, a valuable tonic after the alcohol has been removed in very small doses for a few weeks. Care should be exercised

to discontinue its use on the first appearance of sedation and muscular excitement. It is to be remembered that many cases are very susceptible to the action of strychnine. In all probability the palsy from alcohol increases this susceptibility. These states should be recognized as possible in all cases, even when small doses are given for a long period. It is doubtful if strychnine can be used in all cases with safety, and usually it is inferior to nux vomica and many cinchona preparations.

A NEW MOVEMENT FOR THE DEVELOPMENT OF ASYLUM TREATMENT OF INEBRIETY.

During the past few years an increasing number of homes, asylums, and sanitariums have been opened for the treatment and cure of alcohol, opium, and other drug habitués, together with mental and nervous cases.

Many of the managers of these places claim to have discovered some specific remedy or combination of drugs for the absolute cure of inebriety in all its forms and allied diseases. They also claim most extraordinary results and cures in a limited time.

Such institutions are usually managed by unknown and so-called reformed men, and have no regular organization, and pursue very unusual methods of attracting and holding patients. Their remedies are always concealed from the profession and their assertions and statements are dependent entirely on faith.

Many of these asylums claim to belong to some syndicate, and move from place to place according to the success or adversity which they meet.

These irregular homes and sanitariums assume exemption from all supervision or control by authorities on the ground that they only receive alcohol, opium, and other drug-takers, also persons who are enfeebled by these drug habits, all of

which are moral disorders not recognized as insane or irresponsible. Hence anyone may open any kind of an asylum at any time and place and receive inebriates of all degrees — delusional, delirious, or imbecile — and treat them in any way or manner, and turn them out at the will of the officers.

Everything depends upon the credulity of the patient and his friends and the mystery and pretension of the manager.

The common result of this treatment is that the patients are made more incurable, and while the drink symptom is often suppressed for a time it breaks out again with greater intensity, leaving the victim more degenerate than before.

This indiscriminate treatment by so-called specifics and other means is a serious abuse which demands correction.

The state guards the insane and feeble-minded, and requires all private asylums to be organized and under some official control; also that they be open to observation and managed by reputable, scientific men, above suspicion of fraud and quackery.

These irregular asylums, advertised largely by circulars and pamphlets, and boastful claims of remarkable cures, are confusing to the public, who are unable to discriminate. As a result, all reputable institutions suffer both in reputation and ability to carry on legitimate scientific work.

In view of these facts, which are becoming more and more prominent, a committee of the Association for the Study and Cure of Inebriates called a meeting at Greenwich, Conn., July 17th, to consider the advisability of a more thorough organization of all asylums and homes, and for some uniform plan of action to correct this evil. A large number of superintendents of private asylums were present. Dr. Mason, the president, explained the object of the meeting and the necessity for conference and united effort to secure the best results in this work.

A very general discussion followed: after which the following propositions were unanimously adopted:

1. To promote the scientific study of alcohol, and other

drug neuroses, and to encourage desirable and special legislation with reference to the care and control of such cases. 2. To discourage and prevent all efforts to treat alcoholic inebriety or the opium and the other drug addictions with secret drugs and so-called specifics, and to prohibit the sale of all nostrums which claim to be absolute cures and which contain alcohol, opium, or its alkaloids, or other pernicious and harmful drugs, or which contain substances which are inert and are fraudulent impositions on the public. 3. To secure in all states the special supervision and inspection of all institutions for the care and control of inebriates and other drug neuroses. 4. To encourage as an association every individual and organized effort to study scientifically and practically all the various means and methods of both cure and prevention which are found valuable in the treatment of alcohol and other drug addictions. 5. There are many institutions in this country which treat the alcoholic and other forms of drug addiction associated with mental and nervous cases. These institutions should all be organized and follow some general principles and methods of practical work. By this means public opinion could be more effectually influenced and legislation secured, resulting in a great advance in the uniform scientific treatment of these cases. To isolate the chronic, pauper inebriate from the insane and criminal class, and secure the erection and maintenance by the several states of institutions for the segregation and special treatment of chronic, pauper inebriates, and to incorporate farm colonies or other forms of institutional relief which shall combine medical care with occupation, control, and discipline. 7. We urge all asylums and institutions to unite with us in an effort to raise the subject of the medical treatment of these borderland cases out of the realm of quackery into that of exact scientific work, and in this way be able to treat these obscure diseased conditions in a rational way and along rational lines.

A resolution was offered to have a second conference meet-

ing at Hartford at Walnut Lodge Hospital, Oct. 25, 1900. Other meetings were projected and great interest was manifested to raise and develop the standard of asylum work for the successful cure of inebriety and its allied diseases. Dr. J. J. Wagner gave the association a dinner at the Ardendale Asylum, and the occasion will be long remembered by all present.

The following interesting case illustrates the power of heredity: The only son of a distinguished man who drank moderately and at the table from early life, has been the subject of very great interest in the circle in which he lives. The mother of the boy is a strong physical and intellectual woman, who, like her husband, has drank wine at the table since marriage. The child was healthy up to five years of age. At that time he suffered from an attack of either malarial fever or some form of meningitis. The facts on this point are obscure. Recovery followed, and physical development went on progessively to manhood, but the brain remained the same as that of a child. There was no idiocy or dementia, but simply a child-mind. Up to twenty-six years of age he was well and strong, and in every way seemed vigorous except the mind failed to go beyond the childhood point. At about that time a change appeared. His nervous centers gradually gave way, and physically, he seemed to be aging fast. The heart's action decreased, the skin became shriveled and old, his form was bent, and the least exertion prostrated him. Constipation appeared, appetite became irregular. He was treated vigorously with tonics and strychnine, without results. His mind at this time from being placid and tractable exhibited irritation and extreme nervousness. At times excited and destructive to small objects about him. Then quiet and still with a dreamy, absent look. In this condition he is at present evidently rapidly declining, and in the opinion of his physician becoming a decrepid old man. The alcoholic inheritance is no doubt responsible for this extraordinary condition.

The death of Robert Rae of England removes one of the most picturesque, energetic reformers in the temperance field of the century. He was not an orator nor brilliant writer, but he was essentially a great organizer and diplomatic worker, whose tactful efforts and wise direction of events have revolutionized English drinking society. His influence extended to all circles of society, including the learned professions, and he was able to bend and mold them into adherents and advocates of total abstinence. Men high up in both the medical and theological professions united in advocating total abstinence through his personal magnetism. While John B. Gough aroused the masses by his personal oratory, Robert Rae, through his mild winning ways and earnest personality, persuaded men to give up spirits and beer and adopt total abstinence. He was influential in forming many large societies and giving shape and direction to their work more than any one man in England. Such a man in America would revolutionize all our distracted temperance efforts. Mr. Rae visited America a few years ago and was recognized as a great genius in this field. Our Journal sends its warmest condolence to his family and friends at the sad loss which is felt in both countries.

Tea inebriety has been brought into prominence in a recent case where the diagnosis was disputed by the physicians. The facts were: A prominent lady suffered from obscure mental and nervous symptoms which puzzled the family physician and consultants, the chief symptoms of which were headache, hallucinations of sight and hearing, nausea, and, finally, convulsions, with periods of unconsciousness following; then recovery, and later, within a day or two, a return of these symptoms. Anæmia, and finally dropsy, appeared. There was no history of using spirits. She had been healthy and took much exercise. After various widely differing diagnoses were made, it was

ascertained that she kept in her private bathroom a pot of tea constantly in use, and at times she would drink nearly a quart in a few hours. This was followed by a paroxysm and abstinence for two or three days, and then another secretive use of the tea. Her recovery followed the removal of the teapot. The prostration and defective vision and general nervousness lasted for some time.

Atlantic City is, no doubt, one of the finest watering-places on the Atlantic coast. It certainly is one of the most populous and largely frequented by all classes. To the tired physician and invalid it has more attractions than any other place. The Hotel Dennis, which has been under one management since 1866, is an ideal one for the brain and nervous-tired man or woman. The rooms, parlors, and dining-room are homelike, and a general air of quiet and serenity pervades the house. There is a rare combination of hotel and cottage life with the best features of each that is very unusual in sea-side hotels. We urge all our readers who go to Atlantic City to stop at the Hotel Dennis.

We call especial attention to the advertisement of the Chautauqua Literary files which comprise a series of envelopes arranged in a box for the purpose of grouping and making available a vast amount of facts and clippings of the daily press. This appears to be the most practical and useful of all the various methods for collecting and classifying matter to be used in the future. We urge our readers to write to the Educational Specialty Co. for circulars of this practical savings bank. We shall refer to this again.

Clinical Notes and Comments.

EFFECTS OF TOBACCO.

E. E. Harve presents these statements in the *Medical Student.* The case of the human organism against tobacco is made out by Dr. Richardson and others to be something as follows: In smoking tobacco we take in carbonic acid and carbonic oxide, several ammonias, and an oily substance which is crude nicotine, while the amount of aqueous vapor given off by respiration is lessened, amount of fæces, of urine, of urea, and chlorine is also diminished, and the amount of free acid, phosphoric and sulphuric, eliminated through the kidneys is increased. In the crude nicotine is the nicotine proper, a volatile substance, and a bitter extract. The ammonia and the nicotine especially are the substances which so sadly poison the system, and they act in numerous directions: 1. The ammonias entering the blood make it alkaline and fluid, thus interfering in its proper nutritive activity. 2. The stomach is debilitated, and dyspepsia induced by the general influence of the drug. 3. The throat is made dry and red, the tonsils enlarged and morbid condition known as "smoker's sore throat" results. 4. The innervation of the heart is disturbed, its action being weak, irregular, and intermittent; palpitation, præcordial pains, faintness, and vertigo are the consequence, forming the well-recognized symptom of the "tobacco heart." 5. The laryngeal and bronchial mucous membrane, if already irritable, are made more so. 6. Owing chiefly to the disturbance in the blood and heart, the processes of nutrition are slowed and in the young may be seriously

affected. All the evils of tobacco are intensified a hundred fold upon the young. It stunts the growth, poisons the heart, weakens the sexual organs, impairs the mental powers, and cripples the individual in every way. Sewer gas is bad enough, but a boy had better learn his Latin over a man-trap than get the habit of smoking cigarettes. These facts ought to be taught in our public schools. 7. The sexual organs are at first stimulated, especially by cigarette smoking, but are eventually weakened in power. Excessive smokers, if very young, never acquire, and if older rapidly lose, their virile powers. 8. Vision is impaired, especially if alcohol is used in conjunction with the tobacco, "tobacco amblyopia" being produced. 9. Muscular co-ordination is impaired, especially in the young. 10. The antidotal effects of alcohol to tobacco lead to forming the habit of drinking. 11. The power of concentrating the mind, and, perhaps of intellectual activity in general, is lessened. A person can do more intellectual work without tobacco than with it. All smokers can do more work if they smoke moderately than if they smoke excessively. The symptoms of mild poisoning by tobacco smoking are increased flow of secretion from the eyes, nose, and mouth, with feeling of tightness in the head as though a band was stretched around it, disturbance of vision, with tinnitus and vertigo. Palpitation and præcordial distress follow, and aching and feebleness of the arms. Then comes nausea, eructations, vomiting, clammy sweats, voidance of the bowels, in fact, a general state of collapse. The copious perspiration causes lowering of the superficial temperature, and probably depends upon and is in consequence of vaso-motor paralysis.

In general, the excessive use of tobacco becomes mischievous, both by the waste it causes of a precious animal fluid, and by its direct influence upon the nervous system and digestive apparatus. In both these respects, chewing tobacco is infinitely the more hurtful mode of using it.

ALCOHOL IN EMERGENCIES.

Dr. J. V. Bell remarks as follows on this subject:

"Fetch the brandy" is the shibboleth of the neurotics, and we have all seen fainting persons revive after the *eau de vie*, but how often a recumbent position, or a glass of cold water, or the splash of a wet towel, would be just as effective, without entailing the headache which often follows the spirituous draught. There are, also, risks attending the giving spirits to persons apparently faint. A slight leakage may have taken place in a small vessel inside the head, resulting in faintness. During the faint condition, the wound in the vessel may be temporarily healed. Absolute quiet is essential, but some bystander gives brandy; the heart's action is excited by it, and the leakage in the vessel is aggravated, the patient's chance of recovery being correspondingly diminished. Take also the case of an accident. A man falls on his head, becomes faint from some vessel giving way, and causing pressure on some vital part. The chance of life may depend on complete repose, but some mischievous person comes in and gives spirit to save life, instead of which the life may be extinguished by alcohol.

The reasons against the use of alcohol in ordinary faintness apply still more in epileptic attacks, as the danger that these may pass into apoplexy would be increased by giving brandy. Mustard plasters and sal volatile are more effectual and less risky. So, too, the commencement of an apoplectic attack would often be overlooked by an ignorant observer.

The recovery of persons from drowning is best compassed by skilled manipulation, together with the application of hot bottles and copious draughts of hot coffee. Here again the danger of apoplexy following long immersion is a great reason against alcohol, unless in a few selected cases.

Another case in which the same poison is given is that of some over-wrought, emotional woman, whose mental balance is tottering already. She wants to escape stress and strain,

but the brandy prescribed by an injudicious friend deprives her of the opportunity of placid reflection, and aggravates her ultimate disquiet by distorting the medium through which she looks at the burden of circumstances, as well as by the sense of exhaustion which soon follows as a reaction from her excitement. Little by little the alcoholic habit is induced, and the draught which seemed, to an illogical friend, a necessity for a temporary emergency, becomes the predisposing or exciting cause of actually unhinging the ill-balanced mind, which will probably find refuge in an asylum, after alcohol has wrought its perfect work on it.

The idea prevailed for many years that, in all cases of heart-failure, brandy must be given to stave off impending death. We know now that there are several drugs which are much more effective than alcohol in these emergencies, although it is desirable that the administration of these should be retained by the medical profession, or should be under their direct supervision, because those who are not experts in the use of drugs might do great harm by giving them in unsuitable doses and in inappropriate cases.

Devotees of strong tea are very apt to complete a vicious circle by alternating this dram with one of spirits. The palpitation caused by one poison seems to them to need the other to counteract it, and thus the alcoholic excitement has, in its turn, to be mitigated or temporarily suspended by the tea drinking.

Chloretone is the name adopted for a new hypnotic and anæsthetic known chemically as Tri-chlor-Butyl Alcohol. This article differs from acetone chloroform, and therefore the investigators thought best to coin the new word Chloretone to avoid confusion. The investigators who have reported on it are: Drs. E. M. Houghton of Detroit, Mich., and I. B. Aldrich of Baltimore, Md. They report that "it is formed when

caustic potash is slowly added to equal weights of chloroform and acetone, and may be isolated from this mixture, after the removal of any excess of acetone and chloroform, by distilling with steam. Obtained in this manner, it is a white crystalline compound, having a camphoraceous odor. When freed from water by melting, and allowed to cool, the camphoraceous odor is more pronounced, and its general appearance resembles camphor more closely. It is very soluble in chloroform, acetone, strong alcohol, ether, benzine, and glacial acetic acid, sparingly soluble in cold water (1 per cent.), more soluble in boiling water. Dilute acids and alkalies are apparently without effect; concentrated sulphuric acid decomposes it."

In a general way the claims for this drug may be summarized by stating that its action on the central nervous system is similar to the anæsthetics and hypnotics of the fatty acid series without depressing the center of the medulla; locally it acts like cocaine as a peripheral anæsthetic. It is too early to prophecy what position chloretone will take in medicine, but the results as a hypnotic and local anæsthetic are very encouraging. — *Dr. Squibb in N. Y. State Medical Association Report.*

W. C. Frederick, M.D., Lono, Ark., says: I have used S. H. Kennedy's Extract of Pinus Canadensis (Dark), one to three of water, in sore throat from cold, with splendid results, and have now under treatment a little boy three years old, suffering from strumous diathesis, who has been afflicted over a year with otorrhea. Have been using as an injection two drachms of S. H. Kennedy's Extract of Pinus Canadensis to four drachms of water, three to five drops, two or three times a day, the ear previously cleansed with castile soap. The little fellow commenced to improve from the very start, and is rapidly improving daily; the discharge has almost ceased. He has been on this treatment for about two weeks.

Treatment of Cancerous Cachexia. Lawrence (*The Medical Brief, April, 1900*), gives as the best treatment for cancer and the cachexia attending it, teaspoonful doses of ecthol four times daily in conjunction with alterative doses of iodide of arsenic. The latter should be administered in doses ranging from one-sixtieth to one-thirtieth of a grain three times a day, and continued for a long period. Ecthol contains the active principle of thuja, which is accorded specific value in cancer. The treatment outlined is aimed to cause absorption of the cancerous tissues. — *Medical News.*

become very much exhausted was persuaded to use Bovinine. Through some mistake he took two ounces every two hours the first day. The next day all desire for spirits disappeared and sharp diarrhoea followed. He was alarmed and went to the doctor, who advised him to take one ounce twice a day. From this time his recovery was rapid and marked. He has no appetite for spirits and ascribes his cure entirely to Bovinine.

Dionin as a substitute for morphine, introduced by Merck & Co. into this country, is a most valuable addition to the narcotics which can be used with safety. We have found in the withdrawal of morphine that dionin relieves the patient's sufferings and irritation more promptly than any other drug. While it does not produce stupor its narcotic action is that of soothing, quieting the acuteness of the irritation without any headache or depression afterwards. We have used it in several cases without any of the unpleasant effects which are common to other narcotics. Apparently it may be given for a long period without untoward symptoms. Dr. Plessner remarks as follows on its action: "The greater usefulness of dionin, however, lies along the line of prevention of morphinism. It is amply sufficient to control the cough of phthisis, bronchitis, and other respiratory diseases. An adequate dose of dionin compares favorably with morphine for the treatment of asthma, sciatica, locomotor ataxia, dysmenorrhea, etc. If dionin be therefore substituted for the other drug, we may hope thereby to restrict the number of those patients who become unwilling victims of the morphine habit."

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The Antikamnia Chemical Company have forwarded to us from their London House, No. 46 Holborn Viaduct, samples of their five-grain antikamnia tablets, and also of antikamnia and codeine tablets. The former are so well known that it seems hardly necessary to do more than refer to them as an unequaled analgesic. The antikamnia and codeine tablets contain four and three-fourths grains of antikamnia, and a quarter of a grain of codeine. This is a valuable combination, the synergetic effects being all that could be desired. — *Extract from Dublin Medical Journal, March, 1900.*

AMERICAN ASSOCIATION FOR THE STUDY AND CURE OF INEBRIETY.

(Organized November 29, 1870.)

I. The active membership of this association is composed of the resident, attending, and consulting staff of all hospitals or sanitoriums, private or public, where alcohol, opium, or other drug neurotics are treated, either alone or in conjunction with other forms of nervous or mental disease.

II. All such institutions organized and conducted in proper conformity with the laws of the several states in which they are located are entitled to representation in this association.

III. The active membership of this association is composed of physicians in good and regular standing who are actively connected with such institutions or who have been honorably retired from active service in connection therewith.

IV. Physicians not connected with such institutions, and members of boards of direction of such special hospitals, asylums, etc., are eligible as associate or lay members of this association upon payment of the dues of membership.

V. The object of the association is:

First, to promote the scientific study of alcoholic inebriety and kindred drug habits, and to encourage desirable and special legislation with reference to the care and control of alcoholic and other drug inebriates.

Second, to isolate the chronic pauper inebriate from the insane and criminal class, and secure the erection and maintenance by the several states of institutions for the segregation and special treatment of chronic pauper inebriates, and to incorporate farm colonies, or other forms of institutional relief, which shall combine medical care with proper occupation, judicious control, and discipline.

Third, to secure in all states the special supervision and inspection of all institutions for the care and control of inebriates or other drug habitués.

Fourth, to discourage and prevent all efforts to treat alcoholic inebriety or the opium or other drug habits with secret drugs and so-called specifics, and to prohibit the sale of all nostrums which claim to be absolute cures and which contain alcohol, opium or its alkaloids, or other pernicious and harmful drugs, or which contain substances which are inert and so are fraudulent impositions on the public.

Fifth, to encourage, as an association, every individual and organized effort to study scientifically and practically all the various means and methods of both cure and prevention which may be used in the care and treatment of alcoholic and other forms of drug addiction.

There are many institutions in this country which wholly or in part treat the alcoholic and other forms of drug addiction. These institutions should be organized and follow some general principle and method of practical work. By this means public opinion could be more effectually influenced, and legislation secured, resulting in a great advance in the successful and scientific treatment of this class of cases. Every such asylum and institution in the United States is urged to join this association, and by their united effort lift the subject out of the realm of quackery and unscientific treatment into that of exact scientific work, and to place the status of the treatment of alcoholic inebriety and kindred drug habits on the same level with that of other similar diseased conditions, and secure the same medico-legal and institutional advantages. A membership fee of two dollars is charged yearly, which includes the annual subscription to the *Journal of Inebriety*, the organ of the association.

Address: —

T. D. CROTHERS, M.D.,

Secretary and Treasurer.

HARTFORD, CONN.

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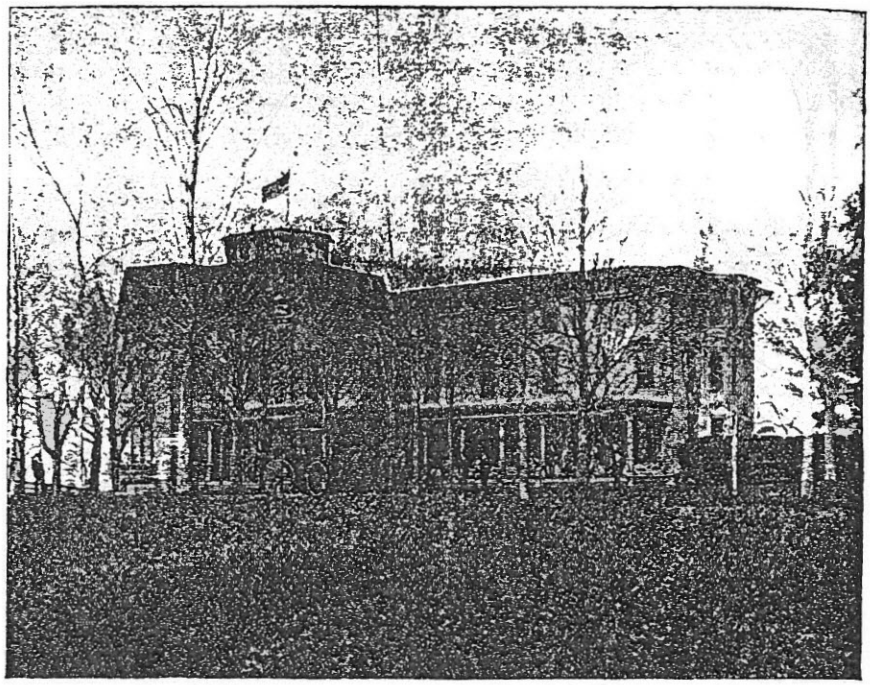

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