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THE QUARTERLY JOURNAL

OF

INEBRIETY.

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

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TABLE OF CONTENTS.

APRIL, 1899.

	Page
DIETETIC CAUSES OF INEBRIETY. DR. THOMAS D. CROTHERS,.....	109
SOME CONCLUSIONS IN TREATMENT OF ALCOHOLIC AND DRUG INEBRIATES. DR. J. M. FRENCH,.....	117
TREATMENT OF INEBRIATES. DR. A. M. ROSEBRUGH,.....	126
WHAT CLASS OF INJURIES TO THE HUMAN BODY DEPENDENT ON VIOLENCE ARE CAUSED BY ALCOHOLIC EXCESSES. DR. T. H. MANLEY,.....	132
COCAINE ADDICTION AND ITS DIAGNOSIS. DR. STEPHEN LETT,...	138
TREATMENT OF INEBRIETY. DR. H. A. RODEBAUGH,.....	144
THE TOXIC EFFECT OF TOBACCO. DR. GEO. W. CROOK,.....	150
REPORT OF WALNUT LODGE HOSPITAL FOR 1898,.....	156
ABSTRACTS AND REVIEWS:	
MICROSCOPICAL CHANGES IN TWO CASES OF MORPHINE POISON- ING,.....	161
ALCOHOLOGENIC CARDIAC EPILEPSY.....	163
STUDIES OF THE ACTION OF ALCOHOL ON GANGLION CELLS.....	164
ERUPTIONS PRODUCED BY ALCOHOL.....	167
SEVENTH ANNUAL REPORT OF MASSACHUSETTS HOSPITAL FOR DIPSOMANIA,.....	169
TASTE DEPRAVITY OF INEBRIATES,.....	172
OPINIONS OF LEADING MEDICAL TEACHERS, ETC.....	173
DIFFERENTIAL DIAGNOSIS IN CEREBRAL HEMORRHAGE.....	180
ABUSE OF STRYCHNINE.....	182
EDITORIAL:	
INEBRIETY AND INFLUENZA.....	185
INEBRIETY IN FAMILIES OF NOBILITY.....	186
CAPITAL AND INEBRIETY.....	188
HALF TRUTHS,.....	190
AN ALCOHOLIC PROBLEM.....	191
SCHOOL BOOK CONTROVERSY.....	193
CLINICAL NOTES AND COMMENTS.....	195

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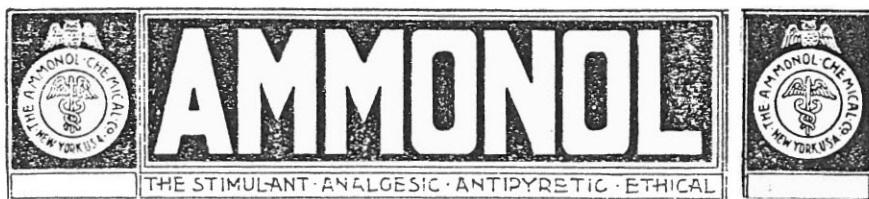
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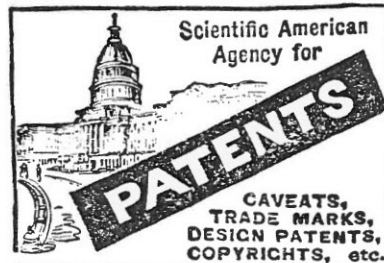
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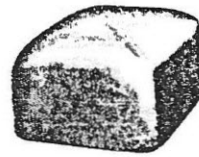
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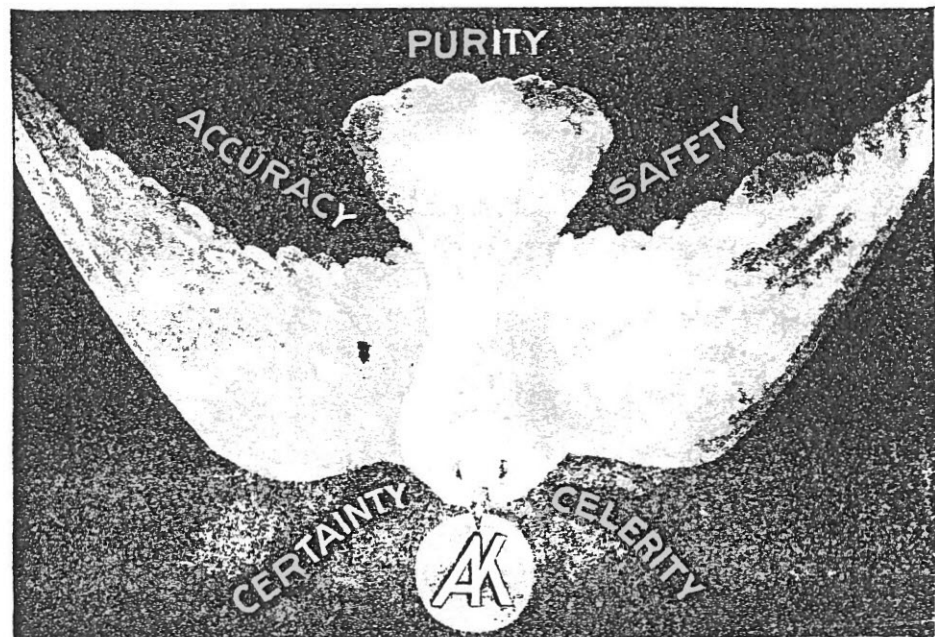
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This Journal will not be responsible for the opinions of contributors, unless indorsed by the Association.

DIETETIC CAUSES OF INEBRIETY.

By T. D. CROTHERS, M.D.

Superintendent Walnut Lodge Hospital, Hartford, Conn.

Inebriety is one of the most complex neuroses and obscure border-land diseases known. To the average practitioner the inebriate is simply a weak, willful, vicious man, who has full power to do different but will not exercise it. When the inebriate is examined carefully, and all the facts of his inheritance and nutritional and also mental life and growth are grouped, a uniform progressive line of disease is found. The pathologic conditions which precede alcohol, and the conditions which follow from its use, are marked in different degrees. The former are not recognized and the latter have only recently come into prominence. The use of alcohol is followed by conditions which differ very widely, and are unexplainable except by a study of preceding conditions before spirits were used. One of these conditions is heredity, that is the transmission of defects and predispositions to degenerate in certain directions, with or without special exciting causes. Another is nutrition, a third is disease and traumatism and its

sequelæ, a fourth is culture and refinement, and so on through a long list of causes. In all cases it may be said that the nerve centers suffer from practical starvation, and the narcotism from alcohol is grateful in covering up the irritation and the pain which demand relief. In my studies the nutrition of childhood has been found to be an active cause in many cases. I have divided these into the *overfed* and the *underfed* cases. In the former the clinical history would follow these general outlines: The nursing child would be surfeited both at the breast and by infant foods. The central thought of the parents would be the danger of starvation and the need of constant ingestion of food. When indigestion followed, another nurse, and changed foods in equal quantities would be given. Later, when the child was able to occupy a place at the table with his parents, all discrimination was left to his own tastes, the parents reasoning that the appetite was the best guide and the child's food inclinations should be followed. Anything the child called for as foods or fluids were given freely. The disturbances of digestion which follow are usually treated as weaknesses and tendency to diseases. Consumption, rheumatism, disease of the liver, stomach, and kidneys, and other formidable diseases, are discerned in the horizon by the worldly-wise physician. Patent foods, climate cures, changes of school and culture, and many remedies are tried. Finally puberty is passed, and the digestion is permanently impaired. The appetite is lawless and without control. The body is ill-nourished. Already fatty deposits have begun. The demand for foods and fluids is mere impulse. The taste is disordered. Large quantities of certain classes of foods are taken, then abandoned. The same of fluids, teas, coffees, mineral waters, beers, wines, and anything used at the table.

Indigestion and obscure or well-defined nerve failures, nerve disturbances, irregularities of sleep, all follow. Then, finally, comes the subtle tonic bitters containing from twenty

to forty per cent. of alcohol, or wines or whisky, and inebriety has come. The relief which comes from spirits is so marked that it is continued, and then follows a rapid, sharp degeneration, and the inebriety is chronic, and complex mental and physical changes appear; opium and other narcotics follow, changing from one to another. This picture is not confined to children of wealthy persons, but occurs in all the various circles of society, in the family with moderate means, and among children who are obliged to begin the serious work of life at an early age. The dietetic delusions of parents are engrafted and engraven in the minds of children, and the end is inebriety. Some of these cases take on paroxysmal forms, after spirits are used. Thus, an attack of acute indigestion is followed by a drink craze, which after a certain time subsides, and breaks out again after a free interval. They become periodic drinkers, and when they die show in the post-mortem remarkable stomach degenerations. It is found that the sudden unreasoning outbreaks of what is called alcoholism, or the use of spirits to prolonged intoxication, occur in those delusional dyspeptics who, from infancy, have had no dietetic or food control. Such morbid eaters occur often among prominent men, and when they begin to use spirits have no power of control and are soon pronounced inebriates. In these cases, digestion is early strained and stimulated far beyond the needs of the body, and the food, non-assimilable or in excess of the demands of the organism, accumulates and becomes a source of degeneration. Overgrowths, retarded growths, defective growths, with functional derangements, both of physiologic and psychologic control, follow. Excessive nutrition in childhood is often a cause of inebriety in later life, both with and without special exposure, and often among persons who by environment would naturally not use spirits.

The second class of cases I have called the underfed. By that I mean persons who have been practically starved in

many ways the first twenty years of their lives. The starvation has come from exclusive diets used from necessity or from theory, or from carelessness and neglect. In very poor families the food from infancy would be potatoes, corn meal, or pork, or fruits in some tropic climates, or some form of liquid foods, no variety, and one article almost exclusively. In other families, from theory, children would be forced to use one class of food and no others, as, for instance, meats, or grains or fruits to the exclusion of every other class of foods.

In the larger proportion of cases, carelessness prevails. Children are supposed, after the nursing period, to eat the same foods as the rest of the family, and are given without discrimination anything which is prepared. No care is taken of their diet, no judgment is exercised as to quality, variety, or nature of foods. At one time fruit is used to excess, or vegetables, or meats, or grains, according to the supply. In the family of a country grocer, three boys, after a protracted period of indigestion, became inebriates. I found that the diet of the family was largely dependent on the surplus of perishable food which accumulated in the store. At one time it was eggs, then fruits, then grains, then meats. This diet was insufficient, and states of starvation and defective growth followed which led most naturally to the narcotic of alcohol. In another case two sons of a clergyman began to use alcohol to excess without any apparent reason. The theory of the parents that excess of quantity and variety of food was dangerous had been carried out from infancy. A limited and always insufficient quantity of potatoes and bread had constituted the daily food. When these children grew up, they ate to great excess away from home. This, with starvation at home, broke up the normal nutrition, and the relief from alcohol was so great as to be irresistible. In a case of unusual mental ability, where the user of spirits was of an exceptional character, and the effort to recover was of equal intensity to the craze for drink, it was found that regular, uniform diet of moderate

variety of foods was medicinal. As long as his diet was mathematically uniform and unchangeable he could keep from spirits, but the slightest deviation in time of using food and their quantity and quality would destroy his mental control. It was ascertained that his mother, during pregnancy and lactation, entertained some extreme opinions of foods and their value, and put them in practice in her own case. The result was a very sensitive nutrient organization in the child, with anaemic sick headache throughout childhood, great excesses at puberty in foods and drinks, and continued nutritive disturbances up to manhood. Then a period of drug-taking and periodic inebriety. Now he is able to be a total abstainer only by the most careful attention to diet. There appears to be a close relation between the excessive use of meat in childhood and inebriety in early middle life. While the facts are not sufficient from which to draw any general positive conclusions, there are many reasons for supposing that often they are as cause and effect. This appears clear in this case: The parents in a family entertained very strong confidence in the value of meat as an ideal food. It was used and urged upon the children in all forms. One boy began to drink in college and died after a short period of great excess. A sister was hysteric and became a drug-taker and died early. Later, the parents abandoned meat for grains and fruits, and three children brought up on this diet have continued well and healthy. The conditions and surroundings are the same, but the vigor of the children are varied widely. Beef-eating foreigners who bring up children on this diet are astonished that their children turn to beer and wine so early. The reason is the early deranged digestion which, calling for relief of some kind, finds it in alcohol. The question of the value or injury from meats and grains is yet to be studied and settled. After alcohol is taken to excess, the complications of nutrition are many and serious. One of the first essentials in treatment is the elimination of toxins with proper nutrition.

Foods of easy digestion with moderate variety and quantity, and taken at regular intervals, are required. Concentrated foods may be useful in some cases and injurious in others. Frequent use of food and in large quantities is to be avoided.

Two conditions exist, impaired and defective nutrition, and congestion from over-accumulation of toxins and waste, unassimilable foods and starvation. The treatment is not by routine or specifics, either foods or drugs, but by the use of many and complex measures to meet the special conditions called for. Inebriety is not confined nor traceable to any special cause, and its treatment cannot be successful by any one measure or form of drug. The unexpected outbreak of the drink craze in early life and the persistence of the use of spirits are unmistakable evidence of some central defect of nerve centers and neurons. These defects are most likely to come from nutrient degenerations, in what way no one can tell, yet the facts point out a distinct relation.

The drug poisoning from alcohol, opium, and other narcotics most clearly affects the nutrition, and in all cases is followed by veritable starvation and failure to assimilate the food required. Where causes are traceable to early life, the degeneration is greater and the symptoms are complex. The same nutritive problems appear in all cases. The use of tea, coffee, and wines at meals in early life is a starting point for both degeneration and inebriety later. Many of the most intractable cases of pronounced degeneration where the alcoholic symptom was maniacal have a history of early tea and coffee drinking. The facts fully sustain the assertion that a large number of cases of inebriety are traceable to defective nutrition in early life. This may be both starving and poisoning, and the extreme persistence of these states is remarkable. Thus the bad living of childhood, with its defects of nutrition, may appear in later life, as in the following: A child of healthy parents who were killed by accident was kept

six years in the family of a German wine drinker. He was overfed and given wine freely at the table, and was considered sickly. Then he was taken by another family and brought up very carefully and abstemiously. After a long temperate life he retired from business at sixty, and soon after began to over-eat and drink wine at meals, and finally became an inebriate. Many cases are traceable where inebriety began at or before puberty, or after, then subsided, and later in life broke out again without any special causes. The expression, "sowing wild oats," often describes a period of excessive use of spirits and nutritional disturbances, and then a full subsidence and a long period of temperate living. Far down in middle and later life a recurrence of this excess period appears again, and often death follows. Here there is a persistence of nutrient and poison effects, which break out like some masked fire which has been dormant for a long time. The appearance of inebriety is usually sudden and without any exciting causes, and the change in conduct and manner of living is unexplainable. The same methods of using spirits and the same food impulses and tastes, and the same surroundings as far as possible, appearing after a lapse of a lifetime, show that early defects are not affected by time. I conclude at this point with a summary of what I have intended to make clear in this study:

1. Inebriety is a most complex neurosis. The causes are equally complex, and include all the various states of degeneration which influence and disturb nutrition.
2. Obscure indigestion begins, and for this drugs and bitters containing alcohol are used. The narcotism which follows is so grateful that it is continued.
3. Dietetic delusions are fostered in the minds of parents and children, and from this many different forms of inebriety begin.
4. Often the most maniacal and chronic inebriates are from these delusional dyspeptics.

5. Starvation is present in many of these cases. The quality and variety of foods are deficient, and defective nourishment follows.

6. The uniformity of taking foods and the quality and variety are essential. This and nutritional rest and mental anxiety are important factors.

7. The inebriety following these conditions is successfully treated by elimination of the toxins and special correction of the nutrition.

8. Nutrition is a very active cause in the production of inebriety, and should receive a careful study in all cases.

Apomorphine merits a conspicuous place among the remedies for acute alcoholic delirium. Here there is muscular rigidity, convulsions, a full, bounding pulse, and usually a stomach with an irritant, just the condition to be counteracted by the physiological effects of apomorphine. It does the work in minutes, whereas it takes hours for the bromides, chloral, and such remedies to produce the same effect. It is far superior to morphine, which dries up secretions. A case in point: At midnight a physician was called to see a man said to be in convulsions. Upon entering the house he saw a man on the floor with five others holding him down. His face was flushed, pulse bounding, and he had violent tonic convulsions every few minutes. He was well known as an habitual drinker, and a strong odor of alcohol pervaded the room. One-tenth grain of the hydrochlorate of apomorphine was injected hypodermically. In four minutes free emesis followed, rigidity gave way to relaxation, excitement to somnolence, and without further medication the patient fell into a quiet sleep. While apomorphine acts well in these cases, its use is generally contraindicated in genuine cases of delirium tremens, in which there is usually a weak heart.

SOME CONCLUSIONS IN THE TREATMENT OF
ALCOHOLIC AND DRUG INEBRIATES.

BY J. M. FRENCH, M.D., MILFORD, MASS.

An experience of several years in the treatment of drug *habitués*, so called, has convinced me that in all cases of any considerable standing the disease to be treated includes much more than the habit of drug-taking, and the breaking up of the habit is not the cure of the disease. In order to be in any measure complete, this must include three stages:

1. The stopping of the drug-taking. This deals with the habit only. The removal of the morbid cause, in this as in most other diseases, is the first condition of cure. But though of prime importance, it is only a beginning. Even though the drug be stopped, there is great danger of a return to its use, unless the first step is followed by another, namely:

2. The overcoming of the drug-craving. The tendency of all drugs of the class now under consideration is to create a morbid appetite or desire for their continuance. Unless this is removed it will in the end almost certainly lead its victim to return to the use of the drug which he had abandoned. The history of temperance reform has shown how universal is this law. The man who practices total abstinence while fighting the desire may be a reformed man and entitled to all credit as such; but he certainly is not a cured man. But even when the drug is stopped, and the appetite removed, except in slight and recent cases, the work is done. There yet remains the most difficult portion of the task:

3. The removal of the drug effects. The morbid effects of the continued use of the drug must be gotten rid of and the

system restored, in some measure at least, to a normal condition before a cure can be claimed. A drunkard who is suffering from alcoholic neuritis is uncured, and one who has advanced cirrhosis of the liver is incurable, though in either case he may cease his drinking, and even lose his desire for drink. A narcotic *habitué* whose indulgence in opium has brought on loss of sexual power is uncured while this condition continues, though he may not have taken opium for months or even years. The restoration of the system to a normal condition is the essence of cure; all the rest is preliminary and partial. We must not, however, forget that in this as in other diseased conditions it is not always, or even often, that a perfect cure can be effected, but that we are frequently obliged to be satisfied with partial restoration to health.

No serious case of any drug disease can be treated to the best advantage except in a hospital, sanitarium, or retreat, specially fitted up for the purpose, where the patient can be under the care and control of physicians and nurses having a special knowledge of his disease and experience in its treatment. It is impossible to treat such a case properly at the patient's home, or where he is surrounded and cared for by his personal friends. This may be considered a strong statement, but I make it without hesitation. In the first place, no such patient can be trusted to carry out even the plainest directions in the absence of the physician; and this not because of any inherent depravity in the man, but because the effect of the drug has been to make him in greater or less degree irresponsible. If the case has not progressed far enough to produce this result, then it is not a serious case, in the sense in which I am considering it. It does not follow, however, that either the patient or his friends recognize this fact. Indeed, they will both probably deny it — the patient almost surely so. Nor can his friends be trusted, except in very rare instances, to carry out these directions, for they are likely to be influenced by his appeals, out of pure kindness of heart. But even if

they could be trusted implicitly, they have not the knowledge which is necessary. Drug diseases are unlike all others and require different treatment and care. Until recently they have received no attention in schools or text-books, and the family physician does not wish to assume their care, knowing it to be something entirely outside his experience.

Nevertheless, it would be going too far to say that no one can be cured who cannot command the resources of a sanitarium. With a faithful physician, judicious friends, and a patient who honestly desires to be cured, much may be done even at home, and under circumstances in some respects unfavorable. Quite recently I have had the oversight and directed the treatment of a very serious case of morphine addiction, at the home of the patient, under circumstances such as I have named, with results which were finally satisfactory, but much less speedily and easily secured than would have been the case in a well-equipped sanitarium.

The cases which I have designated as drug diseases may be broadly classified as alcoholics and narcotic *habitués*. Between the two classes there is a broad line of demarcation, both as to symptoms and in the manner of treatment. The alcoholic needs close watch and vigorous treatment for a few days. Then, if properly managed, the worst is over; the craving disappears, despair is succeeded by hope, and discouragement is followed by enthusiasm. But the way of the narcotic *habitué* under treatment is beset with difficulties from the beginning to the end. Snares and pitfalls are on every side. In addition to the strictly medical treatment, he requires constant companionship, sympathy, and encouragement. He must be handled with gloves, but there must be an iron hand beneath the glove. Months of abstinence and apparent health are often required before his mental balance is restored and his physical soundness assured. Not until at least a year has passed, under favorable circumstances, is it safe to look upon him as really cured, and to expect that his cure will be permanent.

Notably among all the professions, physicians are the most prone to the use of narcotics; or it may be that they are more anxious than others to be freed from their bondage, and so come more often for treatment. Certain it is that in the statistics of most institutions for the cure of narcotic *habitués*, physicians form a larger proportion than any other single class.

The remedies used in the treatment of drug *habitués* vary according to the conditions to be overcome and the objects to be attained. In alcoholics, for the purpose of toning up the system of the drunkard to such a pitch that it will no longer demand alcohol, for eradicating the cravings of the diseased appetite, and even of replacing it with a sense of disgust, strychnine stands *facile princeps*. To attain this end it is best given both hypodermically and internally, to the extent, all told, of one-fifth or one-fourth of a grain per day. When given internally it should be combined with other remedies to modify its action and play important but subordinate parts, such as acting upon the bowels, liver, and kidneys, and lessening the irritability of the nervous system. The advantages of hypodermic use are: (1) that a more immediate, direct, and positive effect is secured thereby; (2) that it brings the patient under the eye of the physician at frequent intervals; and (3) that it enables him to vary the dose and even the composition of the remedy used without the knowledge of the patient. The majority of patients, when treated in this way, lose all desire for drink within a few days. Only occasionally is there a hard case met with, who is resolved to drink as long as he can, and in which it becomes necessary to substitute one-tenth of a grain of apomorphine for the usual strychnine injection, at the time of taking a drink. The effect of this is only temporary, and has nothing to do with the real cure of the disease. Not so with the strychnine, however, whose effects are as positive and permanent as can be secured from any drug. Indeed, it comes very near to being a specific for

alcoholism. A good illustration of the positiveness of its effect was furnished by a patient whom I treated in the summer of 1877. He was a professional man, forty years of age, who had been drinking almost continuously for six months, during which time he had suffered from several attacks of delirium tremens, as he also did during the first seven days of his stay with me (see *American Therapist*, November, 1897). Two weeks after his recovery from this attack he expressed a strong desire to make a trip to Boston. Of course this was a most unusual and improper thing for a patient undergoing treatment for alcoholism. Nevertheless, as his stay with me was entirely voluntary, and, moreover, as I was confident he had lost his desire for liquor, I consented, and sent a trusted attendant with him to the city. At night the attendant returned alone, the patient having at the last minute announced his intention of staying over night. Somewhat uneasily, I confess, but by no means discouraged, I awaited the result. The next afternoon he returned alone, clear-headed, sober, and satisfied. His night had been spent in the saloons where he had formerly drank, in company with his old companions, watching them drink, treating them indeed, but drinking nothing himself, for the best of reasons, that he had lost all desire for drink — a condition never before met with in his experience. He had been suspicious and dissatisfied before, not believing, as he said, the stories he had been told about the effect of the treatment in taking away his appetite. He had planned the trip for the express purpose of testing himself, to see whether he really could let liquor alone when it was before him. He came home satisfied, was discharged cured in due time, and has remained sober ever since.

I know of no drug which exercises anything like a specific effect upon the craving for opium and other narcotics. Nevertheless, in the patients whom I have treated by the method of rapid withdrawal, while the system is under the influence of large doses of the bromides, with other sedatives and hypnotics

during and closely following the period of withdrawal, succeeded by moderately large doses of strychnine, I have always found the craving to disappear, and with proper care not to return. Nevertheless, the ex-opium *habitué* is likely ever afterwards to find in pain and debility, fatigue and nerve strain, shrill-toned voices calling loudly for opium for their relief. In both alcoholic and narcotic *habitués* there is therefore an imperative necessity for a post-active stage of treatment, during which the patient, while relieved from the necessity of drug-taking, should be surrounded by favorable circumstances and hygienic conditions, in which undue nervous, muscular, and mental strain should be avoided, the body built up, the mind strengthened, and the whole system habituated to living without alcohol or narcotics. If practicable this stage of the treatment should be conducted by the physician, while the patient is yet under his eye and care. In many cases, however, the patient is unable or unwilling to remain long enough for this purpose, and the physician can only impress upon him the course which he ought to pursue, and leave with him the responsibility of following the course marked out.

I have spoken of the diseased appetite, the unnatural craving, as the cause of the continued use of alcohol and narcotics, and of the necessity for its removal. But there is a cause back of this, that which first led to indulgence in these drugs, when as yet there was no unnatural craving, or which in some cases was itself the cause of the craving. In those cases in which it is possible to find this cause, and remove it, the result is most satisfactory. For example, where opium or morphine has been taken for the relief of pain, as in neuralgia, if the underlying conditions which cause the neuralgia can be removed the outlook becomes thereby decidedly more hopeful for continued freedom from morphine using. In a case reported by me in the *Journal of Inebriety* for January, 1898, the cause of excessive drinking was believed to be irritation

of the cerebral cortex, caused by pressure from a depressed bone. The bone was removed, the pressure relieved, and the desire for drink ceased. In several other cases which have come under my care I have believed the underlying condition which called for the anesthetic action of alcohol for its relief to be a serious valvular disease of the heart, which it was impossible to remove. Some one has reported a case in which a bullet encysted in the lung tissue was believed to produce a similar result. In all these cases the prognosis is bad. Where liquor has been taken first as a medicine, it is necessary to impress upon the patient the fact that there is no disease or condition which is commonly treated with alcohol which cannot be treated as successfully without alcohol. Or if the physician himself has not yet reached this conclusion, he can at least assure him beyond all question that for one who has once been a drunkard the use of alcohol in any form, even as a medicine, is forever afterwards unsafe and must be avoided. When evil companions and fast living have been the exciting cause of inebriety, a change in the nature of the man, in his associates, and in his objects of pursuit, must be accomplished before there can be any reasonable prospect of continued sobriety. In short, there is a need of adding reform to cure, in order that either may prove permanent.

The results of the medicinal and hygienic treatment of drug diseases are eminently satisfactory, when compared with like results in other diseases. In a very large proportion of cases the disease can be cured, and entirely cured. Most cases of relapse, indeed, are due not to any lack of thoroughness in the cure, but to the continued operation of those causes which first led to the indulgence. If, however, we follow the popular idea, and consider as permanently cured only those cases which never return to the use of the drug, then, if we are to judge from the statistics of a large number of institutions, the proportion of permanent cures will vary from thirty-three and one-third to fifty per cent., and will be nearer the former than

the latter figures in most cases. This may seem to the reader like a very moderate percentage of permanent results; and so it is, indeed, when compared with Keeley's claim of ninety-five per cent. of cures and no relapses. It has, however, the advantage of at least approximating the truth — an advantage which it does not share with the claims of the so-called gold cures. Furthermore, it must be remembered that by no other method of dealing with the drunkard and the narcotic *habitué* is it possible — as shown by the history of temperance reform from the days of the Washingtonians down to the present time — to secure even continued sobriety in more than a very minute proportion of those who have once been confirmed drunkards or narcomaniacs.

It may be noted, further, that the proportion of relapses varies greatly according to the different classes of patients treated, and the degree of mental control and moral responsibility of which they are capable. If we grade men according to their occupation, education, social, financial, or moral standing, we are sure to find that the lower in the scale the patients treated, the larger will be the proportion of relapses, while the higher the standing of any individual patient, the greater is the probability of his persistency. No doubt the elements which underlie these varying proportions are in the main those differences in physical constitution, mental characteristics, and moral standing which lead in turn to their differences in occupation, education, and mode of life. The better a man's mental balance and force of will, the more apt is he to continue in a normal course of living, when once he has been restored to a normal condition.

In all drug diseases the moral nature is largely involved, and the question of reform is intimately connected with that of cure. The drug *habitué* lives entirely on the sense plane, and it is time wasted in treating him, unless he can be aroused to desire a higher order of life. Time wasted, not because it is impossible to cure him, but because he will be sure to re-

lapse. The man himself must have *the will to stop* before any permanently good results can be expected; and when he has once stopped, and been restored in so far as is possible to a normal condition, he must have *the will to abstain* totally and forever from the drug which he has abandoned, and all others of similar nature.

DELIRIUM TREMENS AND TYPHOID FEVER.

Delirium tremens may be confounded with typhoid fever, or both these conditions may exist in the same persons, as illustrated by a remarkable case reported by Dr. J. M. DaCosta of Philadelphia.

The patient, a bartender, when admitted into the hospital was in a condition of delirium suggesting delirium tremens. The man was so delirious during the night, as well as during the day, that he had to be strapped to the bed. Temperature, 101; tongue tremulous when protruded, and coated in center; pulse, 110, and of fair volume; constant action of lower jaw; abdomen swollen, and veins distended, but no dropsy; liver increased in size, particularly left lobe; spleen not much enlarged; Widal test reaction and is positive; hemorrhage from bowels, amounting to about a quart of blood.

There are two distinct possibilities in this case. First, delirium tremens with hypertrophic cirrhosis of liver. The hemorrhage may be the result of this. In favor of this view is the fact that patient is a bartender, and during a lucid interval admitted that he was on a three weeks' debauch; also character of delirium.

Second, typhoid fever, the hemorrhage coming from intestinal ulcers. The Widal test is in favor of this view; also continuance of fever, though not high. This is not characteristic of delirium tremens or cirrhosis of liver.

There is no doubt as to delirium tremens and cirrhosis of liver in this case, and Dr. DaCosta concludes that typhoid fever existed in addition. Probably the little water he drank during the debauch was not the purest, and in this way the patient received the typhoid bacilli.

TREATMENT OF INEBRIATES.

BY A. M. ROSEBRUGH, M.D., TORONTO, CANADA.

In the June number of the *Canada Lancet* I am criticized for not favoring the Keeley method of treating inebriates, for not visiting Keeley Institutes in the United States, for recommending the utilization of local hospitals for the treatment of inebriates, and also for suggesting the appointment by the Government of an inspector of inebriate institutions.

From the character and tone of this communication it is very evident that it was neither written by a medical man nor by a Canadian, and that the writer is more concerned for the interests of the company controlling certain proprietary remedies than for the interests of the unfortunate inebriate.

Although a reply seems almost superfluous under the circumstances, it may possibly serve a useful purpose if I should state some of my reasons for not favoring the Keeley treatment.

A little over a year ago a lady called upon me to secure my interest in the Keeley treatment for inebriate prisoners. She was fortified with a number of documents and publications that placed the Keeley treatment in a most favorable light. I was so well impressed with her presentation of the case that I took some trouble to have her name placed on the programme for a paper to be read on the subject before the National Conference of Charities and Correction which met in Toronto in July last, notwithstanding that the programme had already been arranged for. I spoke favorably of the Keeley treatment to a member of the Ontario Government, to the Inspector of Prisons, as well as to the members of the Prisoners' Aid Association.

During this time I accepted the statistics furnished me as trustworthy. After a careful investigation, however, I was forced to the conclusion that if not absolutely inaccurate, they were at least misleading. For instance, it is claimed that by the introduction of the Keeley treatment in the branches of the United States Military Homes for Disabled Volunteer Soldiers, from eighty per cent. to ninety per cent. of those taking treatment for inebriety are permanently cured of their inebriety. I have letters from three of the surgeons of these branches. The first stated that the Keeley treatment was never used in the Home with which he was connected, as they found other treatment quite as effective. The other surgeons state that although the environment of the soldiers in these homes was most favorable to reformation while taking the Keeley treatment, special privileges being granted to Keeley "graduates," yet not more than from twenty per cent. to twenty-five per cent. appear to be permanently reformed. One of these surgeons puts the proportion of "cures" at twenty-five per cent., and the other at only twenty per cent.

Again, it is very strongly claimed and maintained by the Keeley Company that no deleterious drugs are used in the Keeley treatment, hence no possible harm can come from said treatment. Upon looking into this phase of the question, however, I found that this claim is as stoutly denied. Dr. B. D. Evans of the New Jersey State Hospital for the Insane published in the *Medical News* a report from thirty-seven physicians in the United States — physicians mostly connected with asylums for the insane, and in no way affected by the rise or fall of the Keeley stock — regarding the after-effect of the Keeley treatment. There were 156 cases of relapse, eighty-eight cases of insanity, two cases of suicide, and eleven deaths soon after taking the treatment. Allow me to quote Dr. Evans' own words: "We find in the table eighty-eight cases of insanity following the Keeley treatment, eighty-three of them reported by thirty-seven physicians. In about

seventy-five per cent., hereditary predisposition to insanity is denied, and in about ninety per cent. there was no manifestation of mental obliquity, except a morbid appetite for alcohol, previously to taking the Keeley treatment. A large number exhibited symptoms of insanity within a few days after being discharged from Keeley Institutes as cured, and a few went almost directly from the "Institutes" to institutions for the insane.

"There were 158 relapses which came under the care or observation of twenty-six physicians. A large proportion of these were in broken-down health, which they attribute and trace to the effects of drugs taken while in the 'Keeley Institutes.' Of these relapses, a goodly number suffered from nervous prostration and insomnia, which did not exist previously to their course of treatment.

"A group of eighty-eight insane men is not a glowing testimonial to any system of treatment, whether it be systematic 'Jabbing' or 'doping,' or what not. And when these disastrous results follow so closely on the drugging, and the testimony is so direct and pointed as to the cause, the duty of every physician who wishes to uphold the honor and dignity of his profession is plain.

"The 158 relapses were only learned incidentally, and were recorded with the more serious phases of the subject; yet when we consider the fact that this comes from only twenty-six observers, it is fair to presume as to the magnitude of the failure that really does follow this form of quackery, that is widely advertised as being endorsed by leading physicians, ministers of the Gospel, etc. It is also reasonable to presume that not one tithe of the cases of insanity, nervous disorders, and suicides which follow closely in the wake of the Keeley treatment ever sees the light of even a newspaper report."

I also found that at the Washington Home, Boston, during the last few years fully fifty per cent. of the patients have taken some form of "Gold Cure" treatment, and at the

Walnut Lodge Hospital, Hartford, these cases amounted to seventy per cent., while fifty per cent. have taken the Keeley Gold Cure; some of these have taken the "Keeley Cure" several times.

While on a visit to the Massachusetts Reformatory for Women last winter, I asked the lady superintendent if she had had any experience with, or knowledge of, the Keeley treatment. Her reply was to the effect that from what she had seen of the results of the treatment it was far from being satisfactory. I put the same question to the secretary of the Massachusetts Prison Association. He said: "I have known scores to take the 'Keeley Cure,' but I know of only one case where the cure was permanent." On the other hand, on asking the secretary of the New York Prison Association the same question he said, in effect: "The Keeley cure is all right, but the treatment of Dr. — of —, Ont., is quite as good. Don't bother about the Keeley treatment."

The Rev. Dr. Buckley, editor of the *Christian Advocate*, New York, through physicians and clergymen, obtained the results of treatment of 534 cases of inebriety in "Keeley Institutes." Of these, 251 relapsed within the comparatively short period of nine months, thirteen became insane, eleven died, and two committed suicide.

Your correspondent finds fault with me for not visiting "Keeley Institutes" in the United States. I went where I had reason to believe I could obtain reliable information, and I was not disappointed. I saw Dr. Lett of Guelph, Dr. Crothers of Hartford, Conn., Dr. L. D. Mason of Brooklyn, Dr. Hutchinson of Foxboro, Mass., and Dr. Ellsworth of Boston. These gentlemen have attained an eminent position in their specialty and they have made valuable contributions to the literature of the inebriety question, and, moreover, their practice is in accordance with the tenets of legitimate medicine. I did, indeed, visit the "Keeley Institute" in Toronto, as well as two other so called "Gold Cures," one in Canada

and one in the United States, and although I was most courteously treated by the gentlemen in charge of these institutions, the amount of scientific information vouchsafed could be put in a very small compass. As already intimated, I had correspondence with the Keeley Company at Dwight, Illinois, and I had the Keeley literature and their so-called statistics placed at my disposal.

Under these circumstances I fail to see any advantage in visiting the individual "Institutes." I intended visiting some of the United States Military Homes where the Keeley treatment had been in operation, but I ascertained that the Keeley treatment had been abandoned in all these soldiers' homes, and that representatives of the Keeley Company or Keeley Institutes had been prohibited giving treatment to the inmates of these military homes. I may say that I obtained this information from the "Report of the Board of Managers of the National Home for Disabled Volunteer Soldiers," 1897, page 194. The publication was kindly sent me by Gen. W. B. Franklin of Hartford, Conn., the President of the Board. This does not look like an endorsement of the "Keeley Cure" by the United States Government. I may add here that I also failed to find that the Keeley treatment is in use in any penal institution anywhere, although the Keeley Company claim that such is the case.

I am, on principle, opposed to the adoption of proprietary remedies. Had I found that the representations of the Keeley Company could be substantiated, that the remedies were harmless, that their statistics were reliable, and that eighty or ninety per cent. of their "graduates" abstained permanently from intoxicants, I would have felt it to be my duty, in the interests of humanity, to report favorably to the adoption of the Keeley treatment for the relief of pauper inebriates and inebriate prisoners. For seven or eight years the Prisoners' Aid Association has been urging the Ontario Government to establish one or more reformatories for in-

briates, but the Government hesitates to do this on account of the very large expenditure necessary both for buildings and for maintenance. It can readily be seen that this expenditure would be avoided if eighty per cent. or ninety per cent. of prisoners and paupers can be permanently cured by a course of four or five weeks' treatment.

Unhappily, no treatment has as yet been devised that can effect such a desirable reformation. Had I found that the "Keeley Cure" could accomplish this, I would gladly hold up both hands for its immediate adoption, notwithstanding the fact that — as stated to the Prisoners' Aid Association by a representative of the Toronto "Keeley Institute" — the minimum charge would be \$30 per patient.

Bills to establish asylums for inebriates have been introduced into the Legislature of Illinois every year for a long time. They are always killed in the committee. This year a new bill has appeared. It is called the saloon jag bill, and provides for the erection of two hospitals in the State for the proper care, custody, and treatment of inebriates. To pay for the running expenses of the institutions, a tax is imposed on all saloons to the extent of ten per cent. over and above all moneys collected as licenses for selling liquor. Justices of the peace and police magistrates are to judge whether a person is a fit subject for treatment, and they must furnish to proprietors of saloons, at least each six months, a list of those persons sent to the asylums. When a patient is adjudged cured of the drink habit he is to be let out on parole, and if he again indulges his appetite he is to be immediately sent back. If the saloon keeper sells liquor to a habitual drunkard he will be heavily fined. It is claimed by a number of liquor dealers that it would be cheaper to be taxed to support drunkards than to pay judgments obtained by relatives of men to whom they sell too much "fire water."

WHAT CLASS OF INJURIES TO THE HUMAN
BODY DEPENDENT ON VIOLENCE ARE
CAUSED BY ALCOHOLIC EXCESSES?

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Anyone who has had a surgical service in a general hospital well knows that among adults a considerable proportion of the cases coming under his care, of a grave traumatic character, are either immediately or remotely the result of that curse of mankind, the excessive indulgence in alcoholics.

In order that we may the better appreciate how the lethal effects of alcohol operates in these cases it becomes necessary that we should first understand what the pathological action of this chemical is.

Alcohol in large or repeated doses simultaneously acts on the brain and spinal cord, with varying intensity and manifestations in different individuals, and in the same individual, under various circumstances.

Its most constant and unvarying property is to weaken the will power and the faculty of reflection and judgment. Loss of control of impulse and perversion of the reasoning faculties are always among the more dominant features of alcoholic intoxication. Carried to an extreme degree the unbridled frenzy of passion is set loose, reason is dethroned, and the man or woman is an irresponsible maniac.

Alcoholic libation carried to the point of inebriation act with great energy on the nerves of special sense and the spinal.

Vision is dimmed, hearing is obtunded, anesthesia sets in,

the reflexes are palsied, and ataxia of the voluntary muscles is always present when full inebriation is reached. Finally, when very large quantities of intoxicants are imbibed, ataxia, or want of muscular control, is succeeded by the unconscious state and paralysis.

From the foregoing very brief and incomplete account of the toxic and paralyzing action of alcohol on those central ganglia which preside over all the mental actions of man and on the nerves which animate function and vitalize muscular action, it becomes at once evident that the category of accidents and of physical injuries, trivial, severe, or mortal, sustained or inflicted under alcoholic passion, paresis or paralysis, must indeed be of diverse and colossal proportions.

Sundays and holidays provide the hospitals with a large crop of surgical cases, the primary etiology or cause of which is alcoholic imbibition.

Murderous wounds, as stab, gunshot, and concussive, are inflicted under the frenzy of alcoholic excitement; fractured skulls, dislocated joints, broken bones, bruises, or lacerations of the soft parts occur from the same cause, or from loss of or imperfect control of the muscles. Probably if the full truth were known the immoderate use of alcohol is responsible for the greater number of serious collisions of the trolley car, the bicycle, or vehicle, especially on Sundays and holidays.

In my own experience, in an active surgical service in hospitals, I am satisfied that alcohol is responsible for the great preponderance of grave surgical cases on the non-working days of the year.

With a man's faculties blunted and his powers of locomotion but imperfectly under control he is oblivious of danger, and when it is impending is not always able to escape it, and therefore we marvel, not why there are so many accidents, but why there are so few.

Alcohol augments the mortuary list in extremes of climate or season. In the summer a large number of the most serious

cases of insolation ensue through over-indulgence in alcoholic beverages.

As the fierce rays of the sun beat down on the unfortunate victim he becomes conscious of a sense of oppression, when he resorts to a "bracer," probably in our time and country to cool lager, ale, or some of the fabricated "cocktails." A temporary sense of exhilaration follows, the libation is repeated again and again, until the lethal action of the stimulant and the intensifying effects of coloric overwhelm him. Perchance the victim may drag himself to his home or into some byway before he sinks into unconsciousness.

The resources of art can do but little for these cases, because the medical attendant is confronted by a mixed pathological state; the coloric fever may be readily reduced, but the system is surcharged with a poison which we may not be able to eliminate.

Many of the worst falls and frostbites in winter result from the alcoholic state. One drinks and drinks of pungent stimulants "to keep warm," as is said, or rather to benumb the sensory nerves; but the depressing influence of the freezing blast is in no manner mitigated, and alas! should the unfortunate in his stupid state step aside to some sheltered place the sleep of death may set in to close the scene. In less grave cases the anesthetic action of alcohol so obtrudes sensation that while the free drinker enjoys a most grateful sense of comfort, his hands or feet may be frozen stiff.

Excesses in alcoholics lead to the necessity of surgical intervention only through their influence on the nerve centers, deranging the mind and inhibiting or enfeebling nerve conduction; never by any specific or local action on an organ or structure.

This has long been noted, although everyone knows, that confirmed drinkers are bad subjects for surgical operations, as shock, collapse, or delirium follows with them, in a far greater ratio than in the temperate or total abstainer.

In forensic medicine the influence of alcoholic excesses is given extensive study. That phase of it which deals with traumatism or injuries is of special concern to the surgeon or practitioner, because in so many instances his testimony is often mainly depended on, when the question of responsibility or irresponsibility is raised. A man is found on the sidewalk or roadside with a fractured skull, in an unconscious state; one has sustained a fatal stab wound, has been crushed by the street cars, or has committed a homicide, or attempted suicide. In these and many other similar cases the proof of the presence or absence of alcoholism is often of the greatest importance. Especially is this so, since the confirmed alcoholic habit has come to be regarded by many of our most eminent alienists as a disease which renders the afflicted as irresponsible agents. This view of late years is coming to be recognized and shared by the courts, who regard a homicide, acting under alcoholic influence, as temporarily *non compos mentis*.

The question arises, should we ever, while one is grossly intoxicated, take advantage of the anesthetic state to manipulate parts carefully, with a view of clarifying diagnosis, or even perform a surgical operation?

For the former, certainly, but the latter in some instances is doubtful.

While one is intoxicated, dislocations may be reduced or fractured bones set, but if a limb is so mangled that the question of amputation is raised, we have no right to proceed and sever the limb until reason is restored and consent is given.

The above aspect of the alcoholic question is one of important consideration in many medico-legal cases. Our late lamented confrere, the distinguished New Jersey surgeon, Dr. Isaac N. Quimby, came to his death through the severe strain and exposure incurred while defending himself against the extortionate claim of a tenant who sustained an injury on his premises, while, it was alleged, she was in an intoxicated state.

These civil actions in our time of popular government and a political judiciary for every conceivable sort of an injury, imaginary or real, are becoming so common and so oppressive that the owners of property are in constant peril of having their small inheritance, or perchance the earnings of a lifetime, swept away by a single suit for damages.

Was the plaintiff intoxicated at the time of injury, was it then through contributory negligence, and if so, death resulting, what role, if any, did the alcoholic state play as a factor in causing it, through its operations on the system?

These questions are often very difficult to answer, indeed, although under many circumstances we may gain much valuable knowledge by a proper investigation and a critical examination of the injured. Caution must be observed, however, that in our connection with the case an error may not be committed and an injustice imposed.

For example, it is a very general custom with the laity, when one suffers from syncope or shock, from any cause whatever, to at once administer alcoholics with an unstinted hand.

Hence, should one have lost much blood or be very young, a comparatively small quantity of liquor may produce marked intoxication.

It is my experience in hospitals that there were few patients admitted with fractures of the limbs who had not been given alcoholics before they were sent in. But in these it is not exceptional to observe positive symptoms of intoxication, unless there was evidence of free drinking before injury.

But in quite a few of them injured, when we see them early, they are boisterous, hilarious, or unmanageable, and present other indubitable evidence of pre-traumatic intoxication.

If we are in doubt, then, we should note the odor of the breath, the state of the pupils, the condition of the reflexes; besides, if the patient be in a conscious state, press for accurate information from himself if possible.

comes paralyzed; that is, incapable of transmitting impressions through its submerged part. Similarly, if an animal absorb into its circulation a certain quantity of alcohol within a given time, the nerve centers and the peripheral nerves become paralyzed. This may be called the direct effect of alcohol. It has also been ascertained that the impregnation of the blood with alcohol interferes with its absorption of oxygen. It thus becomes unfitted to support healthy nervous function. Under these combined influences, the nervous tissues, especially those of the central organs, become more and more unfitted for the painless performance of their proper functions. These changes progress with a rapidity proportionate to the quantity of alcohol used and the susceptibility of the subject to its influence. These effects are counteracted in part by the elimination of portions of the alcohol from the system, which goes on by the medium of all the excreting glands, especially the kidneys, skin, and lungs. It is important to bear these facts in mind, in order to appreciate what is meant by cure.

Inebriety is more quickly developed by the moderate use of alcohol in neurasthenics, in social drinkers, who eat too much and exercise but little, in those who are much exposed to the depressing passions, those who undergo great fatigue of body or mind, especially if unsuccessful in their pursuits, those who inordinately indulge the passions of anger and lust, and, finally, those who habitually swallow patent medicines, whose chief ingredient is alcohol. There is in the mind of every drunkard an immutable association between stimulating liquors and the relief they afford to all the unpleasant sensations, physical and mental, which are inseparable from the every-day life of one who has learned to lean upon the alcoholic crutch. The accustomed drink, when taken, produces an instant change from pain to pleasure, from despair to hope, and transforms this thorny, rugged wilderness of a world into a paradise. To cure such an individual, we must break up this association, and convince him by actual sensations that his

remedy has lost its effect and that he no longer experiences the same pleasurable sensations.

In discussing the treatment of this disease, it is important to remember that the general principles of treatment applicable to any disease also apply here. Diseases are cured, when they can be cured, by their natural biological evolution. Our ordinary therapeutic methods consist in removing the cause, then putting the organism in such a condition that the *restitutio ad integrum* may take place. We suppress pain, we modify functions, we let diseased organs rest, we calm fever, we retard the pulse, we induce sleep, we increase secretion and excretion, and acting thus, we permit Nature, the healer, or, to speak in modern language, "we permit the activity of the forces and the properties inherent in the biological elements to accomplish their work."

In the treatment of inebriety, the best results are obtained if the individual be removed from his home and placed among strangers. No amount of contriving can offer the patient the same care at home that can be had at properly conducted institutions, while the moral effect of association with others of his class is not without benefit. The next step essential to a cure will be to discontinue the use of alcohol. This object may be attained either by physical, chemical, or psychical restraint. With our knowledge of modern methods, physical restraint is no longer necessary. Chemical restraint is secured by the administration of drugs, whose primary effect is to create an indifference to both the taste and effect of alcoholic stimulants, so that within a few days the inordinate craving for drink is abolished. This result is said to be secured also by those who practice suggestive therapy. Burnheim, Soltan, Rice, Burr, and many others have secured excellent results by this method. I have had no personal experience with suggestive therapy alone, but, combined with suitable medication, I know that excellent results are secured.

We must remember that a cure consists, first, "in break-

ing up the association in the mind of the drunkard between alcohol and the relief it affords to all his unpleasant sensations." There will then be complete absence of the drink-craving, restoration to normal function, including the will, rapidly followed by a complete change in the physical, mental, and moral condition of the patient, resulting in normal appetite for food, sound, refreshing sleep, and improved nutrition. Morally, the change is manifested in an aversion to the society of drinking companions, pride in personal appearance, a rekindling of love for home and family, with returning interest in business affairs. We know that these changes can be wrought in a comparatively short time, so that the patient may be discharged with the assurance that nature will complete the cure in time. Securing proper environment of the patient subsequent to treatment, upon which depends the permanency of the cure, does not come within the province of the physician.

One of the elements of success in the treatment of inebriety, either by drugs, suggestive therapy, or a combination of the two, is tact in the management of the patient at the beginning of treatment. Elimination is necessary in all cases. Cathartics, diuretics, diaphoretics, and baths must be used as required. The selection of remedies suited to each individual case must depend, not only on the condition of the patient, but the facility with which they can be administered and the certainty of absorption. This brings us to the consideration of hypodermic medication, without which the treatment of inebriety would indeed be difficult, if not impossible. Solutions for hypodermic use, if prepared antiseptically, may be kept several weeks by the addition of boracic acid. Remedies thus used are pilocarpine, theine, nitroglycerine, duboisia, spartein, picrotoxin, and atropin and cocaine combined, the latter possessing a peculiar hypnotic effect which cannot be secured from either drug when administered alone. Strychnia and apomorphia are never used. These remedies,

with the exception of spartein, are used only for brief periods to meet special indications. Thus, spartein and nitroglycerine combined are used in cardiac depression; picrotoxin in cases characterized by excessive tremor; and pilocarpine to assist elimination; sulphate of spartein, on account of its valuable tonic properties, is continued throughout the treatment. Remedies for internal use consist of alteratives and tonics. Recently the gold salts have been largely used, either alone or combined with other mineral alteratives of the class which increases waste. Abundant clinical experience has demonstrated the value of the gold salts in all forms of nervous diseases characterized by sclerosis. These drugs should be administered in small and frequently repeated doses, in solution with a definite quantity of tannin to form tannates, and thus prevent injurious local action, at the same time securing slow absorption and adequate elimination.

Diet, in the treatment of inebriety, is highly important. The administration of proper food at regular intervals, day and night, materially assists in abolishing the drink craving.

I believe that many physicians fail to secure the best possible result in many cases of inebriety because they forget that body and mind are so closely related that when the one suffers the other must share the suffering, and the injury to the physical health, the pathological side resulting from drink, must be accompanied by similar injury to the mental and moral powers. Degeneration of tissue and organic changes in nerve cells are more palpable than degeneracy of morals, a cirrlosed liver more startling than a breach of faith, but the deeper fact, of which the senses take no note, is the more important one, and should be recognized by every physician who assumes charge of this class of cases. The phenomena, to which we refer, often manifest themselves to the quickened perceptions of those who stand nearest the inebriate. Many a mother observes with a heart that grows heavier day by day the signs of moral decay in the character of her son. It is not the

flushed face and the heavy eye, the foul breath, and unsteady gait that trouble her most: it is the evidence that his mind is becoming duller and fouler, his sensibilities less acute, his sense of honor less commanding. Near the close of treatment, during a confidential talk, in which the patient will boast of his splendid physical condition, the physician would say to him; "Yes, you are cured. It is true that you are not now a drunkard; it depends upon yourself whether you ever will be or not. If you could know what was painfully evident to those who love you best, how your character, when you first began drinking, slowly lost the fineness of its texture, firmness of outline, and how your art deteriorated in the delicacy of your touch, how the very atmosphere of your life seemed to grow murky, you would never, for a moment, entertain the thought that a drink would do you good."

AMERICAN MEDICAL ASSOCIATION.

The section of Materia Medica, Pharmacy and Therapeutics of the A. M. A., urges those who desire to read papers in its department at the Columbus meeting, June 6 to 9, 1899, to send on their names and the title of their paper, at once, to the secretary, who is now making up the final programme.

(Signed)

LEON L. SOLOMON,

Secretary,

323 W. Walnut Street, Louisville, Ky.

The man who believes that alcohol is a poison, and total abstinence the only safeguard for health, shows far more knowledge and better judgment than one who thinks alcohol is a food and moderate drinking compatible with health. But the man who denies the disease of inebriety and believes it a moral state which can be changed at will merely expresses his failure to observe and reason correctly by every day's observations.

THE TOXIC EFFECTS OF TOBACCO.

BY GEO. W. CROOK, M.D., VICKSBURG, MISS.

The effects produced by the use or administration of tobacco in any of its forms are almost entirely due to the action of its active principle, nicotine.

The alkaloid receives its name from *nicotiana*, the botanical name of tobacco, so called in honor of Jean Nicot, a French diplomatist, who, in 1560, sent the seeds to France from Portugal as those of a highly medicinal plant.

It has been considered that tobacco smoke owed very little of its potency to nicotine, and more to various combustion products; but as the effects of these vary only in degree from those produced by nicotine, being milder and less rapid in their toxic effects, the symptoms produced are usually considered as due to the nicotine present. As the result of a general acceptance of this idea it has been the effort of some tobacco growers to cultivate the aromatic properties and diminish the nicotine.

The percentage of nicotine present in tobacco varies so largely, according to the different localities in which it is grown, and the methods of curing and analysis differ so materially in the results of their investigation that it is impossible to give a definite statement of the percentage of nicotine found in the prepared leaf. It varies from two to eight per cent.

Adulterations. — Various adulterations are used in preparing tobacco in its different forms: but they, while not entirely inert by any means, play but a very small part in the toxic results of its use. Molasses, licorice, figs, and glycerine

are used to impart a sweet taste and to prevent rapid drying. Common salts and other salts are used for flavoring, and nitrate of potash or soda is sometimes added to increase the combustibility of tobacco used for the manufacture of cigars or for smoking tobacco. Anise and other aromatics are used for their flavor, and smoking tobaccos have their odor increased by the use of cascarilla bark and Tonqua bean, which is also used in scenting snuffs. These additions, except those for odor, are made in the form of a liquor in which the leaves are steeped. Lime is sometimes mixed with snuffs to increase their dryness, and these, of course, have an irritating effect on the mucous membrane of the nasal passages or gums, according to the method of its use.

Nicotine, $C_{10}H_{14}N_2$.— This alkaloid was first isolated by Posselt and Reimann in 1828, and is a colorless, transparent liquid having a strong tobacco odor, which is increased by the application of heat. It has a sharp burning taste, and is very soluble in water, alcohol, ether, turpentine, and fatty oils.

Toxic Effects.— The symptoms of poisoning by tobacco are, primarily, nausea, vomiting, and deathly pallor. The body becomes bathed in a clammy sweat, the surface is cold, respiration is quickened and occasionally followed by tetanus of the muscles of inspiration. The pupils are contracted, which is a curious fact in view of the well-known dilation produced by belladonna, stramonium, hyoscyamus, and others of the solanaceæ. The secretion of bile and saliva is increased, and there is a contraction of the entire intestinal tract. If the dose of nicotine be not sufficiently large to produce a fatal result, secondary symptoms may appear months or even years after beginning the habitual use of the weed. These may be any of the following: Granular inflammation of the fauces and pharynx; possibly from atrophy of the retina there will be loss or diminution of the power of sight, without any external appearance of the organ being affected; there may be various cardiac symptoms: the heart is dilated, and there is

frequent pallor or a livid countenance, aberrations of the sense of sight with appearances of imaginary objects, a dry cardiac cough; pains as of angina pectoris are frequently present, shooting from the heart up to the shoulder and down the left arm or up into the neck; cold extremities, palpitations, feeble and irregular pulse, insomnia and diarrhoea alternating with constipation; facial neuralgia may exist, and the tongue will have habitually a thick whitish coating, and there may be marked irritation of the entire intestinal tract; chronic dyspepsia is frequently seen in tobacco users, caused by the waste of saliva which should be used in digestion.

Action. — Nicotine is very readily absorbed by the mucous and cutaneous surfaces, particularly if the continuity of either be broken. Its ready absorption is easily understood when it is known that fatal symptoms have developed from the mere inhalation of tobacco smoke, a condition in which but a small percentage of nicotine comes in actual contact with the mucous surface.

The primary action of the drug on the spinal cord is exciting, and, in fatal cases, death is due to a rapid paralysis of the respiratory center, without previous excitement, and never due to heart paralysis. Although the heart is markedly affected, the drug does not act on the cardiac muscular structure directly.

Large doses of nicotine cause convulsions both tonic and clonic. The brain may be paralyzed, producing loss of consciousness or loss of voluntary movements after a more or less brief interval of excitement, followed by general paralysis, the spinal cord becoming insensible to irritation from affection of the gray matter of the anterior cornua.

Temperature. — The lowering of the superficial temperature is due to paralysis of the vaso-motor nerves.

Destruction. — It has not been definitely proven that nicotine is destroyed or diminished in any degree by the excretions, but it is supposed to be destroyed in part by the action of the kidneys and saliva.

Snuff. — Tobacco in this form is probably less productive of toxic effects than any other, whether inhaled into the nostrils or applied to the gums in "dipping," as small quantities are used in either case, and there is very little nicotine absorbed. Its use in this form causes redness and some swelling of the mucous membrane, and will, after continued use, result in a hypertrophy of the membrane, particularly if used in the nasal passages, and a constant loss of activity of the olfactory sense.

Cigars and Pipes. — It is in the use of cigars and plug tobacco, either for chewing or smoking, or the use of granulated tobacco in pipes, that produces the most toxic symptoms. In these cases the effect is produced by the absorption of the tobacco in solution, or the nicotine is absorbed from the smoke.

In cigars, the effect comes not only from the partial inhalation of the smoke, but also from tobacco in solution, as the tip of the cigar is moistened by the saliva, and lies in contact with the mucous membrane of the mouth during smoking.

Cigarettes. — The use of these has been condemned as not only the most injurious form in which tobacco can be used, but by some is considered a vice parallel to the use of opium or cocaine. Now, while this is certainly an extreme view, there is no doubt that their habitual use occasionally leads to disastrous results.

In the use of cigarettes the effects are produced by the complete inhalation of the smoke, and in their use the adulterants have more effect than in any of the other forms of tobacco.

In the cheaper grades of cigarettes the lack of natural quality in the tobacco is made up by the use of the various adulterants mentioned; and where the indulgence is excessive, particularly in the growing young, the effects are most marked.

Some effect is produced, too, from the inhalation of the burning paper, particularly if poisonous bleaching agents have been used in its manufacture.

Toxic Dose. — This varies from the small amount absorbed by the individual who smokes his first cigar or takes his first chew to the quantities that have been taken with suicidal intent or administered for therapeutic or criminal purposes. There are very few cases of poisoning by the pure alkaloid. One is interesting, as it is the first instance in which a pure alkaloid was used for criminal purposes. This was the poisoning of M. Fougines by Count Bocarmé and his wife. Another case is on record in which an individual took it for the purpose of suicide. The quantity used in either of these cases is unknown. The amount of nicotine necessary to produce the primary symptoms of poisoning in an individual using tobacco for the first time is, of course, small, and the degree of tolerance acquired by habitual users of the weed will vary according to the length of time they have been addicted to its use, the percentage of nicotine present in the particular brand of tobacco used, and the form in which they use it.

It is apparent that a chewer can acquire a greater degree of tolerance to nicotine than a smoker, as it is so much more readily absorbed when in solution with the saliva, and enters the system in greater quantities. In a smoker the effects are produced by the mere contact of the tobacco smoke with the mucous membrane by inhalation, which is partial when the smoke is only drawn into the mouth, and complete when drawn into the lungs, excepting in the case of the cigar smoker, where some of the tobacco is in solution from the contact of the cigar with the tongue and saliva. Nicotine is one of the most violent poisons known to chemistry, and in doses sufficiently large to act fatally its action is very similar to that of hydrocyanic acid. On the lower mammalia its action is just as rapid and as surely fatal as Prussic acid, and almost equally so in man.

The fatal results that have come from smoking tobacco are probably due to the inhalation of the smoke and its consequent direct contact with the moist mucous lining of the

My own experience has been that when one has been injured in the sober state, if we interrogate, he will explain how it occurred without difficulty. The drunken man may tell us he has been drinking, but how he was injured is often a blank to him and he can throw no light on it.

Hard drinkers rally badly from deep shock. They are prone to delirium tremens after severe operations and injuries, and are very much more liable to septic infection after lesion of the soft parts through the deteriorated state of the blood and tendency to diabetes.

Complications with them, as pneumonia, nephritis, and diarrhea, are common. Their tissues are more vulnerable: congestion tends to run into inflammation; this spreads into heterogenous structures, often running a chronic course. These cases are characterized by a malnutrition or defective tissue metabolism, imperfect assimilation, and defective elimination, all of which makes an impression on the integrity of the machinery of man when subjected to any violent shock or disorganization.

A HOME FOR INEBRIATES.

At the meeting of the Gloucestershire County Council, held on January 9, it was reported that the committee of the Royal Victoria Home, Horfield, are erecting a public institution, under the provisions of the Inebriates' Act, at Westbury-on-Trym, and that they had applied to the council for a contribution. It was stated that the building will accommodate 880 patients, and that it stands on eighty acres of land, the cost of the undertaking being estimated at £20,000. After some discussion, the council resolved to contribute £1,000 towards the institution, conditionally that the county should be entitled to seven beds for twenty-five years at a cost of 6d. each per day. The chairman (Sir J. E. Dorrington, M.P.) added that the committee of the Royal Victoria Home were in negotiation with other counties and probably it would become the reformatory for the southern part of England.

lungs, by which the nicotine is readily absorbed. Death has followed the administration of a decoction of tobacco leaves in enema, either for therapeutic or criminal purposes, and also from its use as a local application to the skin, thus showing that its application in solution is favorable to very rapid absorption.

The effect of nicotine is practically the same as that of tobacco in solution, merely differing in degree.

Dose. — Tobacco infusion has been administered in enema in doses of from 3 ss to 3ij, but toxic symptoms have resulted from much less than this maximum. In many instances a dose of ʒj would be sufficient to produce marked toxic symptoms. By the mouth five or six grains of tobacco are emetic, and anything more will be likely to prove toxic. The alkaloid is so rarely used in therapeutics that it is impossible to tell just what a fatal dose would be, but one-tenth of a grain or over would probably produce very severe symptoms.

Post-mortem Appearances. — None are known which can be directly attributed to nicotine or tobacco alone.

The signs of death from the action of the poison on the lungs have usually been observed. If tobacco has been swallowed in sufficient quantities to act fatally, there will exist some redness of the stomach and intestine. An analysis of the contents of the stomach would detect the presence of the alkaloid where it had been swallowed.

Antidote. — Strychnia, one-twenty-fifth grain of the nitrate subcutaneously, or from ten to fifteen minims of tincture of nux vomica by the mouth.

The timidity of public sentiment concerning the sale and use of spirits is phenomenal. Men without sentiment, on reform questions, become silent and hesitate when the drink question is called up. Only when the injuries from rum become personal in their family and circle are they roused and able to recognize its dangers.

REPORT OF WALNUT LODGE HOSPITAL FOR 1898.

Experience proves beyond all possible question that inebriety can be more successfully treated in small private asylums than in any other way. Here all the conditions of living and the surroundings can be under control and made to assist in restoration; and all the external exciting causes removed, together with the exact application of every remedy and means found useful for the cure. In such asylums each patient is made a special personal study, and all the facts of his life, also the conditions and surroundings which have changed him, can be known, and from this, means and remedies can be given with much certainty.

Experience also points out clearly that the inebriate is largely curable, not by any one drug or specific medicine, but by a great variety of means and measures used with skill at the proper time and place, and adapted to the needs of the case.

The subsidence of the drink symptom and the increased mental and physical vigor enables the person to regain the control of his will power, and with this comes a keener recognition of the sources of his danger, and greater effort to avoid them in the future.

In nearly all cases there are special exciting causes, both known and unknown, the discovery and removal of which is followed by a practical cure. A special study of individual cases shows many causes active in both creating and continuing the drink disease: also as long as these causes continue, the desire for spirits remains, no matter what the treatment. No treatment can be successful except based on an accurate study and knowledge of all the conditions of the life and surroundings of the patient, and the influences which have come down from the past generations, simply because from this knowl-

edge only can be ascertained the means and methods for restoration and cure.

From such a study one can determine whether the inebriety is a symptom of brain and other disease, or some defect in the surroundings and methods of living, or inherited weakness, increased by the poison of spirits; or whether it is poisoning alone, and due to alcohol and its effects.

In private hospitals this special study is most practical, and the results in treatment can be more accurate and scientific.

The yearly history of such work cannot be expressed in a few tables of statistics. These only represent general facts. Behind these are tabulated many defects of body and mind; also injuries from many sources, both from alcohol and other poisons.

While these records are substantially the same as last year, the physical aspect of these cases appear more prominent; that is, the disease symptoms are more numerous and marked in each case. The following are the records of 1898:

During the past year ninety-one cases were under treatment, and eighty-two discharged. Of this number, forty-one were periodical inebriates, twenty-eight were continuous inebriates (or persons who drank every day), three were dipsomaniacs (persons who have delirious impulses and thirst for spirits overpowering every other impulse), twelve were opium and morphine-takers, two were cocaine users, five were chloral, ether, ginger, and other drug-takers.

In the history of these cases, twenty-eight had drinking or inebriate parents, nineteen had inebriate and drinking grandparents, eleven had a history of inebriety in collateral branches of the family, as, for instance, uncles and aunts and cousins in direct line. In twelve cases the inebriety dated from injury and disease, and was due to some physical change of the body and brain; in nine cases, inebriety began from exhaustion and debility and the contagion of bad surroundings;

in two cases no clear history of the origin of the disease could be found.

The ages of these cases were as follows: From fifteen to twenty, three; from twenty to thirty, thirty-six; from thirty to forty, twenty-three; from forty to fifty, sixteen; from fifty to sixty, ten; from sixty to sixty-five, three.

In the social condition, fifty-three were married and living with wives, nine were widowers, twenty-three were single, and six were married and separated.

In occupation, seven were physicians, five lawyers, two artists, one clergyman, five engineers, nine farmers, six clerks, six manufacturers, four druggists, seven spirit dealers, six mechanics, four bankers, six railroad men, three hotel keepers, two barbers, two authors, three speculators.

Of seven women, five were housewives, one a teacher, and one of no occupation.

Of education, twenty-seven had a collegiate training, sixteen a university education, thirty-one had an academic training, and seventeen finished in the common schools.

In the duration of the inebriety, thirty-two had been drinking from five to ten years, twenty-six had been drinking from fifteen to twenty years, and twelve had been using spirits over twenty years.

In former treatment, thirty-nine had taken treatment at "gold cure" asylums, twenty-one had been in hospitals and sanitariums, and thirty-one had never been treated before.

In result of treatment, forty were discharged as recovered, forty-three as temporarily improved and restored; in four, but little or no apparent improvement followed; one died from cerebral hemorrhage, and three were sent to insane asylums.

The limited time in which patients remain under treatment is always a serious obstacle in the permanency of cure. While the legal powers of control are ample, the failures of patients, legal guardians, and friends to co-operate with the physician in continuing the treatment sadly cripples all efforts.

Where patients remain a long time, permanent restoration is the rule, to which there are few exceptions. Those who leave after a brief treatment often relapse and return.

The recognition of this fact by the patient and his friends is difficult, hence they often insist on trusting present appearances with assurances of health and promises of total abstinence for the future. The constant repetition of this mistake is unfortunate for both the patient and the institution.

The work of the past year has been followed along the same lines, in addition new studies of the influence of alcohol on the heart, with muscular measurements and measurements of the senses. The general results of treatment in the past year have exceeded expectations in many ways, and suggested a wider and more practical application of baths with sharp elimination and other methods of treatment. Many cases show a remarkable change from profuse sweating and sharp elimination of the poisons of alcohol and its products. Others improve rapidly from a regular diet and regular hours for sleep and rest. In many, the psychal change, of new thoughts, new surroundings, and new conditions of living, appear to make a profound impression on the organism. Each one of these indications is followed up carefully in the treatment.

As in other departments of science, new means and methods are constantly being tried, and some of them are found practical and useful. As heretofore, the work of this hospital is entirely confined to scientific and practical means and measures. So far, no specifics have been found, or special remedies of unusual application, or drug combinations, which can be called cures. Every possible means are used that can build up and restore the patient to health, and prevent relapse in the future. Each year brings more certainty and exactness, both in the application of appropriate means and the results which follow, and, while the general public may not realize it, the treatment of inebriety is fast becoming as exact

as that of any other remote disease. Its early recognition and treatment in an asylum for a sufficient length of time are the two considerations most essential for cure.

When public sentiment will require and demand this in every case, these drug neurotics will be diminished and a large part of the great alcoholic problem will be practically solved.

The majority of men are averse to the acceptance of new ideas. It is an effort and strain to adopt what is opposed to their previous opinions and experience. Long years of constant reiteration of the new facts must pass before they are accepted. Thus the small minority of those who accept every new truth are always in the ascendancy, and the majority who deny it are descending.

So long as the licensed saloons are permitted to sell spirits to anyone, so long will crime, disease, and pauperism exist. It is cause and effect as clearly as any operations of Nature. Saloons are veritable pest houses, whose presence is a menace to all progress and civilization.

Alcohol was first produced by Albaeasis, an alchemist in the eleventh century. The term alcohol comes from an Arabian word, Alkahol, which was given to an unpalpable powder used on the face, and this substance was supposed to resemble it, hence it was called alcohol.

Abstracts and Reviews.

MICROSCOPICAL CHANGES IN TWO CASES OF
MORPHINE POISONING.*

BY DR. JAMES EWING,

Fellow of Pathology in Columbia University.

CASE I. Male forty-five years, had been addicted to the use of the drug for several years, finally using sixteen grains of morphine hypodermatically injected each day, and had suffered in extreme degree from the general symptoms referable to this habit; was said to have eaten nothing for one week before death. After a very large injection, quantity unknown, was brought to hospital in coma, dying within a few hours with typical symptoms of morphine poisoning.

Autopsy six hours after death. There was moderate fatty degeneration of heart muscle, liver, and kidney. The lungs were very oedematous, and the viscera showed marked venous congestion. The pancreas was very atrophic, being largely replaced by fat. There was considerable oedema of the brain.

Fixation, Lang's fluid, twenty-four hours.

The chief feature revealed by Nissl's stain was marked diminution in the quantity of chromatic substance in nearly all cells of the central nervous system. The chromatic bodies in the cells of the cord, medulla, cerebrum, and cerebellum were very deficient in number, or often entirely absent.

*From Archives of Neurology and Psychopathology.

Purkinje's cells were very faint, showing a few small narrow chromatic bodies very regularly arranged in concentric rings. Nuclear changes, as a rule, were not noted.

In the medullary nuclei there were some cells still retaining chromatic bodies of considerable size and markedly subdivided. In some of these cells the nuclei were shrunken and often eccentric.

The quantity of yellowish granular pigment was much more abundant than usual in most regions of the central nervous system.

CASE II. Female, aged twenty-four years, had been addicted to the moderate use of the drug for a few months only, but was able to attend regularly to her work as dressmaker. In a fit of despondency she took a large quantity of morphine by the mouth and in spite of treatment died twelve hours later with typical symptoms of morphine poisoning.

Autopsy six hours after death. There was extreme oedema of the lungs and marked venous congestion of all viscera, but no other gross lesions of importance.

Microscopical examination. Van Gehuchten's fluid.

The stichochrome cells throughout the central nervous system showed changes which in many respects were peculiar. When examined with a low power these cells appeared to have lost their normal distinctly striated appearance, many appearing profusely and unevenly stained, while their outlines were extremely irregular. When examined with a high power the above peculiarity was found to exist in a marked subdivision of the chromatic bodies, which were enlarged and very irregularly and minutely subdivided. In the medulla the large cells were extensively altered further by the appearance of clefts in the cell bodies, similar to those described in other conditions by Nageotti and Etlinger. In this region, also, the loss of chromatic substance was very uneven, some areas of the cells appearing completely bleached, others showing the minute subdivisions, while in some spots the chromatic masses seemed fused together.

The majority of the cell nuclei were shrunken and markedly eccentric, while the loss of chromatic substance was, as a rule, greatest about the nucleus. About many of the nuclei irregular masses and rods of chromatic substance were heaped.

Throughout the cortex, changes of a similar character were noted. Purkinje's cells of the cerebellum were less affected than the cells of most other regions.

The irregularity in the effect of chromatolytic process, the ragged appearance of the cell borders, the appearance of the clefts, and the frequency of the central chromatolysis associated with eccentricities of the nuclei, are the features peculiar to this case. The last mentioned abnormality is of special interest in connection with the well-known effects of morphine upon the peripheral nerve filaments.

ALCOHOLOGENIC CARDIAC EPILEPSY.

A. Smith applies this term to an epileptoid condition accompanied or preceded by dilatation of the heart. As the state of the heart improves, the epilepsy disappears also. The dilatation of the heart is purely alcohologenic and subsides completely with abstinence from alcohol in some cases, or partially in others, with slight recurrences for a while. In the first group, a slight excess of alcohol above very moderate amounts will induce the attack. In the second group the intolerance to alcohol is not so pronounced. Complete abstinence is the only cure, combined with medication to strengthen the musculature of the heart. — *Munich Med. Worch.*, October 25th.

STUDIES OF THE ACTION OF ALCOHOL ON
GANGLION CELLS.*

BY JAMES EWING, M.D.,

College of Physicians and Surgeons, Columbia University, etc., etc.

The effects of alcoholic poisoning in the ganglionic cells have been investigated by several writers.

Vas first described the alterations induced in the ganglion cells by chronic alcoholic poisoning. After the daily injection of moderate amounts of alcohol, during a period of six to twelve weeks, a state of general malnutrition was produced in dogs and rabbits, and in this condition the spinal stichochromes and spinal and sympathetic ganglion cells, in areas of irregular distribution, showed central chromatolysis or the lesions described by Friedmann as "homogeneous swelling." These changes he regarded as the result of the general malnutrition of the animal and not of a specific action of alcohol.

Dehio describes the changes in Purkinje's cells after acute fatal poisoning by alcohol administered to rabbits through the stomach. In very acute cases no definite alterations were observed. When the animals lived eighteen to thirty-six hours, characteristic changes were noted, affecting the whole or a small portion of the body. The chromatic network of Purkinje's cells was replaced by many fine granules irregularly arranged, while the achromatic substance stained diffusely light blue. The dendrites were usually unaffected, and many normal cells were found. No definite lesions were found in other parts of the central nervous system.

Andriezen, investigating the lesions of alcoholic insanity by Golgi's and Nissl's methods combined, found by the latter,

* The following selection is from *Archives of Neurology and Psychopathology*, Vol. 1, 1896.

COCAINE ADDICTION AND ITS DIAGNOSIS.

BY STEPHEN LETT, M.D., M.C.P., AND S. ONT.

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Since the introduction of cocaine, some fifteen years ago, and its stimulating action when taken into the human system has become known, its seductive qualities have produced a widespread evil, resulting in a malady known as cocaine addiction. The importance of an accurate diagnosis in this malady is second in importance only to that of opium addiction, and must be sought for in the physical and mental symptoms as well as by chemical analysis of the urine.

Most of those addicted to the use of the drug are neurotics, and like many such are always on the outlook for some medicine or stimulant to quiet their unstable nervous organization; these fall an easy prey to numerous proprietary medicines and medicinal wines, which owe their potency to the Erythroxylon Cocoa or its alkaloid Cocaine, and many an habitué can date the advent of his malady to these apparently innocent but subtle nostrums. The dentist, rhinologist, and general practitioner have, by their prescriptions and applications, contributed their quota to the number of habitual cocaine users. The alcoholic inebriate and opium habitué have also grasped at this once lauded panacea for the cure of their affliction, with the almost invariable result of failure to cure their disease, and usually resulting in a double and sometimes triple addiction.

The quantity of the drug consumed by those accustomed to its habitual use varies between wide limits. I have met with cases taking only a fraction of a grain, whilst in others it

in the cortical cells, moderate chromatophilia of the cell body, swelling and indistinctness of the chromatic masses, thickening of the intranuclear network, and increased pigmentation.

Berkley investigated the lesions of alcoholic poisoning in the cortical nerve cells by Golgi's and Nissl's methods combined. Golgi's method revealed a distinct shrinkage of all cortical cells, varicose atrophy of the dendrites, disappearance of the gemmulae, and a roughening of the cell body. After Nissl's method the cell bodies stained more deeply than in normal specimens, the chromatic bodies were indistinct, the achromatic substance was moderately chromatophilic, and the nuclei contained numerous fine granules, and the nucleoli were much enlarged.

Stewart verified the results of Dehio, injecting alcohol into the peritoneal cavity of cats. Both in Purkinje's cells, and less evidently in the spinal stichochromes, chromatolysis, most marked peripherally, and diffuse staining of the achromatic portion of the cells were observed.

In two examples of fatal alcoholism in which very striking cellular lesions were found throughout the central nervous system.

These cases were males, aged twenty-five and twenty-nine years. They died after prolonged periods of intoxication, lasting from six to twelve weeks respectively, in the typical condition of delirium tremens. The temperature rose before death to 104 and 105. One case was complicated by acute degeneration of the kidneys, the other by terminal catarrhal pneumonia of slight extent. These cases represent the ordinary conditions found in fatal alcoholism in the human subject, and in spite of the complication, some of which are always present in such cases, are believed to represent in considerable purity the lesions produced by prolonged alcoholic poisoning of the human subject. No such lesions have been found by the writer after fatal nephritis, pneumonia, or as a result of a temperature of 106.

mounted up to sixty grains in twenty-four hours, and in one instance the limit was marked by the enormous amount of ninety grains a day.

The mode by which the drug is taken is as variable as the quantity consumed. It is taken by the mouth, sprays, snuffing, washes, etc., but chiefly by means of the hypodermic syringe.

The early physical manifestations of the malady are somewhat obscure and difficult to detect. The patient has perhaps been toying with the drug for a considerable period before a daily dose becomes a necessity. The early symptoms may, however, be noted as follows: A condition of unnatural buoyancy of spirits and self-confidence, exalted mental action with an abnormal capacity for mental and physical exertion, wakefulness, loss of appetite, and apparently little or no necessity for food; bright and glistening eye with dilated pupil, which will not contract under the stimulus of light; the secretions are not dried up as in opium addiction, but the reverse usually obtains. As the disease becomes more established, most of these symptoms are accentuated; but, unless the stimulation is kept up by larger and more frequently repeated doses, intense physical and mental depression set in, leading to severe nervous agitation, fear of impending death frequently accompanied by lachrymosis; nutrition soon becomes impaired, accompanied by emaciation and anemia; sunken eyeballs with dark areola round the eyes, prominent cheek bones, and general pallor makes the subject a most ghastly spectacle. As the malady becomes more chronic, mental symptoms in the form of hallucinations and delusions supervene. Persons seen or heard at a distance are construed into bands of enemies plotting to rob, physically disable, or murder, and as a result the patient makes complaints and lays charges against innocent persons. All sorts of firearms and other deadly weapons are secreted within easy reach as a protection, and are apt to be used with serious results. Apartments are barricaded to

prevent imaginary enemies pouncing in to do bodily harm or carry him off to a prison or dungeon. The key-hole and other small apertures or crevices are chinked to prevent anyone from seeing into the room or forcing noxious gases at him. Aural and visual hallucinations are also present. Added to all this we have what has been termed the "cocaine microbe," not the material microbe met with in other diseases, which can be demonstrated under the microscope, but an imaginary body which the patient believes to be real, usually assuming the form of minute worms and insects situated under the skin, so that he will mutilate his body, especially his hands and fingers, trying to dig them out with the point of a penknife or other suitable sharp-pointed instrument.

When the hypodermic syringe is used as the means of taking the drug, the skin where the needle is inserted soon becomes indurated and its texture changed so that, in course of time, it becomes leathery — almost impossible to force the needle through — and with the constant dosage, the skin on the arms, fore-arms, legs, thighs, and hips becomes so thickened, hardened, discolored, and altered in its texture that it is almost impossible to find a suitable point to insert the needle, upon the withdrawal of which the skin, lacking contractile power, fails to close the puncture, and much of the fluid injected is apt to spurt out, causing considerable loss and the necessity for another injection. When a strong solution of cocaine is used, the skin becomes disorganized, ulcers form, varying in size from a small pea to large areas of integument. I have seen ulcers so caused measuring six inches in length by an average of two in diameter without a particle of skin being present. It is quite true that the habitual use of morphia, hypodermically administered, will produce a similar induration, but the action of morphia in this respect is mild as compared with that of cocaine. The cocaine habitué is totally unfit for his ordinary avocations; his work, if done at all, is performed in a most erratic and unsatisfactory way and much neglected.

When the above train of symptoms is present it is not difficult to make a correct diagnosis; but, in the early stages of the malady, many are absent, and those present are not always noted, if observed, not correctly interpreted, especially in the face of the most positive denial of fact by the patient. By means of urinary analysis, any doubts that may exist can be dispelled.

The method by which I have succeeded in extracting this alkaloid from the urine of those using the drug is as follows: To a suitable quantity of urine (ten to twenty ounces) add sodium, or potassium carbonate, until the mixture is very distinctly alkaline; let it stand for half an hour and filter; to the filtrate add 3ij pure sulphuric ether, agitate quietly for two or three minutes, then allow it to settle for half an hour; draw off the ether and add to it 3j, dilute hydrochloric acid (M. x to 3j), thoroughly mix, place in an open dish and permit the ether to evaporate spontaneously; apply gentle heat to effect perfect solution of any alkaloid that may be floating on the surface or adherent to the sides of the vessel; let it then cool; the remaining liquid may now be tested for the hydrochlorate of cocaine by any of the reliable tests for this salt. The following are quite satisfactory:

TERCHLORIDE OF GOLD TEST.

To the solution thus obtained add a few drops solution terchloride of gold (gr. x to 3i); if cocaine be present a yellow, chloride of gold (Gr. X to i); if cocaine be present a yellow, or yellowish-white, precipitate will at once be formed, which is dissolved by heat, especially in the presence of a little free acid; upon boiling, the vapor given off will have the pungent and somewhat acrid, though pleasant and characteristic, odor of benzoic acid. The mixture can now be divided into two parts. One part is left in a test tube to cool and reprecipitate. To the other add oxalate of ammonia, which will throw down the gold; filter and test the filtrate with neutral chloride of iron; a change of color to a deeper shade indicates benzoic

acid in small quantities; a flesh-colored precipitate indicates the presence of benzoic acid in larger proportions.

The mixture left in the test tube to cool will now have thrown down a yellow precipitate, which can be collected and submitted to sublimation when the distinctive odor of benzoic acid will be noted, and the sublimate examined under the microscope for the beautiful feathery crystals of this acid. These tests show the presence or absence of benzoic acid; if present it could only come from the presence of cocaine in the urine examined.

MYERS' REAGENT TEST.

To a portion of the residue left from the ether evaporation add a few drops of this test reagent, a white precipitate will at once be formed, if cocaine is present, which dissolves by heat, and upon cooling throws down yellow crystals, which under the microscope ($\frac{1}{2}$ objective) appear as depicted in Fig. 1. If there is an excess of the precipitate the undissolved portion will fuse into yellow gummy masses upon boiling. In following out the test with Myers' reagent, should the patient be taking quinine,* it will first be necessary to precipitate this alkaloid from the solution to be tested by picric acid in excess, filter and make the test with the filtrate thus obtained. The limit of Myers' reagent appears to be about one part of cocaine in 30,000 of water.

The following is an example of detection, both morphia and cocaine, in a case of double addiction. The patient at the time was taking gr. xv. morphia sulph and gr. iv. cocaine hydrochlorate every twenty-four hours. Eight ounces of the urine voided was used, acid reaction, this was concentrated over a water bath to 3 ii., and allowed to stand twelve hours, then filtered, filtrate rendered alkaline by potassium carbonate, thoroughly agitated, and let stand for twenty hours, then

* A small portion of the liquid may be tested for quinine by the chlorine water and ammonia test. The absence of the Thalleochin reaction renders the use of picric acid unnecessary.

filtered. This filtrate was treated as above directed for the extraction of cocaine, and tested by Myers' reagent, giving very satisfactory results — forming crystals of the small round character depicted in Fig. 1. The large crystals seen in this figure were not obtained, as the solution was too weak. The precipitate left in the filter was treated for the extraction of morphia by the process described by myself a short time ago, and yielded unmistakable reactions by the following tests: Nitric acid; iodic acid and chloroform; ferricyanide of potassium and ferric chloride.

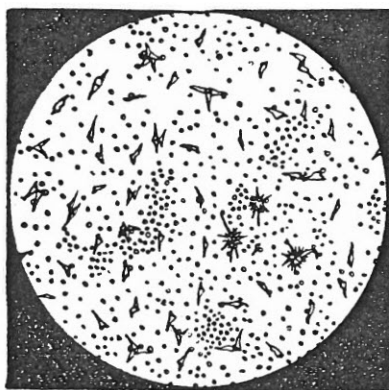


FIG. I.

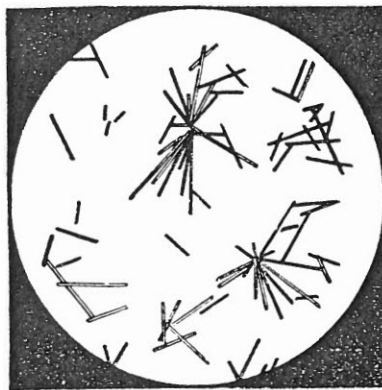


FIG. II.

Upon permitting a few drops of the residue left from the alcoholic extract in the presence of a small amount of dilute sulphuric acid to evaporate spontaneously on a glass slide the beautiful large crystals of morphia sulph seen in Fig. II were obtained.

NOTE. — That in precipitating the alkaloid cocaine by the alkaline carbonates this alkaloid is soluble in an excess of the precipitant, and must be looked for in the filtrate, and not in the precipitant — the reverse obtains with alkaloid morphia.

TREATMENT OF INEBRIETY.

BY H. A. RODEBAUGH, M.D., MARYSVILLE, OHIO.

The time we give to the treatment of any disease depends upon our idea of its pathology, etiology, and the results previously secured by any given treatment in similar cases. Within certain limits, this time varies with the age, sex, habits, and constitution of the patient.

Inebriety, or alcoholism, is a specific, neurotic disease, caused by the previous use of alcohol. Its pathology relates to changes in the nerve cells, whereby normal function is at first embarrassed and later abolished. In inebriety, as in many other diseases, important changes in theory have occurred from time to time in regard to its cause, effect, and cure. Many years elapsed before the profession recognized inebriety as a disease, then later as a form of nervous disease. Following its recognition came all kinds of theories in regard to its pathology. Previous to 1858 the uncontrollable craving for stimulants, which really constitutes this a distinct disease, was believed to be due to some pathological change in the stomach, and the treatment directed accordingly. Subsequently, it was taught that alcoholism consisted in the grosser lesions found in the various important organs of nutrition in those suffering from this disease; and that, to be successful, treatment must be continued for months or even years. We now know that these various lesions of the brain, stomach, kidneys, liver, etc., are products, not factors. Alcohol is a poison, and the phenomena of inebriety are due in the first place to the direct action of this agent upon the nervous system. If we surround a living nerve with alcohol, we find that it be-

The autopsies were made six and twelve hours after death, and the preservation of the tissues (Lang's fluid, twenty-four hours) was satisfactory. In both cases the lesions demonstrable by Nissl's method were nearly identical.

In the spinal, medullary, and cortical stichochromes the usual type of lesion was that of extreme chromatolysis. No normal cells were seen anywhere, and in only a few were there any traces of the peripheral ring of chromatic bodies, often seen when the disintegrating process begins about the nucleus.

In many cells, especially in the cranial nuclei, the lesions had advanced far beyond simple chromatolysis, and the cell outlines were irregular and ragged, and considerable areas of the cells were almost transparent. The remains of the chromatic bodies appeared as a uniform deposit of fine granules, or in the form of a network of fine granules, or no traces of them could be found. In badly altered cells, the nuclei were almost invariably markedly eccentric or projected beyond the cell border. They were not found to stain diffusely. Yellowish granular pigment was rarely seen in these cells.

Many of the Purkinje cells contained a moderate number of large distinct chromatic bodies, but usually these bodies were thin, ragged, granular, or absent, the deficiency being most marked at the poles and not about the nuclei.

In the cortical archyochromes the chromatic network was markedly bleached, sometimes coarsely granular and indistinct.

All through the central nervous system the dilatation of capillaries was striking. In the first case (the patient was said not to have been sober for three months) the chromatolysis was usually more complete than in the second.

It appears, therefore, that acute alcoholism in the human subject is associated with lesions in the ganglion cells, comparable with but much more marked than those found after experimental alcoholic poisoning in animals, nor can one hesitate to attribute in large measure the violent nervous symptoms

had appeared before that time. On the intimate connection between insanity and chronic alcoholism we have the most trustworthy evidences. From fifteen to twenty per cent. of the inmates of insane asylums of Germany belong to this class, while the statistics of England and Switzerland show a still larger proportion.

“The consumption of alcohol has been decidedly increased in all civilized lands within a short period. In Holland the use of distilled liquors increased per person in seventeen years, from 1864-1881, about thirty per cent.; in Belgium the consumption in the last forty years was more than doubled; and, most surprising of all, in the wine country, France, the increase per person during the twenty years from 1860-1880 has risen from four to seven liters, or about seventy per cent. In Prussia the amount consumed increased in fifteen years, 1865-1880, from eight to ten liters a head, and at the same time the consumption of beer increased from thirty-seven liters a person to eighty-eight. Therefore the opinion that the lighter alcoholic drinks, especially beer, decrease the consumption of distilled liquors is proved to be a mistake — everywhere a marked increase in the consumption of both has taken place.’”

Naturally the lighter alcoholic drinks cultivate a taste for the stronger liquors. Those who make statements in conflict with the indubitable facts of statistics must either be ignorant of these facts or else they attempt to pervert them in order to apologize for their own drinking habits.

Continental physicians who speak German have formed an association for the promotion of total abstinence. Their first convention was recently held in Frankfort. The January number of the valuable monthly, *Internationale Monatschrift zur Bekämpfung der Trinksitten*, published in Leipzig, gives significant utterances of some of the members. Dr. P. J. Moebius, of Leipzig, declared that the physician who is

a total abstainer ought to make no exception in demanding total abstinence.

" He ought not to censure the laborer who drinks distilled liquors, and excuse the wine and beer guzzlers. He should, rather, first of all oppose the drink customs and the social obligation to drink which are prevalent in the upper circles; for mere argument avails nothing so long as among officers, students, and others a certain obligation to drink continues in the most pernicious and most revolting form. Using constraint to make men drink should be condemned unconditionally by the physicians, and be called by its right name, an abomination.

" The physicians ought not to join in the songs of the poets of intemperance or glorify such poets.

" No physician who is an abstainer should ever make the slightest concession to the alcohol customs of society, not even for the sake of appearances. Never ought he, as an act of politeness, to put the glass to his lips, and he should refuse to raise his glass when the command to do so is given. As Christians could not take part in the sacrifices of the Romans, so the abstaining physician should everywhere and at all times oppose the social obligation to drink, never so much as seeming to yield assent. Not a drop should he sacrifice, for in doing so he would bow his knee. Never let him pay the slightest attention to the drinking customs, whether he be at a hotel or at a family festival, in the presence of a king or of officials. 'Never bow before the idol, but deny it before the mighty.' Under such circumstances every drop promotes the tyranny of social drinking and thus also drunkenness. If this abstinence attracts attention and causes offense, the result will be the more beneficial, and the slight martyrdom to which the total abstainer is subjected will accomplish more than his preaching. The hands of others are tied; but the physician is free, therefore, he should be the first to oppose the social drinking tyranny."

Dr. Wehberg, of Duesseldorf, said:

"The movement in favor of moderate drinking has not accomplished the desired result of overcoming drunkenness.

"Total abstinence only will accomplish that end.

"Owing to the newly awakened consciousness of solidarity among civilized men, physicians are under obligation to set a good example respecting total abstinence from the use of alcoholic drinks, in order to lead men to more ideal conceptions.

"We have a right to look for the final victory of our efforts, since a development is evident in the fact that the view of natural science is taking the place of a metaphysical conception of the world. In order to attain a higher standpoint it is necessary for the use of spirituous liquors to vanish, just as, on the other hand, fuller knowledge, a higher standpoint having been attained, will lead mankind to reject alcoholic drinks."

That is, total abstinence is required to attain a higher stage of civilization, and a higher civilization will of itself, with its better knowledge, banish alcoholic drinks. It does look as if, for some of the most radical and most effective temperance doctrines, we shall be obliged to go to Germany and Switzerland. This is what Dr. Landmann, in Boppard-on-the-Rhine, says:

"The members of the Association of Abstaining Physicians reject the use of spirituous liquors in every form, and particularly declare the use of alcohol at the sick-bed a scientific error of the saddest kind. In order to war against this abuse, they earnestly appeal to the officers having charge of funds for the sick, henceforth, under no circumstances, any longer to permit the prescription of wine, whiskey, and brandy for sick members; but to resist to the utmost, according to the right given them by the laws insuring the sick, the taking of spirituous liquors, under the false pretext that they have a curative and strengthening effect."

Now we go to Switzerland, among whose physicians and

professors this same association has members. Dr. Bleuler, Rheinau, says:

"The treatment of chronic diseases with alcohol is contrary to our knowledge of the physiological effects of alcohol. There is no probability that its use will be beneficial, certainly its benefits have not been established. Often an injurious result is proved.

"It is not implied that there may not be some benefit in the use of alcohol in cases of sudden weakness with or without fever. But even in such cases the benefit is not demonstrated. At any rate, other remedies can with advantage be substituted for alcohol.

"The essential thing in the treatment of all alcoholic diseases, delirium tremens included, is total abstinence.

"The physiological effect of alcohol is that of a poison, whose use is to be limited to the utmost. Even the moderate use as now practised is injurious.

"The customary beneficial results unquestionably depend chiefly on suggestion and by making the patient believe falsely that the momentary subjective better feeling means actual improvement.

"Physicians share the blame of the present flood of alcoholism. They are therefore morally bound to remedy the evil. Only by means of personal abstinence can this be done."

Dr. A. Frick, professor in Zurich, is a careful student and an influential writer on alcohol. His statements are weighty. This is his testimony:

"In larger doses, alcohol is absolutely injurious in the treatment of acute fevers, especially in case of pneumonia, typhus, and erysipelas. They first of all injure the general state of the patient, they cause delirium, or increase it if already existing, and, secondly, they injure most seriously the organs of digestion and interfere with proper nourishment; thus they have a weakening effect, instead of prevent-

ing weakness which they are usually supposed to do. In case no alcohol is used, the convalescence is much more rapid. In no case has the benefit of treatment with alcohol been established. According to the view of the most eminent pharmacologists, the stimulating effect of alcohol consists simply in a local irritation of the mucous membrane of the stomach, similar to that produced by a mustard plaster."

The last testimony is that of Prof. von Speyr, University of Berne:

"Leaving out of discussion the question whether small quantities of alcohol are injurious, it is unconditionally required that the drinker who is to be cured must be a total abstainer.

"But if total abstinence is to be required of the drinker, then others must practice the same.

"Even if this view is quite generally recognized in our day, still it is to be observed that this knowledge has been acquired with difficulty.

"If it can be proved that even small quantities of alcohol are injurious, then the use of alcoholic drinks is unquestionably to be rejected and opposed.

"But even if such a demonstration is out of the question, and if it were eventually proved that there is some benefit in small quantities of alcohol, that would by no means overthrow the demand for total abstinence.

"Is any significance to be attached to the value of a small or the smallest quantity of alcohol in view of the enormous abuse of spirituous liquors and of the extensive evils produced by what is called moderate drinking?

"Is there a more effective weapon against alcoholism than total abstinence? Are any notable or permanent effects produced by moderate drinking or by abstaining only from distilled liquors?

"Finally, what is the injury of total abstinence? Why is it opposed? On what ground does it deserve opposition?"

DIFFERENTIAL DIAGNOSIS IN CEREBRAL HEMORRHAGE.

When the physician is confronted by an unconscious patient, and the diagnosis of hemorrhagic apoplexy is fairly presented, in the first place it must be distinguished from insensibility due to a variety of causes, such as alcoholism, uræmia, diabetes, opium poisoning, saturnism, and other toxic conditions, sunstroke or heat stroke, syncope, post epileptic stupor, hysterical coma, and pure simulation. Secondly, the different varieties of encephalic hemorrhage must be separated from each other. As intracerebral hemorrhage without ventricular effusion from ventricular hemorrhage, primary or secondary, intracerebral from meningeal, meningeal from cortical, and the different forms of cortical hemorrhage from each other and from large effusions. In the third place, encephalic hemorrhage must be differentiated from forms of apoplexy due to encephalic lesions, such as acute softening dependent on embolism or thrombosis, intracranial abscess, or new growths.

Toxaemias. — In a case of uræmic coma a patient may have swelling of the limbs, edema of the eyelids or face, the breath may have a urinous or beef-tea odor, the pupils are generally dilated, and, as a rule not without exceptions, one side of the body shows more paralysis than the other. Considerable evidence has been accumulated to show that affections of the nervous system strictly limited to one-half of the body occur during the course of some forms of Bright's disease. In this country Dercum has reported cases of hemi-chorea, hemiplegia, and unilateral convulsions. Raymond, Chantemesse, and Tennyson have reported a series of cases of unilateral affections, chiefly hemiplegia and epilepsy, apparently of uræmic or at least of renal origin. In not one, according to the reporters, could a trace of a strictly focal lesion be discovered. Schauffard has reported a case under the title of uræmic convulsions of the Jacksonian form. Such cases can be diagnosed only by the history of the case and a full considera-

tion of the signs and symptoms which indicate renal disease. Diabetic coma may be suspected if sugar is present in the urine, and especially if the patient has a history of glycosuria. Opium, chloral, lead, and other narcotic drugs or substances give rise to conditions of insensibility. Deep insensibility with contraction of both pupils and the absence of indications of unilateral paralysis such as conjugate deviation, loss of muscular tone, and absence of the drooping of the face on one side, favor the diagnosis of opium poisoning; and yet Taylor has reported inequality of the pupils in one case of opium poisoning. Profound narcotism from opium and the coma of serious apoplexy present phenomena which are very similar. McEnroe, in speaking of the differential diagnosis between hemorrhage into the pons and opium poisoning, says that in pontile hemorrhage the coma is more profound. In narcotism it is possible to arouse the patient and to make him answer questions intelligently as far as he will answer them at all. The pulse is full and strong in the early stages of opium poisoning. While in hemorrhage it is wiry, sometimes slow, sometimes rapid, but not usually full, strong, and regular. In the former the whole body is bathed in perspiration and the respirations are less frequent than in hemorrhage. The discussion of the distinction of hemorrhagic apoplexy and the unconsciousness produced by chloral, cannabis indica, chloroform, hyoscynamus, or prussic acid, or nitro-benzole, belongs to works on toxicology.

A word might here be said about lead poisoning, as coma convulsions and other symptoms pointing to profound involvement of the brain are occasionally seen as the result of severe poisoning by lead: but here the presence of the lead line, the history of other forms of lead disease and the occupation of the patient are of great value if information with reference to these points can be obtained. Occasionally cases either of deep stupor or of excessive delirium are seen for which no cause can be assigned. These are sometimes due to toxæmia

of unknown origin. That they are not ordinary apoplexies can be recognized, but exactly what they are may be beyond the pale of diagnosis. In sunstroke, which by some is regarded as a toxæmia, the fact that the patient has been exposed to excessive heat, the great rise and steady increase of body temperature, the prostrated or collapsed condition of the patient, and the absence of unilateral phenomena serve as differential features.

ABUSE OF STRYCHNINE.

Dr. Hare, in the *Therapeutic Gazette*, makes a timely protest against the indiscriminate use of strychnia as a stimulant. He mentions the first improvement of the heart's action as encouraging its continuous use, until a condition of excessive nervous irritability appears.

"Particularly is this true where very large doses of strychnine are administered to patients suffering from severe asthenic maladies, as, for example, in typhoid fever, tuberculosis, or epidemic influenza. In each and every one of these diseases a few doses of nux vomica or strychnine will frequently produce a noticeable improvement in the pulse and in the apparent condition of the nervous system, because strychnine being a powerful stimulant whips up the flagging nervous centers and causes them for the time being to perform their functions with greater activity. If the strychnine is persisted in, and ascending doses are given for a considerable period of time, in addition to the nervous symptoms which we have mentioned, there is frequently developed an irritant fever, and particularly is this the case when strychnine is given in full doses during the later stages of typhoid fever or during convalescence from this disease, when, as is well known, anything which disturbs the nervous centers is very apt to result in a rise of temperature. Physicians are wont to watch the patient taking large doses of strychnine in order that this dose may be cut down as soon as twitching of muscles of the forearms or slight stiffness at the nape of the neck is developed, but in

our experience, in asthenic patients, long before these symptoms appear there develops mental disquietude and a condensation of the larger cells, chiefly with degeneration of the cytoplasm; (2) a general cell atrophy of the body and nucleus; and (3) a good deal of change in the cell-body, with many neuralgia nuclei in the pericellular spaces. In the cases of alcoholism and alcoholic meningitis, it was not possible to make out a distinct type of cell degeneration, nor could this be expected, as these patients die not so much from the alcohol as from autotoxemias, and from the febrile process. — *Medical News*.

“UNDER THE GUNS; A WOMAN’S REMINISCENCES OF THE CIVIL WAR.” By Mrs. Annie Wittenmyer. Boston: E. B. Stillings & Co., 55 Sudbury Street.

This is a very interesting volume by a strong-minded, clear, executive woman. It is composed of sketches and incidents of the hospital and battlefield, so graphically written and so literally true as to rouse most intense interest and admiration. All such works give new light to the history of the events in which they were associated, and bring out many new phases of the medical side that would be forgotten otherwise. This book will be a revelation of the possibilities of woman’s work on the field of battle and in the hospital, and will be a monument to the author’s memory when this and many other generations have come and gone. The rare talent and personality of the author appears in every page, and in many ways the book is a psychological revelation to students of mental diseases.

The *Homiletic Review* merits the warmest praise and commendation for its most attractive contents and valuable papers from the ablest writers and thinkers of the age.

“Politics as a Form of Civil War,” “Racial Relationships and Peculiarities of the People of the Balkan Peninsula,” “Social Evolution of the Colony,” “Increase in the Produc-

tion of Gold," are most graphic papers of great value in the March number of Appleton's *Popular Science Monthly*.

The *New Voice* grows in general excellence and attractiveness, and its value is more and more appreciated by its readers.

The *Scientific American* is a family paper for all who are interested in scientific growth and development.

"NERVOUS AND MENTAL DISEASES." By Archibald Church, M.D., Professor of Clinical Neurology, and of Mental Diseases in the Northwestern Medical School (Chicago Medical College); Professor of Neurology in the Chicago Polyclinic, Neurologist to St. Luke's Hospital, etc., and Frederick Peterson, M.D., Clinical Professor of Mental Diseases in the Woman's Medical College, New York; Chief of Clinic Nervous Department, College of Physicians and Surgeons, New York. 8vo, cloth, pp. 843, with 305 illustrations; price \$5. W. B. Saunders, publisher, 925 Walnut Street, Philadelphia, Pa.

"THE DAWN OF REASON; OR MENTAL TRAITS IN THE LOWER ANIMALS." By James Weir, Jr., M.D., Owenboro, Ky., author of "The Psychological Correlation of Religious Emotion and Sexual Desire," etc. The Macmillan Company, New York, N. Y. 1899. Pp. 234. Price \$1.25.

The author has in this work presented to the general reader, in a clear and concise form, evidence of the mind and mental action of the lower animals. In his discussions of Psychology he has carefully eliminated metaphysics and avoided all data that were without value, and only used such as he had absolute confidence in as to their accuracy. He does not claim infallibility, but gives the results of his twenty years' study and observation in this line. The book is well written, and the matter is well arranged, and we can heartily recommend it to those who want a readable, interesting, and semi-scientific work on the subject.

observed in these cases, to the cellular lesions revealed by Nissl's stain, and only faintly indicated by other technical methods.

ERUPTIONS PRODUCED BY ALCOHOL.

Often peculiar eruptions appear in cases which come under treatment for inebriety, and they are not well known or recognized. In a late editorial in *The Therapeutic Gazette* this subject is presented as follows:

In addition to the nausea, vomiting, and purging produced by alcohol in some patients, through its irritative action upon the stomach, and in addition to the coryza which it occasionally produces, chloral is capable of causing other effects, aside from any depressant influence which it may exercise upon the circulatory and respiratory systems. Within the last two years we have called attention in these pages to the frequency with which drugs produce lesions in the skin, the cause of which is frequently not recognized, and these lesions are therefore very obstinate under ordinary treatment until by chance the use of the drug which is causing them is stopped. In this connection we may call attention to an interesting paper which has recently been published by Labadie-Lagrave, of Paris. In the first of his cases a girl of seventeen, without any antecedents of note, was seized with fever, sore throat, and an eruption upon the arms of a diffuse red character, with tiny punctated marks. The diagnosis was that the patient was suffering from scarlet fever, and the condition of the tongue was thought to be characteristic of this disease. The tonsils were covered by a gray, gangrenous-looking exudate. There was no albuminuria in the urine and the lungs were clear. The diagnosis was that of ordinary scarlet fever with gangrenous tonsillitis. The temperature curve was of ordinary scarlet fever. Two days after the patient was seen the eruption faded and the temperature fell by lysis. Frequent

Editorial.

INEBRIETY AND INFLUENZA.

The present epidemic of influenza has proved to be very fatal in cases of moderate and excessive alcoholic drinkers.

Pneumonia is the most common sequel, breaking out suddenly and terminating fatally in a few days. Heart failure and profound exhaustion is another fatal termination. One case reported to me of an inebriate, who, after a full outbreak of all the usual symptoms, drank freely of whisky and became stupid and died. It was uncertain whether cerebral hemorrhage had taken place, or the narcotism of the alcohol had combined with the disease and caused death.

A physician appeared to have unusual fatality in the cases of this class under his care.

It was found that he gave some form of alcohol freely, on the old theory of stimulation. Another physician gave all drinking cases with this disease alcohol, on the same theory, and had equally fatal results. It has been asserted that alcohol as an antiseptic was useful in these bacterial epidemics, but its use has been followed by greater depression and many new and complex symptoms. The frequent half domestic and professional remedy, hot rum and whisky, has been followed by more serious symptoms and a protracted convalescence. Many facts have been reported showing the danger of alcohol as a remedy, also the fatality in cases of inebriates who were affected with this disease.

The first most common symptom seems to be heart exhaustion and febleness, then from the catarrhal and bronchial irritation, pneumonia often follows.

The following curious case comes under my observation:

A periodic inebriate whose drink periods occurred every three months was taken with the grip, also aggravated catarrhal symptoms and muscular pains at about the time for the return of the drink craze.

He was kept in bed three weeks and treated by salines and baths, and kept alarmed at the prospect of death from pneumonia. Then permitted to go out under great restrictions. He recovered and for a year has had no return of the drink craze. The influence of the disease at this time was sufficient to break up the drink storm.

The experience of this epidemic confirms the facts noted before, that inebriates and drinking men generally have low vitality and resisting powers to disease. They are always the first to succumb to any violent strain or expenditure of force by the body. They have no reserve power, and the heart and lungs show this most quickly.

The treatment of epidemic disease by alcohol, especially inebriates, is simply intensifying the debility present and lowering all vitality.

These are clinical facts that can be confirmed by every careful observer.

INEBRIETY IN FAMILIES OF NOBILITY.

In one of the leading quarterlies there is a very significant paper on the decay of the leading families of Europe. While this is only a natural sequence of causes, both physiological and social, the prominence of inebriety in these cases gives it a special interest.

It appears that inebriety and gambling are the most prominent features of the final collapse of these families. One old house of Austria had two generations of opium inebriates. At the final breaking up the last member, a prince, had one hundred and thirty pairs of trousers, two hundred and twenty

coats, and eighty pairs of shoes, and other equally numerous articles of clothing.

He appears to have spent most on opium and clothing, and his special pastime was borrowing and swindling his friends and tradesmen.

The female members of the family gave great attention to dress, and followed the changing fashions, using opium in the meantime with spirits, and dying early. Another French family dissolved apparently by the inebriety and marrying propensities of the father and two sons. For many years they were hard drinkers and constantly engaged in intrigues and alliances with women. The estate dissolved and death left a second son a pauper, who disappeared. The collapse of the family extended over two generations, and was complete in embracing every member, who all drank and showed sexual delirium.

A prime minister of England, who was of an old titled family and of great wealth, died from gout due to wine excess thirty years ago. His son and grandson have wrecked the estates and the family has disappeared. Both the son and grandson were gamblers and drank to excess and died, and the name is now only known to history.

Two old noted Scotch estates, whose history and names have been prominent for three centuries, have been sold recently by the sheriff, and the descendants have all disappeared. The same inebriety appeared in all branches of the family associated with reckless living and gambling.

This is the history of nearly all the old families of the nobility. In some there is a persistence of race stock and a renewal of vigor by intermarriage outside and more healthy living.

It would seem that inebriety is the most fatal of all diseases which destroy these old families. Gambling and speculating may involve the estates and cripple them, and political changes may dissolve and separate the family, but the name

continues and the family often appears again on the former plane of eminence. But when the inebriety breaks out, the rule is extinction, to which there are but few exceptions.

These old families are governed by the same laws of dissolution seen in all circles, only they are supposed to be more stable and persistent, owing to more settled surroundings. When they begin to dissolve, they fall apart more quickly and have very little vitality to transmit to the next generation.

CAPITAL AND INEBRIETY.

It is evident in many ways that managers of large moneyed interests and capitalists are taking up the temperance question practically in demanding total abstinence of all responsible persons who handle property. Business managers, responsible clerks, partners, and persons occupying places of trust are regarded with increasing anxiety, particularly if they are club men and are known to be users of spirits. The first qualification of an aspirant for a good position is, What are his habits, is he a total abstainer? Often inferior men secure positions because they are abstainers, while men, brilliant, capable, talented, who are moderate drinkers, fail.

Mercantile agencies rate low all companies and businesses managed by moderate drinkers. Railroad and all transportation companies are rapidly throwing out all users of spirits and making total abstinence an imperative qualification for service. Several insurance corporations, and some of the largest banking companies in the country, employ only total abstainers. The stockholders of a leading company called for the resignation of two leading officers because they were moderate drinkers and club men.

In a list of twenty defalcations in New York and vicinity, sixteen of the defaulters were users of spirits, and ten were club men.

In business failures of twenty-six firms and corporations,

the responsible managers were drinking men in twenty-one instances. These facts were not made public, and yet the business sense of the community realized the danger in greater efforts to eliminate this source of peril to capital.

Some years ago a large manufacturing firm suspended, due to the bad management of a moderate drinking president. Since then they have started again and have become very prosperous. One of the rigid rules is, no drinking man shall be employed in any capacity.

Every year this fear of drinking men is increasing, and every year capital is demanding that total abstainers should only be employed.

In this there is no sentiment or theory, only cold, hard experience, which brings only one conclusion, repeated over and over again, namely, that moderate drinking men are dangerous, untrustworthy, and unreliable.

Science points out the reason in the anaesthetic action of alcohol and diminished sensory acuteness, lowered powers of judgment, and enfeebled moral perception. They are poisoned, disabled, and unfit for work which requires the best judgment and capacity of the brain. Capital has no knowledge of these reasons: it only judges from the facts of experience, and the more wisely it observes the perils which confront it, the more fear is manifest in reliance on moderate drinkers. In striking contrast to this is the action of a learned board who placed at the head of a great educational institution a brilliant moderate drinker. Other learned boards have put similar men in positions of great trust. Within a short time two of these brilliant moderate drinkers who were heads of great institutions of learning have resigned, leaving heavy burdens for their successors.

A professional and educational sentiment has not risen above theories and turns away from the teachings of science and the warnings of reformers as foolishness. Some day a great awakening will take place. Experience will sustain the

teachings of science, and the danger and folly of trusting the moderate drinker as sound and capable will be fully recognized and put into practical application in all the workings of life.

HALF TRUTHS.

Recently we have received a number of papers which are good illustrations of the partial recognition of the truth and the reluctance to admit facts that are opposed to previous theories.

It is the same psychological history in which every new truth is first denied and then admitted as partially true and finally is accepted as true.

A certain number of persons never change their conceptions of truth. The facts they once learned are the same yesterday, to-day, and forever. Another class admit that new evidence has changed former theories, but the old theories contain some truth, and that a mixture of old views and new ones embody the real facts.

A great many persons never admit a radical change of theories; they recognize that alcohol may be a poison and inebriety a disease, but persist in the belief that alcohol is a food and stimulant, and therefore valuable; also that inebriety is a moral disorder and under the control of the will, hence only a disease in part and in certain conditions.

They are in the second stage of awakening or evolution, and always manifest great eagerness and energy to support and defend their views.

In the papers received this fact is very apparent in the skillful setting forth of evidence favorable to their theories and under-rating of opposite facts.

Sneers, doubts, and denials of contrary truths are only evidence of weakness, and calling opponents cranks and extremists is usually descriptive of their own mental condition.

Often such men make a show of great candor and speak of their questions as settled by uncontrovertible evidence.

Statistics and experiments in the laboratories, which sustain their theories, are given a very high place, while opposite experiments and statistics from equally good sources are regarded with suspicion and doubt.

It is curious to observe the dogmatism of men who are not in a position to become experts. Thus an oculist, a teacher of obstetrics, an army surgeon, and a country practitioner have each written very authoritatively in defence of alcohol and condemnation of those who differ from them.

Another quite prominent man denounces alcohol in the young, but urges its use in old persons, and condemns all advocates of the theory of the disease.

These are the doubters who are mentally unable to keep up with the progress of research, and stand far back in the rear, shouting to those in the front line what is true and what is not.

Some persons assert that they are not total abstainers as evidence of impartiality and ability to judge. This same egotism extends to the most degenerate inebriate, who never doubts his ability to know what inebriety and alcohol is.

Here, as in other fields of research, the bitter critics are least qualified to judge. It is a hopeful sign to find men partially converted and willing to acknowledge some disease in inebriety and some evil in alcohol. But to stop at this point and conclude that no other facts are possible is deplorable weakness.

AN ALCOHOLIC PROBLEM.

A man forty-five years of age, married, with four children, a manufacturer, and wealthy, has distinct drink paroxysms which last eight or ten days.

They begin with beer and wine, then whisky, and stupor, associated with mental and muscular feebleness. Then insomnia and delirium comes on.

No special delusions, but intense activity and anxiety about the details of his business.

He drinks, at fixed intervals, small doses of whisky, and never seems stupid, but is violent in his actions. From the slightest suspicion he will attempt to punish and injure anyone. He goes about his factory and on any provocation will beat and strike, and would kill were he not restrained.

This violent homicidal period lasts three or more days, and terminates in sleep and restoration. An interval of total abstinence of from six to ten months follows, during which he is generous, kind, and very thoughtful of every one in his service and in his family.

He has been to two asylums for inebriates, and six months under treatment in an insane asylum, without results.

These homicidal drink attacks return the same, and are growing more serious. He has injured some members of his family and several servants in these attacks, and requires the most careful watching and restraint at times.

It was found by accident that a day or more of opium narcotism completely neutralized and broke up this paroxysm.

After three days of extreme exhaustion and feebleness he recovered. The next attack was aborted in the same way, but the third attack was followed by the use of opium in small doses.

This man had a dread of opium addiction, and a council of physicians was called. The opium was removed, another drink attack came on, and the same violent symptoms followed. It was finally checked by opium, and he then consented to continue its use.

He is now, four years after, an opium inebriate, conducting his business quietly, and is uniformly kind and rational. He has used no spirits, but regrets his opium-taking, and is anxious to stop it.

The question was this, Should he be treated for the opium addiction, and after its removal be subject to the return of the

drink craze, with its probable homicidal symptoms, or continue as he was, with the certainty of invalidism and increasing incapacity in the future.

This problem is yet unsettled, and this man and his family are asking counsel from all persons who are supposed to be able to advise.

SCHOOL BOOK CONTROVERSY.

In the rational, reasonable controversies which have centered about the school books which make the evils of alcohol prominent, some very interesting opinions are urged.

One class of objectors acknowledge the value of teaching the danger of alcohol in the public schools, but think that it is given too much prominence, that the attempt to give technical knowledge of the action of alcohol is impractical, and fails to have the effect intended.

Examples are cited of descriptions that are practically unintelligent to any except medical men. They also urge that other topics are more practical and can be taught easier. Also that the impressions given in many text-books exceed the facts and give a wrong view, which reacts and fails to convey the real truth.

The supporters of this teaching acknowledge that the books may err in clearness and expression and proper proportion of facts which can be easily taught, but urge that the magnitude of the subject fully sustains the prominence given to it.

At present they claim that no hygienic study can be more important than the danger of alcohol as a beverage. They point to the fact that ten per cent. of all the male population use alcohol, to their injury, and four per cent. of women are also addicted to its use.

The evils that grow out of this are more fatal and serious than all other sanitary losses combined.

They also urge that the theories of the past are so firmly believed in by the masses that scientific research to the contrary makes but little impression.

Only by strongly stated facts taught to children can the subject be brought into prominence before the parents, and investigations encouraged.

It is affirmed that no statements of the injuries following the use of alcohol can exceed the facts which scientific research and practical experience will not confirm.

In these discussions the personalities of the disputants are very prominent. The moderate user of spirits cannot accept the statements of the evils of spirits, because they conflict with his personal conceptions.

The abstainer who from experience and observation finds only evil in spirits is equally convinced and emphatic in his opinion.

Scientific research is fortunately fast clearing up this realm of confusion.

applications of antiseptics were made to the buccal mucous membrane of a lotion of salol and camphor, and to the skin chloralized vaselin was applied. After this treatment had been continued for a considerable period of time, desquamation of the skin having been persistent, although it was limited by the use of the chloralized vaselin, the temperature suddenly rose several degrees, and at the same time a curious rose rash developed upon the upper and anterior portions of the thorax and in the dorsolumbar region. This eruption was accompanied by a disagreeable sensation in the skin, and finally was followed by little papules which were surrounded by a red areola. Labadie-Lagraves believes that this secondary eruption was due to the chloral applications. In a second case in which chloral was applied locally similar symptoms were developed, namely, an erythematous rash, characterized afterwards by a papular eruption.

It is true that in these instances the eruption occurred from the local application of the chloral rather than by its internal use, but that eruptions do occur when chloral is used either internally or externally is well known. They have been reported by Schüle, Fuller, Brown, Mayer, Martinette, and Curran, and in America by Dr. Morrow in his well known book on "Drug Eruptions." Chapon in a Paris thesis of 1894 described such a condition.

Mason recorded three cases of measley eruption which lasted three or four days, and Burham has noted scarlatini-form eruptions after the use of chloral. In Brown's cases, curious red patches appeared over the malar bones, and across the bridge of the nose. Mercier has seen an urticarial rash, and if a large amount of literature were to be searched it would be found that chloral has been shown to produce almost every variety of lesion of the skin which is not dependent upon an infection and a micro-organism.

Two theories have been advanced to explain these eruptions. One is that the drug produces an angioneurosis or vaso-

Clinical Notes and Comments.

THE TREATMENT OF CHRONIC COCAINE POISONING, OR COCAINO-MANIA.

The following complete review of this subject is to be found in Sajous' Annual and Cyclopedia of Practical Medicine: The F. A. Davis Co., Philadelphia and Chicago.

"The treatment of the cocaine habit, or chronic cocaine intoxication, is very much more difficult. It is more essential to have complete control of the cocainomaniac and his actions than even in chronic alcohol or morphine mania. There is less to work upon in the brain and nerve centers of the chronic cocainist than in those of the chronic alcoholic or chronic morphinist. There is less mental and moral elasticity, less desire to be freed from the narcotic bondage, less consciousness of the bondage itself, a more helpless and hopeless wreck being difficult to find. Cocainomaniacs, however, are, in a few cases, cured without seclusion. In these hopeful cases there generally has been a greater stock of inhibition from the first. Again, the indulgence having been periodical and ordinarily provoked only by some recurrent pain or distress and leaving intervals of shorter or longer non-narcotic consumption between, inhibition has not been so paralyzed, and thus there has been more resisting power left. In the latter group of cases it is imperative to direct the treatment to the abolition or counteraction of the exciting influences.

In the mass of cases the main hope of cure rests in therapeutic seclusion. The patient must be treated as a diseased person. Diet, at first simple and readily assimilable, should be carefully attended to. Milk, with soda or lime-water and

effervescent if nausea and emesis are present; arrowroot or other farinacious or malted food, and other peptonized preparations are excellent. Gradually, broths and plain soups, oysters, fish, poultry, and, lastly, mutton and red meat, with an ample supply of fruit and vegetables, may be given. But there are cases in which a non-fish-and-flesh dietary agrees better with the patient. Each case must be carefully observed to determine the most suitable dietic instructions.

In the first week, exercise and fresh air may usually be insisted on, with massage to improve the wasted condition of the muscles. Meals should be regular, and exercise graduated.

Alcoholic beverages are best avoided; and, though in a few cases, tobacco in limited quantities may be allowed to aid in staying the morbid impulse or crave, yet most cocaine-maniacs would be better without it in any form. Tobacco is apt, in many patients, to impair digestion and depress the heart's action, the healthy state of both vital processes being points of the highest importance in the treatment of this mania.

To combat the wearing insomnia of most cases I know of nothing better than the hot, wet pack. Of all the medicinal hypnotics, I have found phenacetin the most useful, in doses of five grains, repeated, if necessary, every hour; no more than three doses (fifteen grains) to be taken in one night. Other physicians have found chloral and sulphonal serviceable.

An important practical point is the method of complete withdrawal of the cocaine, which complete withdrawal is essential to cure. In most cases I have not felt justified in immediate withdrawal, though I have done this where practicable. I spread the reduction period over from seven to nine days, beginning, whatever the quantity which had been taken daily or how long, with a reduction of one-half. Dr. Welch Branthwaite informs me that in five cases he at once, after only one dose, stopped the cocaine, without trouble. These were cases in which morphine had also been freely used. In

the cases in which I gradually reduced the dose of cocaine, morphine had not been habitually taken in large doses. Where morphine is also freely and regularly taken, it is easier to withhold the cocaine without delay.

The best treatment of cocaineism has been, in my hands, the administration of chloral in large doses. Opium was found to be feeble in its action, while some relief was obtained under the action of bromide of potassium by itself, or, better, in combination with the chloral. This latter alone is to be preferred, especially when there is weakness of the pulse. — Andrew Fullerton (*Lancet*, September 19, '91).

All complications must be attacked, but, in the main, besides hygienic measures, nervine tonics are indicated in the endeavor to restore the lost energy and will power which really constitute the disease. Of these tonics, nux vomica and strychnine are the most effectual. Arsenic also is useful. I have found this, as in other forms of narcomania, that an occasional replacement of the stronger nerve tonics by milder ones is advantageous; I mean such as quinine, calumba, and gentian. Galvanism has, in appropriate cases, its value.

Though it is often asserted that three to six months suffice to effect a cure, my observation has been that twelve months constitute the shortest time in which such a result can be hoped for. There are, at the same time, a few exceptional cases in which a good result has been secured in a shorter period.

Medico-Legal Relations. — As many cocaineists will not apply for curative detention of their own accord, it ought to be the duty of the constitutional authorities to lay hold on these miserable and utterly helpless diseased persons, and insist on their reception and therapeutic seclusion for a given time, in a retreat, home, or hospital provided for the special treatment of such cases, with provision for persons with limited resources and for the very poorest. Such a provision would, in the long run, prove as economical as it would be invaluable to the welfare, physical and moral, of the whole community.

I am unaware of any trial for murder or for administering cocaine with intent to injure another person; but cocaine has been employed to commit suicide. It has been stated recently that forty cocaine-maniacs appeared in the police courts of Chicago within the period of a few months in 1897. The habit was said to have been induced, in some cases, by the use of popular preparations as cures for colds, etc. In the charters of various special institutions in the United States power is given to the managers to receive and compulsorily detain habitual inebriates who are addicted to excess in any narcotic or inebriant, including cocaine; but in England only excess in alcoholic liquors renders applicants eligible for admission into retreats under the voluntary provisions of the Inebriates' Acts.

HYPNOTISM IN THE TREATMENT OF INEBRIETY.

Dr. Rybakow draws the following conclusions from cases under his own observation, as well as from the literature on the subject: (1) Alcoholics are very susceptible to hypnotism, and subject themselves to hypnotic influence much more readily than many other patients. (2) Hypnotism is a very good remedy in the treatment of alcoholism. (3) The favorable effect of the treatment shows itself in the improvement of the subjective symptoms, the disappearance of the depression, of the apathy, and finally, in the complete loss of the thirst for alcohol. Sometimes one sitting suffices not only to overcome the desire for the habitual portion, but also to break off acute attack. (4) By repeating the sittings, one may at times delay the patient's cravings; the intervals, however, vary, depending entirely upon the individual characteristics. (5) Complete cure by hypnotism, according to the experience of the author, is seldom obtained; relapses also are proportionately frequent. However, other authors report instances of complete cure by hypnotism. The duration of the treatment depends especially

upon the degree of degeneration: the milder the degeneration, the more positive and lasting the cure. (6) Relapses are most frequently noticed in patients under this treatment when the sittings are discontinued too early. (7) In the treatment of the craving for alcohol by hypnotism, the utmost care should be taken in reference to the promptness of the sittings. (8) The hypnotic treatment may be instituted at any time: it is, however, better that the sittings take place during the state of sobriety. At all events, it should be delayed until the agitation and hallucinations have subsided. — *Charlotte Medical Journal*.

AMERICAN ASSOCIATION FOR THE STUDY AND CURE OF INEBRIETY.

(Organized November 29, 1876.)

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 spe-

cial 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.

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SOME CAUSES OF CONGENITAL DEFORMITIES.

Dr. Barnes read a paper on the above topic in the Section of Children's Diseases at the Philadelphia meeting of the American Medical Association. In the discussion of the paper, Dr. Bedford Brown, who has since died, made the following excellent remarks:

To arrive at any clear comprehension of the nature of the causes of congenital deformity, we must trace back those causes to the origin of man, to be found in the union of the male spermatozoon and the female ovule, and the processes of protoplasmic formation and cell growth evolved by the vitalizing influence of this union. Practically, it may be accepted as a fact that the healthy evolution of the fetus requires the union of a perfect ovule and an equally perfect spermatozoon. And, on the contrary, that a defective ovule and spermatozoon, though capable of fructification and to a certain extent development of a living being, that living being will be defective in some of its parts.

Hence, in tracing the causes of congenital deformities, one must go back to prime causes as well as intermediate causes. What is here understood as prime causes are certain defects seated in either the spermatozoon or ovule, one or the other, or

paralysis, probably by an action on the vasomotor centers. The other theory is that some of the chloral is eliminated by the glands of the skin, and in its elimination produces local irritation. According to Aviragnet these eruptions may be divided into two great classes. In the first they appear in the presence of conditions of the nervous system characterized by exaggerated excitability, as for example, chorea, insanity, tetanus, general paralysis, also in transverse myelitis and after operative shock. In the second class of cases they occur in instances in which there is retention of chloral in the system, as for example, in acute and chronic enteritis, eclampsia, hepatic disease, advanced tuberculosis, and abdominal tumors. Then, too, it is well known that the simultaneous administration of alcohol with chloral often causes dermal manifestations, and hot drinks given with chloral, particularly if they are copious, are apt to produce such effects. Of course, in the cases where chloral is applied externally it produces a direct local irritant influence.

THE SEVENTH ANNUAL REPORT OF THE
MASSACHUSETTS HOSPITAL FOR DIPSOMAN-
NIACS AND INEBRIATES AT FOXBOROUGH,
MASS.

This pioneer asylum shows most gratifying improvement in every way. It has had a larger number of cases this past year. The trustees report a decrease in the cost of supporting the patients for the year. It appears that this result was gained on the basis of an increase of only twenty-three commitments over the number of the previous year; and the increase in admissions was only six, including those who returned from leave of absence and elopements of previous years. "Leave of absence" is granted to persons who have completed a period of treatment in the hospital of six months. The number of these cases, and of elopers, who were permitted to return to the hospital, was much reduced. This is ac-

counted for as the effect of the new statute which was in operation from about the beginning of the year; it allows the keeping away of persons by final discharge who have been found unlikely to be benefited by treatment. An exceptionally large number of patients of this class was discharged early in the year, to clear the records of an accumulation of such cases; and the fact must be considered in any comparisons that may be made of the statistical tables of this year with those of former years. Without going into details, it is to be said that the use of the hospital by improper cases has been largely reduced through the authority gained by the trustees in the statute permitting the immediate final discharge of persons not susceptible of benefit. The collateral effects, also, of the new conditions thus brought about have been salutary. The hospital is becoming more distinctly a place for persons who show themselves worthy of its privileges by their cooperation with the efforts that are made for their good. It is such men who are worthy of the efforts made to save them, and who repay the commonwealth for what it does to restore them to usefulness and self-support.

It should be noted that, in these reports, patients "discharged from treatment" are not entered in the table as recovered at the time of their discharge. But a careful inquiry is made throughout the State, each year, to ascertain the later results of treatment. For example, of all the patients discharged from treatment during the year ending May 5, 1897, 36.73 per cent. were afterwards found to be "doing well or abstinent" at the time of the subsequent inquiry. Taking the next corresponding period of one year, ending May 5, 1898, it was subsequently found that 42.10 per cent. continued "abstinent." There was some increase also of those "improved," and the "unimproved or drinking as before" were reduced from ninety-four persons to sixty-six persons.

While such indications as those above mentioned are sufficiently tangible to be expressed in figures, and permit their

being cited as evidences of progress and improvement in the work of the hospital at Foxborough, the trustees recognize other signs of accomplished and promised advancement not easy to describe, but which they can appreciate, in the conditions and circumstances with which they have to deal. They wish, however, to reiterate and emphasize their former testimony as to the beneficial effects that have been derived from occupation and exercise medically employed by the systematic methods of physical training. The additions to the broom shop, through the modest appropriation asked for by the trustees, has afforded results that have more than justified the representations made by the governing board. The work of the shop is self-sustaining, and is invaluable for its remedial influences.

The report of the superintendent and the results shown in the records of the instructor in gymnastics are especially entitled to attention. Notwithstanding the meager and makeshift arrangements for conducting this important branch of medical treatment, its carefully developed methods have become effectively established, and contribute materially to the improvement shown in results reported this year. These, as they affected individual patients, were precisely measured, and are set forth in a tabular statement which leaves no doubt of the possibility of producing definite gains in strength and endurance. When it is considered that these exercises are calculated to reinforce not only physical but mental control, the strongest possible argument is presented for granting to the hospital proper means for carrying out this important part of its purpose.

The superintendent, Dr. Hutchinson, reports a daily average of patients during the year of 164, fifteen more than the past year. Forty-two per cent. of all cases treated are reported as doing well and abstinent. Three cases of delirium tremens are noted, and six deaths from all causes. Very interesting tables are given concerning the condition of these cases. The superintendent says:

The number of final discharges during the year has greatly increased, owing to the application of the statute authorizing the final discharge of such persons as are not amenable to treatment for alcoholism, because of pronounced moral, mental, or physical disease. As observed, nothing but good has followed the application of the new statute. Much that was deleterious and vicious has been removed, and the morale and surroundings of the inmates greatly improved. It is obvious that occasion will constantly arise for the use of the authority conferred by the statute.

In some instances, patients have voluntarily prolonged the period of their treatment, believing that they were not sufficiently recovered to enable them to withstand their old enemy. This was done with our approval, and in accordance with our observation and opinion that in very many cases the period of treatment should be longer even than six months. In the majority of cases, as seen in the hospital, the degeneration, whether mental, moral, or physical, is too great to allow of its being easily overcome by a few months of treatment and abstinence, with regularity of habits.

The paroled patients continue to find employment in the various departments of the hospital and in the broom shop, as hitherto. The addition to the broom shop, not quite completed at the time of the last annual report, has demonstrated its value to those of the patients who, while not sufficiently improved to allow the customary full freedom within the limits of the hospital grounds, are yet capable of busying themselves about something in the nature of work, occupation being so essential to our continued happiness and well being.

TASTE DEPRAVITY OF INEBRIATES.

The use as a beverage of "finish," a weak solution of shellac in spirit employed by French polishers, is an old story, but we believe that its use for that purpose has fallen into abeyance in consequence of new regulations made by the in-

land Revenue to prevent its sale for the purpose of drinking. Similarly the drinking of methylated spirit, a horribly nauseous concoction, increased, nevertheless, until it became necessary to add a stronger dose of methyl. A still more inconceivably repulsive form of tippie was the spirit drawn off museum preparations, and yet we believe that drinking of that beverage has been the death of many museum porters, and it is a long-time reminiscence that the Royal College of Surgeons, Ireland, on the appointment of a new museum curator, discovered that several hundred pounds worth of its specimens had been destroyed by the abstraction of the spirit from the bottles, the past curator having been a confirmed inebriate. The latest advance in the direction of a new intoxicant is the drinking of petroleum oil, a practice which is stated to be rapidly growing to the dimensions of a great national vice in France. The taste of the liquid is absolutely repulsive, but to the Britisher who has tasted the abominations which are drunk with avidity and craved for by the French working classes, it will be obvious that nauseousness is not, of itself, a bar to the use of any beverage once that the taste has been broken-in to tolerate the liquid. The worst of the new intoxicant, from a social point of view, is that petroleum, taken in any reasonable quantity, does not appear to be greatly detrimental to health. It is said that the drunkenness which it produces is of the morose and quarrelsome type, and not of the jolly character which arises from alcohol, but the fit is quickly slept off, and the victim awakes apparently not much the worse for his "outing." — *Med. Press and Circular*.

OPINIONS OF LEADING MEDICAL TEACHERS ON THE USE AND ABUSE OF ALCOHOL.

The following was published in *The Voice*, of New York, compiled by J. H. W. Stuekenberg of Cambridge, Mass.:

So rapid is the progress of scientific temperance in Ger-
Vol. XXI. — 23

many that it looks as if it would require a specialist to keep pace with its development. The medical profession are beginning to realize what awful devastations are made by the drinking customs, and are considering their responsibility for checking the evil. The literature on the subject is characterized by the usual thoroughness of German scholarship. It is the scientific investigation of stubborn facts and their causes which has led professors, physicians, directors of asylums and of penal institutions to oppose the traditional views and habits of the people and strenuously advocate total abstinence.

Before giving some of the latest utterances of the medical profession, a statement of Prof. Dr. L. Meyer, of the university of Goettingen, is here quoted. It is found in the *Deutsche Rundschau*. The professor shows by statistics that light alcoholic drinks do not diminish the consumption of stronger liquors.

His article discusses the increase of insanity. The fact that insanity is less frequent among barbarous nations he thinks in some measure due to the absence of alcoholic drinks as a common beverage. Then, turning to China, he says that it has comparatively few insane, and this he attributes partly to the fact that alcoholism is scarce. He quotes Dr. Lockhart, of Peking, who affirms that alcohol is almost unknown in China. "A physician in Peking saw only two cases of alcoholism during a residence of eight years; a large public hospital in seven years received only eight patients whose sickness was in any way connected with intemperance." Speaking of the evil effects of alcoholism, the professor says:

"The ethical factor in the alcohol problem is not discussed here. . . . If there could be any doubt that the drinking of alcohol has increased in extent and hurtfulness, it must vanish in view of the fact that the disease due to alcohol — chronic alcoholism — was not known to physicians before the second or third decade of this century. The striking phenomena of this disease could not have escaped physicians if many cases

tion of Gold," are most graphic papers of great value in the March number of Appleton's *Popular Science Monthly*.

The *New Voice* grows in general excellence and attractiveness, and its value is more and more appreciated by its readers.

The *Scientific American* is a family paper for all who are interested in scientific growth and development.

"NERVOUS AND MENTAL DISEASES." By Archibald Church, M.D., Professor of Clinical Neurology, and of Mental Diseases in the Northwestern Medical School (Chicago Medical College); Professor of Neurology in the Chicago Polyclinic, Neurologist to St. Luke's Hospital, etc., and Frederick Peterson, M.D., Clinical Professor of Mental Diseases in the Woman's Medical College, New York; Chief of Clinic Nervous Department, College of Physicians and Surgeons, New York. 8vo, cloth, pp. 843, with 305 illustrations; price \$5. W. B. Saunders, publisher, 925 Walnut Street, Philadelphia, Pa.

"THE DAWN OF REASON; OR MENTAL TRAITS IN THE LOWER ANIMALS." By James Weir, Jr., M.D., Owenboro, Ky., author of "The Psychological Correlation of Religious Emotion and Sexual Desire," etc. The Macmillan Company, New York, N. Y. 1899. Pp. 234. Price \$1.25.

The author has in this work presented to the general reader, in a clear and concise form, evidence of the mind and mental action of the lower animals. In his discussions of Psychology he has carefully eliminated metaphysics and avoided all data that were without value, and only used such as he had absolute confidence in as to their accuracy. He does not claim infallibility, but gives the results of his twenty years' study and observation in this line. The book is well written, and the matter is well arranged, and we can heartily recommend it to those who want a readable, interesting, and semi-scientific work on the subject.

Editorial.

INEBRIETY AND INFLUENZA.

The present epidemic of influenza has proved to be very fatal in cases of moderate and excessive alcoholic drinkers.

Pneumonia is the most common sequel, breaking out suddenly and terminating fatally in a few days. Heart failure and profound exhaustion is another fatal termination. One case reported to me of an inebriate, who, after a full outbreak of all the usual symptoms, drank freely of whisky and became stupid and died. It was uncertain whether cerebral hemorrhage had taken place, or the narcotism of the alcohol had combined with the disease and caused death.

A physician appeared to have unusual fatality in the cases of this class under his care.

It was found that he gave some form of alcohol freely, on the old theory of stimulation. Another physician gave all drinking cases with this disease alcohol, on the same theory, and had equally fatal results. It has been asserted that alcohol as an antiseptic was useful in these bacterial epidemics, but its use has been followed by greater depression and many new and complex symptoms. The frequent half domestic and professional remedy, hot rum and whisky, has been followed by more serious symptoms and a protracted convalescence. Many facts have been reported showing the danger of alcohol as a remedy, also the fatality in cases of inebriates who were affected with this disease.

The first most common symptom seems to be heart exhaustion and feebleness, then from the catarrhal and bronchial irritation, pneumonia often follows.

The following curious case comes under my observation:

A periodic inebriate whose drink periods occurred every three months was taken with the grip, also aggravated catarrhal symptoms and muscular pains at about the time for the return of the drink craze.

He was kept in bed three weeks and treated by salines and baths, and kept alarmed at the prospect of death from pneumonia. Then permitted to go out under great restrictions. He recovered and for a year has had no return of the drink craze. The influence of the disease at this time was sufficient to break up the drink storm.

The experience of this epidemic confirms the facts noted before, that inebriates and drinking men generally have low vitality and resisting powers to disease. They are always the first to succumb to any violent strain or expenditure of force by the body. They have no reserve power, and the heart and lungs show this most quickly.

The treatment of epidemic disease by alcohol, especially inebriates, is simply intensifying the debility present and lowering all vitality.

These are clinical facts that can be confirmed by every careful observer.

INEBRIETY IN FAMILIES OF NOBILITY.

In one of the leading quarterlies there is a very significant paper on the decay of the leading families of Europe. While this is only a natural sequence of causes, both physiological and social, the prominence of inebriety in these cases gives it a special interest.

It appears that inebriety and gambling are the most prominent features of the final collapse of these families. One old house of Austria had two generations of opium inebriates. At the final breaking up the last member, a prince, had one hundred and thirty pairs of trousers, two hundred and twenty

coats, and eighty pairs of shoes, and other equally numerous articles of clothing.

He appears to have spent most on opium and clothing, and his special pastime was borrowing and swindling his friends and tradesmen.

The female members of the family gave great attention to dress, and followed the changing fashions, using opium in the meantime with spirits, and dying early. Another French family dissolved apparently by the inebriety and marrying propensities of the father and two sons. For many years they were hard drinkers and constantly engaged in intrigues and alliances with women. The estate dissolved and death left a second son a pauper, who disappeared. The collapse of the family extended over two generations, and was complete in embracing every member, who all drank and showed sexual delirium.

A prime minister of England, who was of an old titled family and of great wealth, died from gout due to wine excess thirty years ago. His son and grandson have wrecked the estates and the family has disappeared. Both the son and grandson were gamblers and drank to excess and died, and the name is now only known to history.

Two old noted Scotch estates, whose history and names have been prominent for three centuries, have been sold recently by the sheriff, and the descendants have all disappeared. The same inebriety appeared in all branches of the family associated with reckless living and gambling.

This is the history of nearly all the old families of the nobility. In some there is a persistence of race stock and a renewal of vigor by intermarriage outside and more healthy living.

It would seem that inebriety is the most fatal of all diseases which destroy these old families. Gambling and speculating may involve the estates and cripple them, and political changes may dissolve and separate the family, but the name

continues and the family often appears again on the former plane of eminence. But when the inebriety breaks out, the rule is extinction, to which there are but few exceptions.

These old families are governed by the same laws of dissolution seen in all circles, only they are supposed to be more stable and persistent, owing to more settled surroundings. When they begin to dissolve, they fall apart more quickly and have very little vitality to transmit to the next generation.

CAPITAL AND INEBRIETY.

It is evident in many ways that managers of large moneyed interests and capitalists are taking up the temperance question practically in demanding total abstinence of all responsible persons who handle property. Business managers, responsible clerks, partners, and persons occupying places of trust are regarded with increasing anxiety, particularly if they are club men and are known to be users of spirits. The first qualification of an aspirant for a good position is, What are his habits, is he a total abstainer? Often inferior men secure positions because they are abstainers, while men, brilliant, capable, talented, who are moderate drinkers, fail.

Mercantile agencies rate low all companies and businesses managed by moderate drinkers. Railroad and all transportation companies are rapidly throwing out all users of spirits and making total abstinence an imperative qualification for service. Several insurance corporations, and some of the largest banking companies in the country, employ only total abstainers. The stockholders of a leading company called for the resignation of two leading officers because they were moderate drinkers and club men.

In a list of twenty defalcations in New York and vicinity, sixteen of the defaulters were users of spirits, and ten were club men.

In business failures of twenty-six firms and corporations,

the responsible managers were drinking men in twenty-one instances. These facts were not made public, and yet the business sense of the community realized the danger in greater efforts to eliminate this source of peril to capital.

Some years ago a large manufacturing firm suspended, due to the bad management of a moderate drinking president. Since then they have started again and have become very prosperous. One of the rigid rules is, no drinking man shall be employed in any capacity.

Every year this fear of drinking men is increasing, and every year capital is demanding that total abstainers should only be employed.

In this there is no sentiment or theory, only cold, hard experience, which brings only one conclusion, repeated over and over again, namely, that moderate drinking men are dangerous, untrustworthy, and unreliable.

Science points out the reason in the anaesthetic action of alcohol and diminished sensory acuteness, lowered powers of judgment, and enfeebled moral perception. They are poisoned, disabled, and unfit for work which requires the best judgment and capacity of the brain. Capital has no knowledge of these reasons: it only judges from the facts of experience, and the more wisely it observes the perils which confront it, the more fear is manifest in reliance on moderate drinkers. In striking contrast to this is the action of a learned board who placed at the head of a great educational institution a brilliant moderate drinker. Other learned boards have put similar men in positions of great trust. Within a short time two of these brilliant moderate drinkers who were heads of great institutions of learning have resigned, leaving heavy burdens for their successors.

A professional and educational sentiment has not risen above theories and turns away from the teachings of science and the warnings of reformers as foolishness. Some day a great awakening will take place. Experience will sustain the

teachings of science, and the danger and folly of trusting the moderate drinker as sound and capable will be fully recognized and put into practical application in all the workings of life.

HALF TRUTHS.

Recently we have received a number of papers which are good illustrations of the partial recognition of the truth and the reluctance to admit facts that are opposed to previous theories.

It is the same psychological history in which every new truth is first denied and then admitted as partially true and finally is accepted as true.

A certain number of persons never change their conceptions of truth. The facts they once learned are the same yesterday, to-day, and forever. Another class admit that new evidence has changed former theories, but the old theories contain some truth, and that a mixture of old views and new ones embody the real facts.

A great many persons never admit a radical change of theories; they recognize that alcohol may be a poison and inebriety a disease, but persist in the belief that alcohol is a food and stimulant, and therefore valuable; also that inebriety is a moral disorder and under the control of the will, hence only a disease in part and in certain conditions.

They are in the second stage of awakening or evolution, and always manifest great eagerness and energy to support and defend their views.

In the papers received this fact is very apparent in the skillful setting forth of evidence favorable to their theories and under-rating of opposite facts.

Sncers, doubts, and denials of contrary truths are only evidence of weakness, and calling opponents cranks and extremists is usually descriptive of their own mental condition.

Often such men make a show of great candor and speak of their questions as settled by uncontrovertible evidence.

Statistics and experiments in the laboratories, which sustain their theories, are given a very high place, while opposite experiments and statistics from equally good sources are regarded with suspicion and doubt.

It is curious to observe the dogmatism of men who are not in a position to become experts. Thus an oculist, a teacher of obstetrics, an army surgeon, and a country practitioner have each written very authoritatively in defence of alcohol and condemnation of those who differ from them.

Another quite prominent man denounces alcohol in the young, but urges its use in old persons, and condemns all advocates of the theory of the disease.

These are the doubters who are mentally unable to keep up with the progress of research, and stand far back in the rear, shouting to those in the front line what is true and what is not.

Some persons assert that they are not total abstainers as evidence of impartiality and ability to judge. This same egotism extends to the most degenerate inebriate, who never doubts his ability to know what inebriety and alcohol is.

Here, as in other fields of research, the bitter critics are least qualified to judge. It is a hopeful sign to find men partially converted and willing to acknowledge some disease in inebriety and some evil in alcohol. But to stop at this point and conclude that no other facts are possible is deplorable weakness.

AN ALCOHOLIC PROBLEM.

A man forty-five years of age, married, with four children, a manufacturer, and wealthy, has distinct drink paroxysms which last eight or ten days.

They begin with beer and wine, then whisky, and stupor, associated with mental and muscular feebleness. Then insomnia and delirium comes on.

No special delusions, but intense activity and anxiety about the details of his business.

He drinks, at fixed intervals, small doses of whisky, and never seems stupid, but is violent in his actions. From the slightest suspicion he will attempt to punish and injure anyone. He goes about his factory and on any provocation will beat and strike, and would kill were he not restrained.

This violent homicidal period lasts three or more days, and terminates in sleep and restoration. An interval of total abstinence of from six to ten months follows, during which he is generous, kind, and very thoughtful of every one in his service and in his family.

He has been to two asylums for inebriates, and six months under treatment in an insane asylum, without results.

These homicidal drink attacks return the same, and are growing more serious. He has injured some members of his family and several servants in these attacks, and requires the most careful watching and restraint at times.

It was found by accident that a day or more of opium narcotism completely neutralized and broke up this paroxysm.

After three days of extreme exhaustion and feebleness he recovered. The next attack was aborted in the same way, but the third attack was followed by the use of opium in small doses.

This man had a dread of opium addiction, and a council of physicians was called. The opium was removed, another drink attack came on, and the same violent symptoms followed. It was finally checked by opium, and he then consented to continue its use.

He is now, four years after, an opium inebriate, conducting his business quietly, and is uniformly kind and rational. He has used no spirits, but regrets his opium-taking, and is anxious to stop it.

The question was this, Should he be treated for the opium addiction, and after its removal be subject to the return of the

drink craze, with its probable homicidal symptoms, or continue as he was, with the certainty of invalidism and increasing incapacity in the future.

This problem is yet unsettled, and this man and his family are asking counsel from all persons who are supposed to be able to advise.

SCHOOL BOOK CONTROVERSY.

In the rational, reasonable controversies which have centered about the school books which make the evils of alcohol prominent, some very interesting opinions are urged.

One class of objectors acknowledge the value of teaching the danger of alcohol in the public schools, but think that it is given too much prominence, that the attempt to give technical knowledge of the action of alcohol is impractical, and fails to have the effect intended.

Examples are cited of descriptions that are practically unintelligent to any except medical men. They also urge that other topics are more practical and can be taught easier. Also that the impressions given in many text-books exceed the facts and give a wrong view, which reacts and fails to convey the real truth.

The supporters of this teaching acknowledge that the books may err in clearness and expression and proper proportion of facts which can be easily taught, but urge that the magnitude of the subject fully sustains the prominence given to it.

At present they claim that no hygienic study can be more important than the danger of alcohol as a beverage. They point to the fact that ten per cent. of all the male population use alcohol, to their injury, and four per cent. of women are also addicted to its use.

The evils that grow out of this are more fatal and serious than all other sanitary losses combined.

many that it looks as if it would require a specialist to keep pace with its development. The medical profession are beginning to realize what awful devastations are made by the drinking customs, and are considering their responsibility for checking the evil. The literature on the subject is characterized by the usual thoroughness of German scholarship. It is the scientific investigation of stubborn facts and their causes which has led professors, physicians, directors of asylums and of penal institutions to oppose the traditional views and habits of the people and strenuously advocate total abstinence.

Before giving some of the latest utterances of the medical profession, a statement of Prof. Dr. L. Meyer, of the university of Goettingen, is here quoted. It is found in the *Deutsche Rundschau*. The professor shows by statistics that light alcoholic drinks do not diminish the consumption of stronger liquors.

His article discusses the increase of insanity. The fact that insanity is less frequent among barbarous nations he thinks in some measure due to the absence of alcoholic drinks as a common beverage. Then, turning to China, he says that it has comparatively few insane, and this he attributes partly to the fact that alcoholism is scarce. He quotes Dr. Lockhart, of Peking, who affirms that alcohol is almost unknown in China. "A physician in Peking saw only two cases of alcoholism during a residence of eight years; a large public hospital in seven years received only eight patients whose sickness was in any way connected with intemperance." Speaking of the evil effects of alcoholism, the professor says:

"The ethical factor in the alcohol problem is not discussed here. . . . If there could be any doubt that the drinking of alcohol has increased in extent and hurtfulness, it must vanish in view of the fact that the disease due to alcohol — chronic alcoholism — was not known to physicians before the second or third decade of this century. The striking phenomena of this disease could not have escaped physicians if many cases

had appeared before that time. On the intimate connection between insanity and chronic alcoholism we have the most trustworthy evidences. From fifteen to twenty per cent. of the inmates of insane asylums of Germany belong to this class, while the statistics of England and Switzerland show a still larger proportion.

“The consumption of alcohol has been decidedly increased in all civilized lands within a short period. In Holland the use of distilled liquors increased per person in seventeen years, from 1864-1881, about thirty per cent.; in Belgium the consumption in the last forty years was more than doubled; and, most surprising of all, in the wine country, France, the increase per person during the twenty years from 1860-1880 has risen from four to seven liters, or about seventy per cent. In Prussia the amount consumed increased in fifteen years, 1865-1880, from eight to ten liters a head, and at the same time the consumption of beer increased from thirty-seven liters a person to eighty-eight. Therefore the opinion that the lighter alcoholic drinks, especially beer, decrease the consumption of distilled liquors is proved to be a mistake — everywhere a marked increase in the consumption of both has taken place.’”

Naturally the lighter alcoholic drinks cultivate a taste for the stronger liquors. Those who make statements in conflict with the indubitable facts of statistics must either be ignorant of these facts or else they attempt to pervert them in order to apologize for their own drinking habits.

Continental physicians who speak German have formed an association for the promotion of total abstinence. Their first convention was recently held in Frankfort. The January number of the valuable monthly, *Internationale Monatschrift zur Bekämpfung der Trinksitten*, published in Leipzig, gives significant utterances of some of the members. Dr. P. J. Moebius, of Leipzig, declared that the physician who is

a total abstainer ought to make no exception in demanding total abstinence.

" He ought not to censure the laborer who drinks distilled liquors, and excuse the wine and beer guzzlers. He should, rather, first of all oppose the drink customs and the social obligation to drink which are prevalent in the upper circles; for mere argument avails nothing so long as among officers, students, and others a certain obligation to drink continues in the most pernicious and most revolting form. Using constraint to make men drink should be condemned unconditionally by the physicians, and be called by its right name, an abomination.

" The physicians ought not to join in the songs of the poets of intemperance or glorify such poets.

" No physician who is an abstainer should ever make the slightest concession to the alcohol customs of society, not even for the sake of appearances. Never ought he, as an act of politeness, to put the glass to his lips, and he should refuse to raise his glass when the command to do so is given. As Christians could not take part in the sacrifices of the Romans, so the abstaining physician should everywhere and at all times oppose the social obligation to drink, never so much as seeming to yield assent. Not a drop should he sacrifice, for in doing so he would bow his knee. Never let him pay the slightest attention to the drinking customs, whether he be at a hotel or at a family festival, in the presence of a king or of officials. " Never bow before the idol, but deny it before the mighty." Under such circumstances every drop promotes the tyranny of social drinking and thus also drunkenness. If this abstinence attracts attention and causes offense, the result will be the more beneficial, and the slight martyrdom to which the total abstainer is subjected will accomplish more than his preaching. The hands of others are tied; but the physician is free, therefore, he should be the first to oppose the social drinking tyranny."

Dr. Wehberg, of Duesseldorf, said:

"The movement in favor of moderate drinking has not accomplished the desired result of overcoming drunkenness.

"Total abstinence only will accomplish that end.

"Owing to the newly awakened consciousness of solidarity among civilized men, physicians are under obligation to set a good example respecting total abstinence from the use of alcoholic drinks, in order to lead men to more ideal conceptions.

"We have a right to look for the final victory of our efforts, since a development is evident in the fact that the view of natural science is taking the place of a metaphysical conception of the world. In order to attain a higher standpoint it is necessary for the use of spirituous liquors to vanish, just as, on the other hand, fuller knowledge, a higher standpoint having been attained, will lead mankind to reject alcoholic drinks."

That is, total abstinence is required to attain a higher stage of civilization, and a higher civilization will of itself, with its better knowledge, banish alcoholic drinks. It does look as if, for some of the most radical and most effective temperance doctrines, we shall be obliged to go to Germany and Switzerland. This is what Dr. Landmann, in Boppard-on-the-Rhine, says:

"The members of the Association of Abstaining Physicians reject the use of spirituous liquors in every form, and particularly declare the use of alcohol at the sick-bed a scientific error of the saddest kind. In order to war against this abuse, they earnestly appeal to the officers having charge of funds for the sick, henceforth, under no circumstances, any longer to permit the prescription of wine, whiskey, and brandy for sick members; but to resist to the utmost, according to the right given them by the laws insuring the sick, the taking of spirituous liquors, under the false pretext that they have a curative and strengthening effect."

Now we go to Switzerland, among whose physicians and

professors this same association has members. Dr. Bleuler, Rheinau, says:

"The treatment of chronic diseases with alcohol is contrary to our knowledge of the physiological effects of alcohol. There is no probability that its use will be beneficial, certainly its benefits have not been established. Often an injurious result is proved.

"It is not implied that there may not be some benefit in the use of alcohol in cases of sudden weakness with or without fever. But even in such cases the benefit is not demonstrated. At any rate, other remedies can with advantage be substituted for alcohol.

"The essential thing in the treatment of all alcoholic diseases, delirium tremens included, is total abstinence.

"The physiological effect of alcohol is that of a poison, whose use is to be limited to the utmost. Even the moderate use as now practised is injurious.

"The customary beneficial results unquestionably depend chiefly on suggestion and by making the patient believe falsely that the momentary subjective better feeling means actual improvement.

"Physicians share the blame of the present flood of alcoholism. They are therefore morally bound to remedy the evil. Only by means of personal abstinence can this be done."

Dr. A. Frick, professor in Zurich, is a careful student and an influential writer on alcohol. His statements are weighty. This is his testimony:

"In larger doses, alcohol is absolutely injurious in the treatment of acute fevers, especially in case of pneumonia, typhus, and erysipelas. They first of all injure the general state of the patient, they cause delirium, or increase it if already existing, and, secondly, they injure most seriously the organs of digestion and interfere with proper nourishment: thus they have a weakening effect, instead of prevent-

ing weakness which they are usually supposed to do. In case no alcohol is used, the convalescence is much more rapid. In no case has the benefit of treatment with alcohol been established. According to the view of the most eminent pharmacologists, the stimulating effect of alcohol consists simply in a local irritation of the mucous membrane of the stomach, similar to that produced by a mustard plaster."

The last testimony is that of Prof. von Speyr, University of Berne:

"Leaving out of discussion the question whether small quantities of alcohol are injurious, it is unconditionally required that the drinker who is to be cured must be a total abstainer.

"But if total abstinence is to be required of the drinker, then others must practice the same.

"Even if this view is quite generally recognized in our day, still it is to be observed that this knowledge has been acquired with difficulty.

"If it can be proved that even small quantities of alcohol are injurious, then the use of alcoholic drinks is unquestionably to be rejected and opposed.

"But even if such a demonstration is out of the question, and if it were eventually proved that there is some benefit in small quantities of alcohol, that would by no means overthrow the demand for total abstinence.

"Is any significance to be attached to the value of a small or the smallest quantity of alcohol in view of the enormous abuse of spirituous liquors and of the extensive evils produced by what is called moderate drinking?

"Is there a more effective weapon against alcoholism than total abstinence? Are any notable or permanent effects produced by moderate drinking or by abstaining only from distilled liquors?

"Finally, what is the injury of total abstinence? Why is it opposed? On what ground does it deserve opposition?"

DIFFERENTIAL DIAGNOSIS IN CEREBRAL HEMORRHAGE.

When the physician is confronted by an unconscious patient, and the diagnosis of hemorrhagic apoplexy is fairly presented, in the first place it must be distinguished from insensibility due to a variety of causes, such as alcoholism, uræmia, diabetes, opium poisoning, saturnism, and other toxic conditions, sunstroke or heat stroke, syncope, post epileptic stupor, hysterical coma, and pure simulation. Secondly, the different varieties of encephalic hemorrhage must be separated from each other. As intracerebral hemorrhage without ventricular effusion from ventricular hemorrhage, primary or secondary, intracerebral from meningeal, meningeal from cortical, and the different forms of cortical hemorrhage from each other and from large effusions. In the third place, encephalic hemorrhage must be differentiated from forms of apoplexy due to encephalic lesions, such as acute softening dependent on embolism or thrombosis, intracranial abscess, or new growths.

Toxaemias. — In a case of uræmic coma a patient may have swelling of the limbs, edema of the eyelids or face, the breath may have a urinous or beef-tea odor, the pupils are generally dilated, and, as a rule not without exceptions, one side of the body shows more paralysis than the other. Considerable evidence has been accumulated to show that affections of the nervous system strictly limited to one-half of the body occur during the course of some forms of Bright's disease. In this country Dereum has reported cases of hemi-chorea, hemiplegia, and unilateral convulsions. Raymond, Chautemesse, and Tennyson have reported a series of cases of unilateral affections, chiefly hemiplegia and epilepsy, apparently of uræmic or at least of renal origin. In not one, according to the reporters, could a trace of a strictly focal lesion be discovered. Schauffard has reported a case under the title of uræmic convulsions of the Jacksonian form. Such cases can be diagnosed only by the history of the case and a full considera-

tion of the signs and symptoms which indicate renal disease. Diabetic coma may be suspected if sugar is present in the urine, and especially if the patient has a history of glycosuria. Opium, chloral, lead, and other narcotic drugs or substances give rise to conditions of insensibility. Deep insensibility, with contraction of both pupils and the absence of indications of unilateral paralysis such as conjugate deviation, loss of muscular tone, and absence of the drooping of the face on one side, favor the diagnosis of opium poisoning; and yet Taylor has reported inequality of the pupils in one case of opium poisoning. Profound narcotism from opium and the coma of serious apoplexy present phenomena which are very similar. McEnroe, in speaking of the differential diagnosis between hemorrhage into the pons and opium poisoning, says that in pontile hemorrhage the coma is more profound. In narcotism it is possible to arouse the patient and to make him answer questions intelligently as far as he will answer them at all. The pulse is full and strong in the early stages of opium poisoning. While in hemorrhage it is wiry, sometimes slow, sometimes rapid, but not usually full, strong, and regular. In the former the whole body is bathed in perspiration and the respirations are less frequent than in hemorrhage. The discussion of the distinction of hemorrhagic apoplexy and the unconsciousness produced by chloral, cannabis indica, chloroform, hyoseyamus, or prussic acid, or nitro-benzole, belongs to works on toxicology.

A word might here be said about lead poisoning, as coma convulsions and other symptoms pointing to profound involvement of the brain are occasionally seen as the result of severe poisoning by lead; but here the presence of the lead line, the history of other forms of lead disease and the occupation of the patient are of great value if information with reference to these points can be obtained. Occasionally cases either of deep stupor or of excessive delirium are seen for which no cause can be assigned. These are sometimes due to toxæmia

of unknown origin. That they are not ordinary apoplexies can be recognized, but exactly what they are may be beyond the pale of diagnosis. In sunstroke, which by some is regarded as a toxæmia, the fact that the patient has been exposed to excessive heat, the great rise and steady increase of body temperature, the prostrated or collapsed condition of the patient, and the absence of unilateral phenomena serve as differential features.

ABUSE OF STRYCHNINE.

Dr. Hare, in the *Therapeutic Gazette*, makes a timely protest against the indiscriminate use of strychnia as a stimulant. He mentions the first improvement of the heart's action as encouraging its continuous use, until a condition of excessive nervous irritability appears.

“ Particularly is this true where very large doses of strychnine are administered to patients suffering from severe asthenic maladies, as, for example, in typhoid fever, tuberculosis, or epidemic influenza. In each and every one of these diseases a few doses of nux vomica or strychnine will frequently produce a noticeable improvement in the pulse and in the apparent condition of the nervous system, because strychnine being a powerful stimulant whips up the flagging nervous centers and causes them for the time being to perform their functions with greater activity. If the strychnine is persisted in, and ascending doses are given for a considerable period of time, in addition to the nervous symptoms which we have mentioned, there is frequently developed an irritant fever, and particularly is this the case when strychnine is given in full doses during the later stages of typhoid fever or during convalescence from this disease, when, as is well known, anything which disturbs the nervous centers is very apt to result in a rise of temperature. Physicians are wont to watch the patient taking large doses of strychnine in order that this dose may be cut down as soon as twitching of muscles of the forearms or slight stiffness at the nape of the neck is developed, but in

our experience, in asthenic patients, long before these symptoms appear there develops mental disquietude and a condensation of the larger cells, chiefly with degeneration of the cytoplasm; (2) a general cell atrophy of the body and nucleus; and (3) a good deal of change in the cell-body, with many neuralgia nuclei in the pericellular spaces. In the cases of alcoholism and alcoholic meningitis, it was not possible to make out a distinct type of cell degeneration, nor could this be expected, as these patients die not so much from the alcohol as from autotoxemias, and from the febrile process. — *Medical News*.

“UNDER THE GUNS; A WOMAN’S REMINISCENCES OF THE CIVIL WAR.” By Mrs. Annie Wittenmyer. Boston: E. B. Stillings & Co., 55 Sudbury Street.

This is a very interesting volume by a strong-minded, clear, executive woman. It is composed of sketches and incidents of the hospital and battlefield, so graphically written and so literally true as to rouse most intense interest and admiration. All such works give new light to the history of the events in which they were associated, and bring out many new phases of the medical side that would be forgotten otherwise. This book will be a revelation of the possibilities of woman’s work on the field of battle and in the hospital, and will be a monument to the author’s memory when this and many other generations have come and gone. The rare talent and personality of the author appears in every page, and in many ways the book is a psychological revelation to students of mental diseases.

The *Homiletic Review* merits the warmest praise and commendation for its most attractive contents and valuable papers from the ablest writers and thinkers of the age.

“Politics as a Form of Civil War,” “Racial Relationships and Peculiarities of the People of the Balkan Peninsula.” “Social Evolution of the Colony.” “Increase in the Produc-

They also urge that the theories of the past are so firmly believed in by the masses that scientific research to the contrary makes but little impression.

Only by strongly stated facts taught to children can the subject be brought into prominence before the parents, and investigations encouraged.

It is affirmed that no statements of the injuries following the use of alcohol can exceed the facts which scientific research and practical experience will not confirm.

In these discussions the personalities of the disputants are very prominent. The moderate user of spirits cannot accept the statements of the evils of spirits, because they conflict with his personal conceptions.

The abstainer who from experience and observation finds only evil in spirits is equally convinced and emphatic in his opinion.

Scientific research is fortunately fast clearing up this realm of confusion.

Clinical Notes and Comments.

THE TREATMENT OF CHRONIC COCAINE POISONING, OR COCAINO-MANIA.

The following complete review of this subject is to be found in Sajous' Annual and Cyclopedia of Practical Medicine: The F. A. Davis Co., Philadelphia and Chicago.

"The treatment of the cocaine habit, or chronic cocaine intoxication, is very much more difficult. It is more essential to have complete control of the cocainomaniac and his actions than even in chronic alcohol or morphine mania. There is less to work upon in the brain and nerve centers of the chronic cocainist than in those of the chronic alcoholic or chronic morphinist. There is less mental and moral elasticity, less desire to be freed from the narcotic bondage, less consciousness of the bondage itself, a more helpless and hopeless wreck being difficult to find. Cocainomaniacs, however, are, in a few cases, cured without seclusion. In these hopeful cases there generally has been a greater stock of inhibition from the first. Again, the indulgence having been periodical and ordinarily provoked only by some recurrent pain or distress and leaving intervals of shorter or longer non-narcotic consumption between, inhibition has not been so paralyzed, and thus there has been more resisting power left. In the latter group of cases it is imperative to direct the treatment to the abolition or counteraction of the exciting influences.

In the mass of cases the main hope of cure rests in therapeutic seclusion. The patient must be treated as a diseased person. Diet, at first simple and readily assimilable, should be carefully attended to. Milk, with soda or lime-water and

effervescent if nausea and emesis are present; arrowroot or other farinaceous or malted food, and other peptonized preparations are excellent. Gradually, broths and plain soups, oysters, fish, poultry, and, lastly, mutton and red meat, with an ample supply of fruit and vegetables, may be given. But there are cases in which a non-fish-and-flesh dietary agrees better with the patient. Each case must be carefully observed to determine the most suitable dietic instructions.

In the first week, exercise and fresh air may usually be insisted on, with massage to improve the wasted condition of the muscles. Meals should be regular, and exercise graduated.

Alcoholic beverages are best avoided; and, though in a few cases, tobacco in limited quantities may be allowed to aid in staying the morbid impulse or crave, yet most cocaine-maniacs would be better without it in any form. Tobacco is apt, in many patients, to impair digestion and depress the heart's action, the healthy state of both vital processes being points of the highest importance in the treatment of this mania.

To combat the wearing insomnia of most cases I know of nothing better than the hot, wet pack. Of all the medicinal hypnotics, I have found phenacetin the most useful, in doses of five grains, repeated, if necessary, every hour; no more than three doses (fifteen grains) to be taken in one night. Other physicians have found chloral and sulphonal serviceable.

An important practical point is the method of complete withdrawal of the cocaine, which complete withdrawal is essential to cure. In most cases I have not felt justified in immediate withdrawal, though I have done this where practicable. I spread the reduction period over from seven to nine days, beginning, whatever the quantity which had been taken daily or how long, with a reduction of one-half. Dr. Welch Branthwaite informs me that in five cases he at once, after only one dose, stopped the cocaine, without trouble. These were cases in which morphine had also been freely used. In

the cases in which I gradually reduced the dose of cocaine, morphine had not been habitually taken in large doses. Where morphine is also freely and regularly taken, it is easier to withhold the cocaine without delay.

The best treatment of cocainism has been, in my hands, the administration of chloral in large doses. Opium was found to be feeble in its action, while some relief was obtained under the action of bromide of potassium by itself, or, better, in combination with the chloral. This latter alone is to be preferred, especially when there is weakness of the pulse. — Andrew Fullerton (*Lancet*, September 19, '91).

All complications must be attacked, but, in the main, besides hygienic measures, nervine tonics are indicated in the endeavor to restore the lost energy and will power which really constitute the disease. Of these tonics, nux vomica and strychnine are the most effectual. Arsenic also is useful. I have found this, as in other forms of narcomania, that an occasional replacement of the stronger nerve tonics by milder ones is advantageous; I mean such as quinine, calumba, and gentian. Galvanism has, in appropriate cases, its value.

Though it is often asserted that three to six months suffice to effect a cure, my observation has been that twelve months constitute the shortest time in which such a result can be hoped for. There are, at the same time, a few exceptional cases in which a good result has been secured in a shorter period.

Medico-Legal Relations. — As many cocainists will not apply for curative detention of their own accord, it ought to be the duty of the constitutional authorities to lay hold on these miserable and utterly helpless diseased persons, and insist on their reception and therapeutic seclusion for a given time, in a retreat, home, or hospital provided for the special treatment of such cases, with provision for persons with limited resources and for the very poorest. Such a provision would, in the long run, prove as economical as it would be invaluable to the welfare, physical and moral, of the whole community.

I am unaware of any trial for murder or for administering cocaine with intent to injure another person; but cocaine has been employed to commit suicide. It has been stated recently that forty cocaine-maniacs appeared in the police courts of Chicago within the period of a few months in 1897. The habit was said to have been induced, in some cases, by the use of popular preparations as cures for colds, etc. In the charters of various special institutions in the United States power is given to the managers to receive and compulsorily detain habitual inebriates who are addicted to excess in any narcotic or inebriant, including cocaine; but in England only excess in alcoholic liquors renders applicants eligible for admission into retreats under the voluntary provisions of the Inebriates' Acts.

HYPNOTISM IN THE TREATMENT OF INEBRIETY.

Dr. Rybakow draws the following conclusions from cases under his own observation, as well as from the literature on the subject: (1) Alcoholics are very susceptible to hypnotism, and subject themselves to hypnotic influence much more readily than many other patients. (2) Hypnotism is a very good remedy in the treatment of alcoholism. (3) The favorable effect of the treatment shows itself in the improvement of the subjective symptoms, the disappearance of the depression, of the apathy, and finally, in the complete loss of the thirst for alcohol. Sometimes one sitting suffices not only to overcome the desire for the habitual portion, but also to break off acute attack. (4) By repeating the sittings, one may at times delay the patient's cravings; the intervals, however, vary, depending entirely upon the individual characteristics. (5) Complete cure by hypnotism, according to the experience of the author, is seldom obtained; relapses also are proportionately frequent. However, other authors report instances of complete cure by hypnotism. The duration of the treatment depends especially

upon the degree of degeneration: the milder the degeneration, the more positive and lasting the cure. (6) Relapses are most frequently noticed in patients under this treatment when the sittings are discontinued too early. (7) In the treatment of the craving for alcohol by hypnotism, the utmost care should be taken in reference to the promptness of the sittings. (8) The hypnotic treatment may be instituted at any time: it is, however, better that the sitting take place during the state of sobriety. At all events, it should be delayed until the agitation and hallucinations have subsided. — *Charlotte Medical Journal*.

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 spe-

cial 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.

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SOME CAUSES OF CONGENITAL DEFORMITIES.

Dr. Barnes read a paper on the above topic in the Section of Children's Diseases at the Philadelphia meeting of the American Medical Association. In the discussion of the paper, Dr. Bedford Brown, who has since died, made the following excellent remarks:

To arrive at any clear comprehension of the nature of the causes of congenital deformity, we must trace back those causes to the origin of man, to be found in the union of the male spermatozoon and the female ovule, and the processes of protoplasmic formation and cell growth evolved by the vitalizing influence of this union. Practically, it may be accepted as a fact that the healthy evolution of the fetus requires the union of a perfect ovule and an equally perfect spermatozoon. And, on the contrary, that a defective ovule and spermatozoon, though capable of fructification and to a certain extent development of a living being, that living being will be defective in some of its parts.

Hence, in tracing the causes of congenital deformities, one must go back to prime causes as well as intermediate causes. What is here understood as prime causes are certain defect-seated in either the spermatozoon or ovule, one or the other, or

both. What is meant by intermediate causes are such changes as may occur during gestation impairing the growth of certain parts of the fetus.

In regard to the real nature of the primary causes, no one with our present knowledge can determine with any degree of accuracy, as we are not informed of the physiologic process in operation after the union of the male and female products. All we can say is that after this union takes place, then fructification results, and this means the development of protoplasm and the beginning of cell growth, and whatever arrests or impairs protoplasmic formation and cell growth will cause fetal deformity.

This law, I think, holds good both in ovule and spermatozoa, and in the intermediate growth and development of the fetus *in utero*. Thus, whatever influence will impair the formation of protoplasm or cell growth, as alcohol, injury, infectious disease, or inability of the mother to perfect fetal development, will produce this result. Great mental or physical shock, excessive alarm or fright, or physical injury of the mother would, during the earlier months of gestation, seem to be capable of impairing the nutrition of the fetus in a degree to cause deformity. Thus the interruption of the fructification and growth of an artery in the process of fetal development will suspend the development of the organ intended to be supplied by that artery, and we have either a partial formation or absence of the organ, known as congenital deformity.

We come now to the consideration of some of those influences which impair the vital organization of the spermatozoa and the ovule, and which become primary causes of congenital deformity. This is a very intricate question, but one not incapable of solution.

Alcoholism, or habitual intemperance, rank first among the deleterious influences which effect the vital endowments of the original germs. You will find congenital deformity nowhere so common or existing in such hideous forms as among the

habitually intemperate and degraded of the world's population. The effects of the constant saturation of the system with alcohol must tend to impair the vital organization of the spermatozoa and ovule, as it does any other organ of the body. On the other hand, habitual intemperance on the part of the female when pregnant must tend to impair the development of the fetus *in utero* by impairing cell growth. Again, we see children born of perfectly temperate parents, with congenital deformities. In a family of five children, born of temperate parents, all were defective in a more or less degree. The maternal grandfather was an habitual drunkard. The father, an intelligent man, was an eight-month child and very delicate until nearly maturity. The mother was a feeble, delicate woman who was never capable of nourishing the fetus *in utero* in a proper manner. The causes of deformity in this case were probably both primary and intermediate in character, and were due to hereditary influences descending from the grandfather and inability on the part of the mother to sustain the nutrition of the fetus.

Heredity must unquestionably be classed among the chief causes of congenital deformity. We are capable of inheriting the abnormal as well as the normal traits of mind and body of our ancestry. Hereditary tendencies of this kind must be transmitted through impressions made either on the ovule or spermatozoa, and impressions made upon these by hereditary influences must be of a permanent character and affect, in a positive manner, the growth and evolution of the fetus. Hence, heredity becomes one of the most important factors known for the transmission and perpetuation of mental and physical types both normal and abnormal.

Where the starting point of these hereditary tendencies in families begins is a difficult matter to determine. The tendency may date its origin, in many generations, back to the sins of an ancestor. He may have been a drunkard and impressed upon his offspring tendencies which through genera-

tions became fixed hereditary traits to be transmitted to all posterity. In such families bearing the burden of hereditary defects we see congenital deformities of the brain cropping out in successive generations, the origin of the hereditary tendency to which extends so far back that no man knows the origin, and it may skip one generation and appear in another. In these same families there will appear physical deformities otherwise. In a family of my acquaintance there has been for generations, deformities of the internal ear and deafness. Then again, these hereditary tendencies disappear suddenly by intermarriage with healthy individuals.

In summing up the remote and direct causes of congenital deformity, their nature and action, I think that the immediate or direct cause of congenital deformity may be in every instance attributable to defects of nutrition of the fetus. The remote causes producing these defects of nutrition may be varied, often widely in character, and even of an entirely opposite character. Thus, as has been attempted to be shown in the course of this paper, the various causes primary and intermediate are due to such influences as alcohol, shock, infectious disease, injury, fright, consanguinous marriage, incestuous connection, all of a widely different character. The tendency of all these is to obstruct nutrition of the fetus by impairing the process of cell growth and formation of protoplasm somewhere in the process of gestation, either in the original germ or during the growth of the fetus.

DRINKING AND INSANITY.

From Dr. G. Fielding Blanford's lecture on "The Prophylaxis of Insanity," delivered to the Royal College of Physicians on the 4th inst., and reported in last week's *Lancet*, we take the following important extracts:

"After hereditary transmission there is probably no cause of insanity which exercises so potent an influence as alcoholic drink. To estimate the extent of this we must go to the med-

ical reports of the medical superintendents of our pauper asylums, many of whom mention it as bringing a large proportion of patients under their care. The proportion differs much according to the locality and the class of population from which the patients are drawn. As we go from south to north the numbers increase, Cornwall, Devon, and Dorset furnishing the least. These are for the most part agricultural counties, with few large towns. When we examine the reports of asylums in the midst of large manufacturing towns or mining districts the numbers increase, for wages are higher, habitations and life unhealthy, and drunkenness prevalent. And it has been observed that the admissions from this cause are more frequent when trade is good and wages high. When the reverse is the case, or when strikes diminish the spending power of the workman, the number of the admissions falls. So long as the drinking remains as it is it will be impossible, I think, to say that insanity is diminishing, at any rate among the lower classes. The spread of temperance principles, the advance of education, the improved sanitation of dwellings and workshops, and the influence of wholesome recreation for the mind as well as the body, will, we must hope, gradually check the drinking that at present prevails; but I must not take up your time by dilating on this subject. That drinking has greatly diminished among the educated classes is beyond a doubt. A certain amount of insanity is produced still by alcohol, together with alcoholic paralysis and dementia, but there is far less among the higher than among the lower classes. The proportion, however, of drinking women is, I fear, far greater among the former than among the latter. If we look at the statistics of our public asylums the number of males whose insanity is caused by drink largely predominates, but of the alcoholic cases brought under our notice in private practice a very large proportion are those of ladies. And this will be the case till legislation enacts that such shall be compulsorily detained in inebriate resorts. At present scarcely one will place

herself under care and treatment, and the Act is almost a dead letter so far as women are concerned.

"It would be a good thing if all boys and girls with an hereditary taint were brought up to abstain totally from alcohol. There is always a risk of these neurotic individuals taking to drinking. What is insanity in one generation often appears as inebriety in the next, and they are not likely to give up easily such a habit and craving if once established. Often inebriety is directly inherited. I lately saw a young man aged twenty-four who was emerging from an attack of delirium tremens, one of many he had already had. He began to drink hard at the age of fifteen. His father and mother both drank themselves to death, and the son was following their example, and we have at present no law to prevent him. Such young people should be taught to abstain. It will be no hardship if they have never known what wines and spirits are, and they should be made clearly to understand and recognize the reason why such abstinence is enjoined. It is far easier to abstain from childhood than to revert to abstinence in later life."

INCREASED RISKS OF DEALERS IN ALCOHOLIC BEVERAGES.

Dr. Law, before the British Medical Society, read a paper, of which the following is an extract:

A joint inquiry of this kind was undertaken by the Scottish Life Assurance to determine the extra risk of insuring persons engaged in the sale of intoxicating liquors. The results were published in *The Journal of the Institute of Actuaries*, and otherwise made known to those interested in the subject. But I may briefly refer to them as showing the lines on which a more comprehensive inquiry into the whole subject of extra risk might proceed. In this case, as the point to be investigated was the influence of occupation only and not any question of disease, personal or hereditary, the co-operation of medical experts was not considered necessary. The investigation

was made by a committee of actuaries, who were furnished with particulars of all the assurance effected with the companies in the class of lives in question. The cases having been grouped according to occupation—publican, innkeeper, hotel-keeper, etc.—and arranged according to age, the numbers “exposed to risk” at each age were brought into comparison with the number of deaths, and from those elements were deduced the corresponding rates of mortality. A comparison with the rates of mortality among ordinary assured lives showed the extra risk of insuring persons of those occupations. The following results are typical:

TABLE II — Showing Increased Mortality of Publicans.

Age.	Annual Mortality.	
	Publicans.	Other persons.
30	1.48%	0.77%
40	2.59%	1.03%
50	3.08%	1.60%
60	4.59%	2.97%

Calculations were also made to show how the actual number of deaths compared with the “expected” number — that is, with the number of deaths that would have occurred among ordinary assured lives. In the case of the publicans it was found that the “actual” deaths exceeded the “expected” by no less than eighty-three per cent., the numbers being 430 and 235 respectively.

The causes of death compared with those of ordinary assured lives are shown in the following table. They are here given for the first time:

TABLE III.—Showing Cause of Death in Publicans.

	Actual deaths (Publicans).	Expected deaths (healthy males).	Percentage of actual to expected.
Diseases of the urinary organs.	26	9	289
“ “ digestive organs.	62	29	214
“ “ circulatory system.	46	24	192
“ “ respiratory organs.	64	30	213
“ of brain and nervous system.	91	48	190
“ of uncertain seat (cancer, etc.).	17	12	155
Zymotic diseases.	32	34	94
Sudden and violent deaths.	17	13	130
Tuberculous disease.	61	28	218
Causes not classified.	14	8	175
Totals.	430	235	183

The publican is exposed to late hours of business, to confinement in an atmosphere more or less heated and impure, especially toward night, and, above all, to the ever-present temptation to over-indulgence in intoxicating drink. These causes seem to entail upon him a largely-increased liability to consumption and to disease of every vital organ. — *Medical Examiner.*

THE TOBACCO HABIT AMONG THE YOUNG.

Whatever may be thought concerning the effect of tobacco smoking on the adult, the opinion that it is deleterious in the extreme on the young is unanimous and decided. Of late years juvenile smoking has been spreading like an epidemic in all countries of the world, and is attacking both the physical and moral health of nations. In France, in Germany, and in this country, efforts have been made to check its further inroads. In some parts of Germany, as also in portions of the United States, laws have been enacted prohibiting persons under the age of eighteen from smoking, and rendering it a punishable offense for anyone to give or sell tobacco to children. In France numerous societies have been formed for the suppression of the vice. In no country has this habit increased with the young to a greater extent than in England. The advent of the cheap cigarette is doubtless chiefly responsible for this state of affairs. To see boys of seven or eight years puffing their cigarettes is quite a common occurrence in London, and particularly is this the case in the East End. However, when a packet containing five cigarettes can be bought for two cents, the fact that smoking has become so general can scarcely be wondered at. Sir William Harcourt, in his last speech on the Budget, referred to the large increase of revenue received from tobacco, in these words: "I believe it is mainly due to the great increase in the consumption of cigarettes, which are especially attractive to our youthful population." He added: "I am told of one manufacturer who

makes two million cigarettes a day who hardly made any a few years ago." It has been proposed in Great Britain, as a remedy for the evil, that the members of the medical profession should make a move in the matter, and urge on the managers of schools the importance of special teaching exposing the harmfulness of juvenile smoking, and should also make such representation to Parliament and the Government as might lead to efficient legislation. It is difficult to see in what manner this vice can be checked among children unless by repressive measures. If the medical profession in this country were to exert themselves with a similar object in view the habit might be yet stopped. There is no question in the case of interference with a person's liberty, it is simply a matter of health and morals. In Paris, some months ago, at a meeting of the society against the abuse of tobacco, it was decided to submit a petition to the Chamber of Deputies praying that "all telegraph messengers and school boys should be prevented from smoking, and also that tobacconists should be forbidden to sell their wares to mere infants whose lips should know no other pleasure than the cheeks of their mother." Though the wording of this petition is rather curious, it is quite to the point. There is a humorous side to the question of children smoking. In a book on tobacco, lately published, is the following paragraph: "It was the custom in England about the middle of the seventeenth century for children going to school to carry in their satchel with their books a pipe of tobacco, which their mother took care to fill early in the morning, it serving them in place of breakfast. At the accustomed hour every one laid aside his book to light his pipe, the master smoking with them, and teaching them how to hold their pipes and draw in the tobacco." At the present day Dutch children smoke pipes, and little boys of five and seven years old calmly discuss these calmets of peace as they proceed to school. Still this does not alter the fact that smoking injures the health of the young. The excessive use of tobacco is harmful to many adults; it tends to deteriorate the moral

character in the same way as the inordinate use of chloral or bromide of potassium will deprave the mind, by lowering the tone of certain of the nerve centers. If this is so with grown men, how much more forcibly must the case apply to immature youths? — *Editorial in Pediatrics.*

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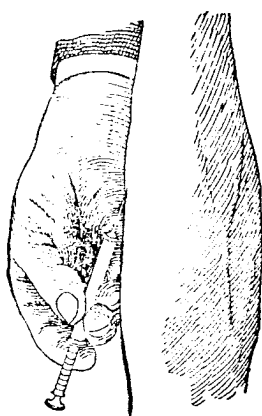
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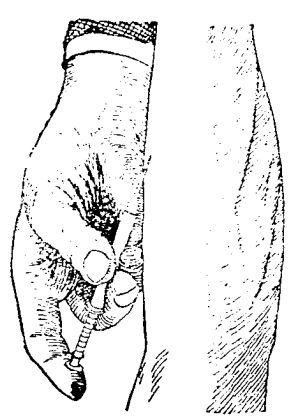
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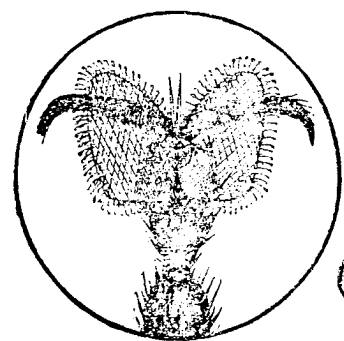
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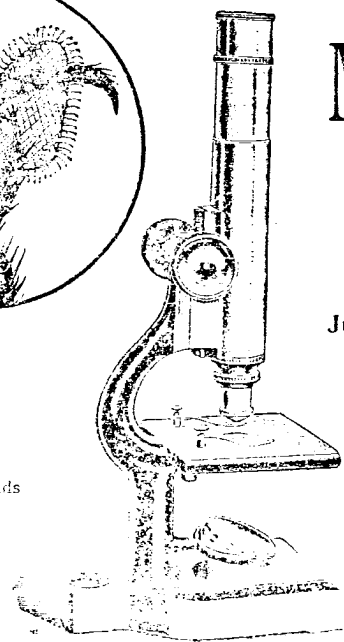


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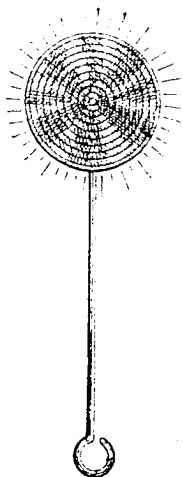
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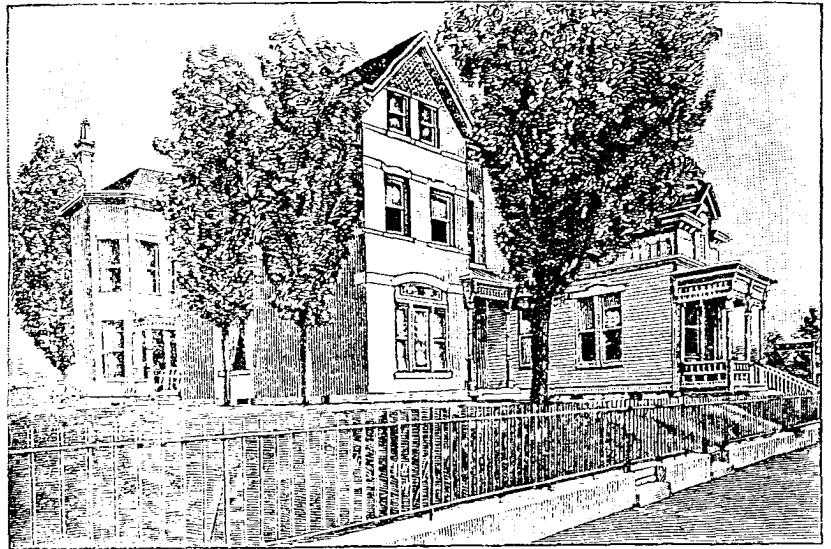
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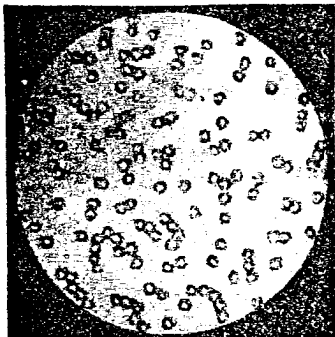
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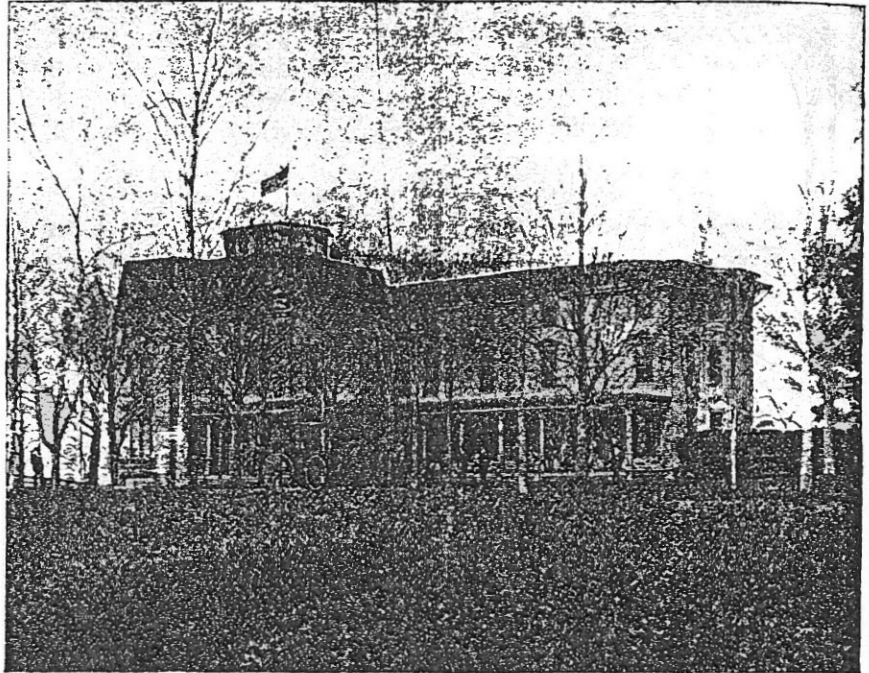
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