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

T. D. CROTHERS, M.D., Editor,
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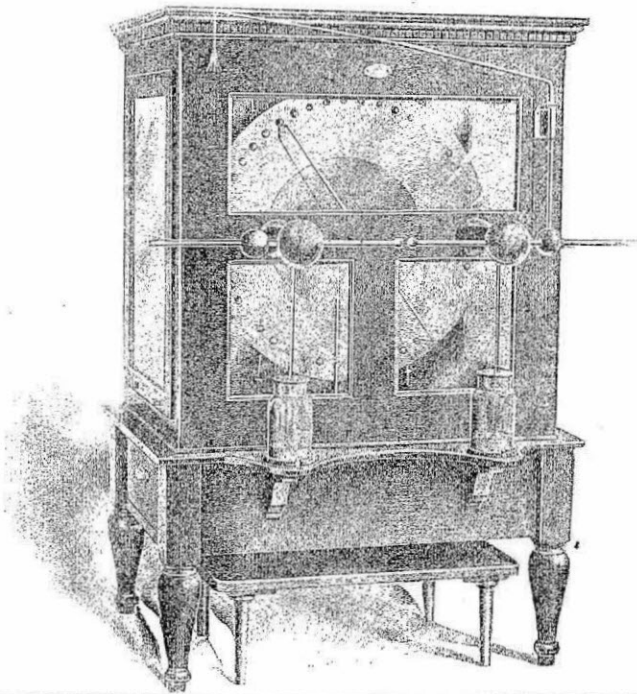
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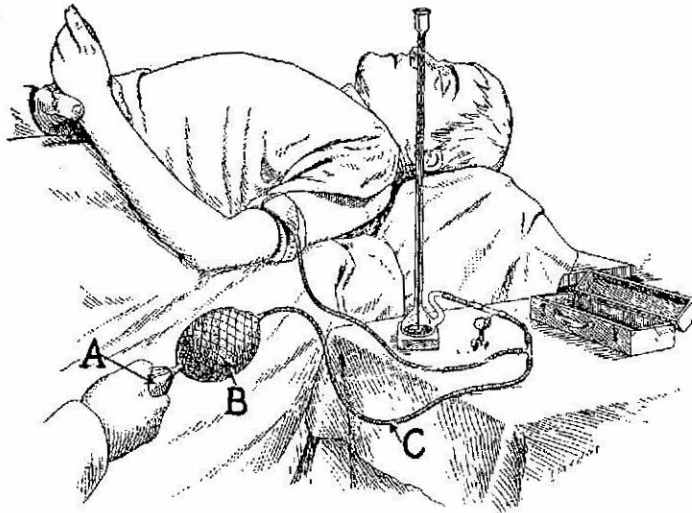
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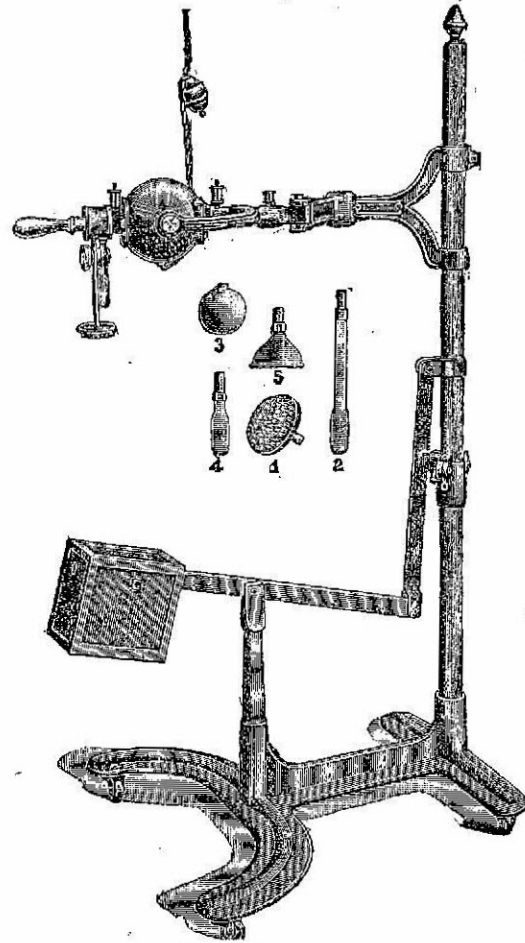
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This Journal will not be responsible for the opinions of essayists or contributors, unless indorsed by the Association.

SUMMARY OF THE EFFECTS OF ALCOHOLIC LIQUORS ON THE FUNCTIONS AND STRUCTURES OF THE HUMAN BODY IN SMALL, MODERATE, AND LARGE DOSES, BOTH IN HEALTH AND IN CONDITIONS OF DISEASE; ALSO ON THE DEGENERACY OF OFFSPRING.*

BY THE LATE N. S. DAVIS, M.D., LL.D., CHICAGO, ILL.,
Honorary President American Medical Temperance Association—Annual Address.

Ethylic alcohol, as it exists in the various fermented and distilled liquors, is the product of bacterial and saccharine fermentation. When taken into the stomach in a pure and undiluted state it acts as a direct irritant poison, as speedily fatal as undiluted carbolic acid. When it is largely diluted with water, as in beer, wine, whisky, brandy, rum, and gin, it is rapidly absorbed without chemical or digestive change, and is carried in the blood currents to every organized structure in the living body. It has been detected as alcohol in the blood,

*Read at the annual meeting of the Medical Temperance Association at Atlantic City, June 8, 1904. The author died a few days after this meeting.

the liver, spleen, pancreas, brain, heart, lungs, voluntary muscles, ovaries, testicles, and in the excretions from the skin, kidneys, and lungs.

It nowhere undergoes assimilation or conversion into nutritive material for the growth or repair of any of the natural structures of the body. Some of it is eliminated unchanged in the urine and in the exhalations from the skin and lungs. But by its active affinity for albumen, water, and oxygen, it unites with these elements, both in the blood and in the organized structures. By such union it diminishes the amount of free oxygen and hemoglobin, corrugates the corpuscular elements of the blood and lessens the metabolic changes in the tissues. So far as the alcohol unites with the free oxygen in the blood and retards tissue metabolism, it increases the proportion of carbon dioxide and water, and lessens both temperature and sensibility of all nerve structures, whether voluntary or involuntary, cerebral, spinal, or ganglionic. Assuming that the greater part of the alcohol taken was oxidized by direct union with the free oxygen in the blood and thereby converted into carbon dioxide and water with evolution of heat, it was generally claimed that it sustained the temperature of the body and quickened the action of the heart and was therefore a carbonaceous or respiratory food. This view was further sustained by the fact that individuals exposed to low temperatures after taking ordinary drinks of alcoholic liquors did not feel or realize the cold as much as when without such drinks. And yet, in the various vicissitudes and avocations of life, facts were constantly accumulating that proved that individuals taking the alcoholic drinks were frozen or even perished much sooner and more certainly than those in the same company who drank none. Such facts finally led to direct experiments with the clinical thermometer and soon demonstrated that the internal use of alcoholic drinks resulted in lowering the temperature of the body in direct proportion to the quantity of alcohol taken. When the quantity taken was sufficient to destroy life the tem-

perature was generally reduced five or ten degrees below the natural standard before life ceased. This effect in lowering the temperature was attributed to the simultaneous anæsthetic effect of the alcohol on the nervous structures, causing general relaxation of the peripheral capillaries and consequent increased heat loss, both by radiation and exhalation, more than sufficient to counterbalance the increase by oxidation of the alcohol. This, however, is only a partial view of the subject. If we keep in mind the fact that the free oxygen in the blood is the natural and necessary exciter of nerve sensibility, tissue metabolism, and muscular activity, and that animal temperature is the direct result of oxidations taking place in such metabolisms and muscular actions, we see clearly that so far as alcohol is oxidized in the blood or tissues it diverts just that much oxygen from its natural action in maintaining the metabolic processes of nutrition and excretion and of nerve sensibility by which the natural temperature of the body is sustained. Nor is this all, for the presence of the alcohol also lessens the transmission power as well as the sensibility of all nerve structure; diminishes muscular strength and activity, both voluntary and involuntary; renders the leucocytes less active, and impairs the vital or organizable properties of the protoplasm that constitutes the basis of all living matter, thereby retarding both vegetable and animal growth in the young, and encouraging the degenerations of structure from higher to lower organizations, such as the substitution of fatty and fibrous for nervous and muscular structures, extending to the sexual organs of both male and female, as seen in the imperfections of their children. The alcohol drunk by nursing mothers has been detected in the milk from their breasts, and in the blood of their nursing children. It has also been recently detected in the blood of a fœtus, received through the placenta from the blood of the mother. Such facts fully explain why two-thirds of the children begotten by habitual drinkers of alcoholic liquors are either born dead or die before they reach five years of age,

and a large percentage of the remaining third reach the age of maturity defective either in body or mind.

The deleterious effect of even small quantities of alcohol on the properties of both vegetable life and animal protoplasm is further shown by the fact that plants kept in a room the air in which is kept impregnated with the vapor of alcohol will not grow well, and if the soil in which their roots are placed is watered with much diluted alcohol the plants soon wither and die. And children given daily small doses of alcohol are retarded in their growth and rendered more liable to attacks of rickets, tuberculosis, and both nervous and febrile diseases, while in adults the daily use of sufficient alcoholic liquor, either fermented or distilled, to keep it present in contact with the protoplasm of the blood and tissues, uniformly diminishes their vital resistance to the causes of all infectious diseases and ultimately develops degenerative changes in almost every organ and structure of the body.

All the foregoing statements regarding the effects of alcohol on the structures and functions of the living human body are sustained both by abundant clinical observation and by experimental researches of scientific men in this country and in nearly all the countries of Europe. A careful analysis of all the facts not only shows that the presence of alcohol in the blood impairs every function, physical and mental, and every structure of the individual using it, but also extends the same impairing, degenerating influence to his or her offspring.

In the language of an editorial in *American Medicine*, March 26, 1904, "The pernicious effects of alcoholic intemperance in the parents manifest themselves in their children. These show a lack of vigor, retarded development, and a low degree of resistance, and above all hypersensitiveness and asthenia of the nervous system." G. Von Gunge of Basle states, as the result of recent investigations of the children of 103 families whose parents were liberal drinkers, that 24.2 per cent. were suffering from some nervous or mental affection;

29.3 per cent. were tuberculous, and a large proportion of them had carious teeth. The same eminent investigator furnishes very strong proof that a large proportion of the increasing number of mothers who cannot nurse their children are descendants from either drinking fathers or mothers, or from both. Kraepelin, with the aid of instruments of precision, has shown that so small a quantity of alcohol as one ounce diminishes the acuteness of all the special senses, sight, hearing, touch, taste, and smell, and also retards the mental processes of reason, judgment or sense of propriety, and of memory.

It not only thus acts as a paralyzing agent on the cerebral and mental processes, but it equally diminishes the muscular activity and strength. Dr. Max Kassowitz of the University of Vienna, after carefully reviewing the experimental work of the leading investigators in Europe concerning the influence of alcohol, shows that the mere oxidation of alcohol in the blood neither evolves any kind of physiological force or energy nor lessens the waste of the nitrogenous elements, and consequently performs none of the functions of a true food, either direct or indirect. He claims correctly that all physiological force or energy manifested in the living body is derived solely from the action of oxygen on the organized protoplasm in maintaining normal tissue metabolism; and as the presence of alcohol directly diminishes the metabolic processes in proportion to the quantity present, it correspondingly lessens the manifestation of every force recognized in the living body, and favors the degeneration of almost every tissue.

Consequently Dr. Kassowitz correctly designates alcohol as a protoplasmic poison and not food. If alcohol, as it exists in either fermented or distilled liquors, was capable of serving any of the functions of food, either direct or indirect, any healthy person ought to be able to live longer on water containing from five to twenty-five per cent. of alcohol than he could on water alone. Yet we rarely, if ever, see a periodical drinker who abandons both work and food and literally takes only

some form of liquor from day to day, who does not get sick and is compelled to stop in from one to three weeks; while men taking nothing but simple water have survived six weeks or more than forty days without either mental or physical disease. Of the same import is the well-known fact that in every climate and every country, wherever total abstainers and moderate drinkers (not drunkards) are found living in the same environment, either in civil or military life, the abstainers do more work, do it better, suffer less sickness, commit fewer crimes, and live an average of several years longer than the non-abstainers.

In 1895, Horace Wadlin, chief of the Labor Bureau of Massachusetts, under instructions of the Legislature of that state, made a full examination of the paupers, the insane, and the persons convicted of crime, in the poorhouses, the asylums, and the prisons of that state, and their relations to the use of alcoholic drinks. From his report to the Legislature made in 1896 we learn that he found 3,620 paupers, 65 per cent. of whom had been direct users of alcoholic liquors; 1,836 insane, 52 per cent. of whom had been users of the same kind of drinks, and 26,672 convicted of crime, 94 per cent. of whom had been habitual drinkers. It is fair to presume that if a similar examination were extended to all the states it would reveal an equal ratio of paupers, lunatics, and criminals for the whole country, an equal ratio of whom had been users of intoxicating drinks. If so, it would indicate the existence at the present time in all our states and territories of 101,360 paupers, being supported at the public expense, 65 per cent. of whom were made by the use of alcoholic liquors; 51,408 insane, 52 per cent. of whom had been habitual drinkers, and 746,800 criminals in the public prisons, 94 per cent. of whom had been made such by the use of alcoholic liquors. When we realize that the foregoing statistics relate only to the paupers, lunatics, and convicted criminals being supported in the public institutions, while there are quite as many more of both paupers and crimi-

nals, the first supported by private charity, and the second still at large preying upon the public in the form of defaulters, thieves, highway robbers, and murderers, and that more than 75 per cent. of the whole are traceable directly or indirectly to the degenerating and dulling influence of alcoholic drinks, aided by tobacco, cocaine, and opiates, we are only beginning to comprehend the amount of human privation, suffering, degradation, and destruction being produced by the poisoning influence of alcohol and other narcotics on the protoplasm of the human brain and blood, both of the drinkers and of their posterity. But a full comprehension of the evils is beyond the grasp of ordinary minds. For to the list of recognized paupers, lunatics, and criminals, must be added, at least, 50 per cent. of all the idiotic, the feeble-minded, the epileptics, the suicides and 90 per cent. of the murderers. Nor can we stop here, for it is claimed by all writers on practical medicine, during the last half century, that the use of alcoholic drinks constitutes one of the most active predisposing causes of diseases of the stomach, liver, spleen, kidneys, and brain, and of all infectious febrile diseases, including tuberculosis, pneumonia, and carcinoma.

It not only thus greatly increases the number of attacks, but their habitual use increases the ratio of mortality of those attacked from 25 to 50 per cent., thereby being responsible for not less than 100,000 deaths annually that are registered in the mortality tables under the names of tuberculosis, pneumonia, nephritis, diphtheria, typhoid fever, apoplexy, paralysis, cirrhosis, fatty and fibroid degenerations of the stomach, heart, and arteries. If we add to this 100,000 deaths to the previous lists of paupers, lunatics, idiots, feeble-minded, epileptics, and criminals, including more than 5,000 murderers and nearly double that number of suicides, we shall have a fair summary of the degenerative and destructive influence on the health, life, and morals of the people of this country each year by the annual consumption of more than 135,000,000 of gallons of

pure alcohol as contained in beer, wine, whisky, brandy, rum, and gin, costing the consumers more than \$1,000,000,000, with no other return except impairment of their own vitality and that of their children and an incomputable amount of mental anxiety and suffering by their wives and kindred. Did time and space permit, full proof of the correctness of the foregoing statements regarding the evils resulting from the use of alcoholic liquors could be presented in detail. It is useless longer to discuss the claim that alcohol in small doses, by undergoing oxidation, liberates heat or some force or energy and therefore is a food, while at the same time and in the same doses it is actually diminishing every known force and function of the living body. And it is worse than useless to longer listen to the ancient dogma that in small or moderate doses it is a cardiac tonic, stimulating and restorative, and only in larger doses paralyzing and poisonous—in other words, that all evils of alcoholic drinks “are caused by their abuse and not by their moderate use.” Is not the fact that 65 per cent. of the paupers, more than 50 per cent. of the insane, idiotic, and feeble-minded, 90 per cent. of the criminals, and the 100,000 who die annually from diseases produced, or rendered fatal, by the use of alcoholic liquors, sufficient evidence that such use, if repeated from day to day in any dose, is more destructive to human health, life, and morals, than all the other confessedly poisonous drugs in the materia medica? Is it not the fact that nine-tenths of the 50,000 or 100,000 drunkards in the United States of America have been made such by the deceptive and poisonous effects of repeated small doses of alcoholic liquor on the protoplasm of the nervous and other structures of the body? Oxidation and elimination through the various excretory organs are nature's modes of getting rid of all poisonous substances that gain access to the blood, whether engendered within or introduced from without. A small dose of alcohol or any other anæsthetic poison, if introduced into the blood through the stomach or in any other way, immediately lessens

the sensibility of all nerve structures and retards tissue metabolism, and at the same time begins to undergo oxidation and elimination through the skin, kidneys, and lungs. If the dose does not exceed the amount of alcohol usually contained in a single mug of beer, or a glass of wine, or in one or two ounces of whisky, its oxidation and elimination is generally completed in from 24 to 36 hours, and no permanent injury may follow. But if the dose is repeated, even once each day, it is sufficient to perpetuate the dulling effect upon both the cerebro-spinal and excitomotory nervous systems, and, by diverting a part of the free oxygen in the blood from its natural action on the protoplasmic processes, constituting nutrition and waste, it slowly but certainly leads to more or less tissue degenerations and lessened mental activity, with impaired vital resistance to the causes of all infectious and constitutional diseases. And so moderate an amount as three glasses of beer a day is sufficient to lessen the average duration of the drinker's life and to increase the degeneracy of his children. Consequently all habitual use of alcohol or any other anæsthetic or narcotic drug is an abuse injurious in direct proportion to the quantity used. And to longer talk of the harmlessness of the temperate use of fermented or distilled liquors, and the evils only in their abuse, is simply to perpetuate the fatal popular error that alcoholic drinks do no harm unless they cause actual intoxication.

The foregoing brief summary of the effects of alcoholic liquor on the functions, both mental and physical, and on the various structures of the living body, and on the degeneracy of the offspring of those who drink, is sustained by an array of evidence, statistical, economical, clinical, and experimental, that can neither be gainsaid nor refuted. Every standard work on chemistry, materia medica, toxicology, and medical jurisprudence published in the English language during the last half century declares alcohol to be an active poison, and certainly more deaths are reported as resulting from its use every month than from all other known poisons in a year; while the indirect

amount of human suffering, mental and physical, is beyond expression in figures or language. The fact that alcohol paralyzes or impairs the higher faculties of mind earlier than it does the mere physical forces renders its use most dangerous both to the user and to those with whom he may be in contact.

Then is not every place for its sale as a drink, whether licensed or unlicensed, a place dangerous to both public and private health and morals; in other words, a public nuisance that ought to be abated by the sanitary authorities and the courts? And is not its presence either in the private dining-room or on the public banqueting table equally a nuisance that should be no longer tolerated?

If now, at the beginning of the twentieth century of the Christian era, all the members of the medical profession would refuse to longer bow to the tyranny of social customs, by becoming total abstainers themselves and advising all others to become the same, they would prevent an enormous amount of human suffering and effectually vindicate their claim to the guardianship of the public health and happiness.

In the recent Egyptian Archæological Researches there are records of prescriptions, names of drugs, and methods of giving them. Some of them are wise and rational, others are strange and repulsive, and some are associated with charms and spells. It is a surprise to find that human nature is the same in all ages. Among the prescriptions are hair invigorators, hair dyes, cosmetics, pain-killers, insect powders, restorers for all kinds of conditions, and soothing syrup containing opium, for small children, and all these were used four thousand years ago. Opium addiction with prescriptions to check it, in which lupulin and mercury were prominent remedies, have been found. The materia medica of that day was remarkable in containing so many of the drugs now in use, particularly the narcotics, such as hyoscyamus, cannabis indica, and other drugs such as petroleum, potassa, lime, soda, and iron drugs.

RECENT CONTRIBUTIONS TO OUR KNOWLEDGE
OF ALCOHOL AND ITS ACTION UPON THE ANI-
MAL BODY.*

WINFIELD S. HALL, M.D., PH.D., CHICAGO, ILL.

Outline.

PART I. Review of the report of the Physiological Sub-Committee of the Committee of Fifty to Investigate the Liquor Problem.

PART II. Excerpts from the Literature of Alcohol since January 1, 1903, arranged topically.

I.

No subject which man has attempted to investigate, no problem which man has tried to solve, has presented so many difficulties as this problem of the effect of alcohol upon the body. The controversy growing out of the problem is far more voluminous than that resulting from any other single problem which has interested man.

If we seek reasons for the difficulty we find them to be two in number, viz.: 1st. The physiological action of alcohol is complicated by the fact that it is a pseudo-stimulant, that is, it seems to stimulate when it really narcotizes. This fact has led to endless controversy and to widespread misunderstanding on the part of the laity and the medical profession. 2d. The relation of alcohol to society is complicated by the fact that while it is a drug and a poison it forms a varying proportion of beverages which man has invented, which he has used from

*President's annual address to the American Medical Temperance Association at Atlantic City, June 8, 1904.

time immemorial, and to which he has given a legal recognition. This traffic in alcoholic beverages has grown into gigantic proportions, interwoven with our social, political, and even religious life in thousands of places, and involving as an industry millions upon millions of money in every civilized country.

To dislodge this great evil means the virtual reorganization of institutions, customs, and industries. So profound a change could not be wrought at once, — time, and a long time, will be necessary in the accomplishment of this task.

Education of the public on the influence of alcohol seems to be the necessary first step in this great work. Every contribution to our knowledge is valuable because it brings us so much nearer to our goal.

The writer presents to you no reports of researches of his own, but simply summarizes briefly the published work of last year.

The most notable publication of the last year on the subject of the physiological action of alcohol appeared in the two-volume report of the Physiological Sub-Committee of the Committee of Fifty to Investigate the Liquor Problem. This report appeared in June, 1903. It gives the results of ten years of research by several of the leading physiologists of America. The results of the researches, as shown by the laboratory protocols, classify alcohol as a narcotic poison and not as a stimulant. (Vol. II, pp. 55, 61, 91, 92.)

“Ethyl alcohol alone is poisonous enough to account for all the evils of intemperance.” (Vol. II, p. 30.)

I. Of the effect on brain work, Professor Abel of Johns Hopkins University says:

“Alcohol is not found by psychologists to increase the quantity or vigor of mental operations; in fact, it clearly tends to lessen the power of clear and consecutive reasoning. In many respects its action on the higher functions of the mind resembles that of fatigue of the brain.” (Vol. II, p. 141.)

"In all those vocations of life where keen senses, sharp attention, the ready and immediate action of clear judgment, or great concentration of the mind are called for, alcohol in any form or amount is injurious." (Vol. II, p. 165.)

Professor Abel says of alcohol as an aid to muscular work:¹

"We have no experimental grounds for believing that small or very moderate quantities of alcohol exercise any beneficial direct action on the muscles of men and warm-blooded animals."

He further says:²

"Both science and the experience of life have exploded the pernicious theory that alcohol gives any persistent increase of muscular power."

2. The Influence of Alcohol on Growth and Development.

Dr. Hodge reports the results of work done by him some time ago in Clark University. A part of his work was on yeast and a part on animals.

Professor Hodge gives³ the result of the effects of minute traces of alcohol upon the growth of yeast in the following description of a diagram illustrating those effects (*italics ours*):

"The diagram at the right in the figure expresses the same results as a race, a competitive effort, in which the cultures containing no alcohol are seen to win, the others falling below proportionately to their alcohol content. Fig. 2 is a similar expression for the third series of experiments. The method of uniformly seeding the cultures had not been perfected; still the same general effect is apparent. *And this is the unquestionable result in all the experiments, fifteen in number.*"

Experiments on dogs showed no traces of stunted growth. When it came to the offspring of alcoholized dogs, however, examination of their brains after death showed marked traces

¹ Vol. II, p. 146.

² Vol. II, p. 165.

³ Vol. I, p. 361.

of lack of development as compared with the progeny of the normal dogs.¹

Professor Hodge's final conclusion² is:

"Considered in relation to the general literature of the subject, our experiments supply additional evidence to prove that alcohol in small amounts exerts an inhibiting or sedative influence upon certain physiological processes. This is seen in its effect in slowing the growth of yeast, and, while bodily growth has not been interfered with under the conditions of most of our experiments, it is plainly indicated in lowering the normal activities of animals to which it has been administered."

Professor Hodge's report brings out some striking facts as to hereditary influence of alcohol. He says:³

"Possibly the most important of our results relates to the vigor and normality of offspring."

His report contains⁴ diagrams and tables showing the influence of alcohol on the progeny of dogs. Only 17.4 per cent. of the puppies of alcoholized dogs were viable, against 90.2 per cent. of the puppies of normal dogs. It is interesting to note that Professor Demme obtained almost exactly the same rate of normal offspring, 17 per cent., as over against 88.5 per cent., from comparative observations on ten alcoholic and ten non-alcoholic human families.

This is a double confirmation of the teaching of the indorsed books that the evils of alcoholic drinks are not confined to the drinker but often descend to his children.

3. The Pathological Effects of Alcohol.

Professor William H. Welch of Johns Hopkins University investigated the effect of larger doses of alcohol upon the tissues and organs of the body. Among his conclusions appears the following statement:

"Alcoholism, as pointed out by Strümpell, represents the

¹ Vol. I, p. 374.

² Ibid.

³ Ibid., p. 375.

⁴ Ibid., p. 373.

summation of injuries inflicted upon the tissues of the body by alcohol, each injury being perhaps minimal in amount but the total constituting the serious disease. It is not necessary to consider here the various theories concerning the mode of action of alcohol as a poison, or the extent to which it does injury by acting directly as such upon the cells, or indirectly through nutritive or other disturbances. In one way or another most of the organs and tissues of the body may become the seat of morbid changes attributable to the poisonous action of alcohol." (Vol. II, p. 365.)

4. The Influence of Alcohol on Resistance to Disease.

Dr. Abbott of the University of Pennsylvania made experiments with rabbits. The results were first published in the *Journal of Experimental Medicine*, 1896.

From Dr. Abbott's work the following conclusions are formulated by the Sub-Committee (vol. I, p. 21):

"Alcoholic drinks are useless as preventives of infectious or contagious disease; on the contrary they appear to lessen the power of the organism to resist the effects of the cause of such disease."

Concerning the work of Professor Atwater, the writer, having on another occasion given a detailed criticism, will not at this time go into the merits or demerits of that work. It is due to Professor Atwater to say that he has taken every precaution to eradicate all sources of error from his work and has published in the greatest detail the results of his work.

That certain portions of Professor Atwater's work are subject to an interpretation different from that which he gives it has been set forth. However, we must not lose sight of the fact that Professor Atwater has always been guarded in his statements concerning the food value of alcohol. So far as the writer knows Professor Atwater has never said that alcohol is a food in the usual sense of that term. He says simply that in a technical sense alcohol has a certain limited food value.

He admits that this depends upon the definition of a food, yet he neither defines a food nor does he definitely accept any definition formulated by others. In his writing, however, it becomes quickly and easily apparent that he accepts the definition and classification of Liebig, *i. e.*, foods are for building tissue *or* for giving energy. The latter class liberate energy through their oxidation in the tissues. According to this definition and classification alcohol is a food. But this definition has not been accepted by physiologists for nearly half a century.

A considerable number of physiologists state that because of two qualities alcohol may be said to possess a "food value," but only one man has recently claimed that it is a real food in the same sense that sugar is a food, and that man was severely criticised by Atwater.

What are these two qualities of alcohol referred to above?

1. Its oxidizability.
2. Its sparing of body substance.

Concerning its oxidizability we may quote:

Professor Abel says:¹

"Oxidizability cannot be made the measure of usefulness in regard to this substance."

Professor C. von Voit says:²

"A substance may be consumed by the body and liberate energy and yet be harmful."

Professor W. Kühne, Heidelberg, says:³

"To my view the oxidation of a substance in the animal body does not determine its injurious or its useful effects."

Professor Gruber, president of the Royal Institute of Hygiene, Munich, says in a recent article:⁴

"Does alcohol truly deserve to be called a food substance? Obviously, only such substances can be called food material, or

¹ Vol. II, p. 159.

² Vol. I, p. 103.

³ Vol. I, p. 90.

⁴ München neuesten Nachrichten, May 19, '01.

be employed for food, as, like albumen, fat, and sugar, exert non-poisonous influence in the amounts in which they reach the blood and must circulate in it in order to nourish. . . . Although alcohol contributes energy it diminishes working ability. We are not able to find that its energy is turned to account for nerve and muscle work. Very small amounts, whose food value is insignificant, show an injurious effect upon the nervous system."

Concerning the sparing qualities, I may say that these are very slight and their significance has been quite misunderstood by physiologists. They have generally thought that the consumption of tissue was decreased because of the oxidation of alcohol in a vicarious rôle, but it must be clear that the narcotic effect of alcohol by decreasing activity decreases oxidation of tissues. In this sense morphine and all other narcotics are foods. Even natural sleep judged by the same measure would be a food because it spares tissues.

The evident intent of those active members of the Physiological Sub-Committee who have organized the committee, and whose report occupies a large part of the first volume, is to bring about a repeal or at least a great modification of the laws regarding the teaching of physiology and hygiene in the public schools. Of the animus of this portion of the report, of its fallacies and misrepresentation, I shall say nothing at this time. It has been treated in a most dignified, just, and effectual manner in Senate Document No. 171.

Inasmuch as this document is being widely distributed it is likely that the final effect of the efforts of the noted professor will be positively and finally to fix the position of physiology and hygiene in our school curriculum. For the welfare of our country, its society and its institutions this is a result much to be desired. If the young are taught the evils of moderate indulgence in all beverages and nostrums that contain even small percentages of alcohol and other narcotic drugs, it will be only a few generations till the octopus, its life fluid sapped, will

gradually loosen its grip, and fall a slimy mass, leaving man free to continue his upward evolution.

ALCOHOL AND NURSING MOTHERS.

Prof. Bunge of Switzerland has made a study of the inability of mothers to nurse their offspring, and of the great mortality among babies brought up on the bottle. In a study of 1,600 cases the percentage was very high of the inability of moderate drinkers to properly nurse their children. It was shown that where both parents drink the children were defective, with low vitality, and the daughters of such parents were unable to nurse their children, hence the degeneration was transmitted. Dr. DeForest, in an article in *Modern Medicine*, summarized this study as follows:

It is a matter of daily observation in biological study that alcohol is a protoplasmic poison and no amount of vital stamina on the part of the body will enable it to successfully resist the continued lethal effects of this poison, not only to dry up the springs of life which flow from mother to child after birth, but to cause degenerative changes in the growing embryo before birth, and even to produce sterility. Thus the effect of this pernicious habit on the moral, mental, and physical and spiritual life is always downward. From the tiny speck of protoplasm at the beginning of life until the bloated drunkard lies down in a premature grave, there is suppression of protoplasmic activity followed by inflammatory and degenerative changes. Every glass cuts short the life not only of the person who drinks it, but of the offspring of the person. Nature abhors poison, but seeks to live in spite of it. A continuing of the poisoning process day after day, however, overpowers the reserve forces upon which the functions of reproduction and lactation depend. The human race is on the high road to extinction, and the inability of women to nurse their children is one of the mile posts on the way.

EVOLUTIONARY PATHOLOGY OF CHRONIC
ALCOHOLISM.*

BY W. FORD ROBERTSON, M.D.,

Pathologist to the Scottish Asylums.

There are at present virtually only two opinions that are held regarding the effect of chronic alcoholic poisoning upon the race. According to one, it is a potent cause of "racial degeneration"; according to the other, it is, on the contrary, only a cause of "racial evolution." Now, while I think that the term "racial degeneration" is one that should be discarded, for reasons that will appear, I maintain that those who, in spite of a great deal of obloquy that has been poured upon them by the other side, have held to the idea that underlies this expression in regard to the alcohol question, are fully justified in their position by the scientific facts bearing on the matter. On the other hand, I maintain that the conclusions of Dr. Archiball Reid and others in regard to this question have no such justification, being founded on too narrow a basis of fact, upon several unproven contentions, and upon certain biological doctrines that do not bear examination in the light of modern science.

I am not sure that I can bring those whom I am addressing to the same way of thinking. I can only present truth as it appears to myself. I am well aware that the subject is as profoundly difficult as it is important, and that there is ample room for individual differences of opinion. I respect in others the right of independent judgment. Though you may fail to follow me to the conclusions to which I wish to lead you, I think

* Continued from page 127.

I can at least promise to give you some material for new reflections upon this great question of the effects of national intemperance upon posterity.

It is probable that there are some here to whom the facts of modern science with which I am immediately going to deal are entirely new. If so, I may, I think, congratulate myself upon having the privilege of apprising them of discoveries, of an epoch-making character, the far-reaching future effects of which upon biological thought, and especially upon views as to human destiny, it is, in my judgment, almost impossible to overestimate. I refer to the recent discoveries in embryological science, with which the name of Dr. J. Beard is in a very special way associated.

These discoveries concern the early stages of development and the means by which racial continuity is effected. The view still most generally believed and commonly accepted without question is that the egg and sperm unite to form one cell, the zygote, and that directly from this by segmentation or cleavage the individual is developed; that at a certain stage a germinal epithelium is formed from certain of the somatic cells, and that from this epithelium the new germ-cells arise. Huxley has described the germ as being "simply a detached living portion of the substance of a pre-existing living body." It is exactly this doctrine that recent embryological discoveries have discredited. The germ-cell is certainly not a detached portion of a pre-existing living body. It never at any stage of its existence formed a part of the body; it was within it, but in no sense derived from it.

Dr. Beard's observations have been made chiefly upon the skate, but by no means upon this form alone. He has not only demonstrated the direct continuity of germ-cells, but he has also determined the exact mode of origin of the embryo, and formulated a new law of metazoan development. The work has many important details that I cannot allude to here. I shall simply state some of the chief conclusions contained in

Dr. Beard's writings. "The organism neither produces the germ-cells, nor is it the chief task of these to give rise to the organism." After fertilization the egg segments, or cleaves itself a certain number of times. The early products of the cleavage form the asexual organism or phorozoön, but in direct line from the fertilized ovum, after a certain number of cellular divisions, a cell appears which is termed "the primitive germ-cell." In the female skate this primitive germ-cell divides nine times, so that 512 cells are derived from it. These are the primary germ-cells, "on one of which falls the lot of developing into an embryo. The remaining primary germ-cells become the 'sexual products' of this said embryo." "The germ-cells may be regarded as unicellular organisms which pass one part of their life-history within a multicellular sterilized stock, the embryo metazoön, formed by one of them at a definite period of the life-cycle." Beard's law of metazoan development, namely that of "development by substitution of organisms" or "antithetic alteration of generations," was first enunciated in 1892. He has fully developed it in more recent writings. He now maintains that there is "one primitive mode of reproduction for the whole of organic Nature," and that "this is of such a character that an alternation of generations becomes absolutely essential to its being carried out." This has, of course, long been recognized as the mode of reproduction in the higher plants. Beard has shown that an exact comparison can be made between this and the mode of reproduction in metazoa. In both there is the asexual generation, with the formation of primary germ-cells in the metazoa, corresponding to the formation of spore-mother-cells in plants. Then there is the sexual generation marked by the formation of the gametozoön in the one case, and of the gametophyte in the other. In both cases the facts consist with a direct continuity of germ-cells. The special fact in the metazoa is the postponement of the reduction of chromosomes until the time of ripening of the germ-cells.

These are, in brief, the main conclusions that Dr. Beard has derived from his investigations.

To many persons they seem at first to be nothing more than a confirmation of Weismann's germ-plasm theory. Now, this is not really so. The two views are radically different. Weismann long ago rejected the theory of the continuity of the germ-cells on grounds which it is now evident were wholly insufficient. His germ-plasm is germinal substance in the popular sense; according to Beard's teaching, on the other hand, the germ-cells are adult forms belonging to a continuous line of unicellular organisms. Weismann derives the embryo directly from the zygote, and the sexual cells from somatic cells. It is only his germ-plasm, as distinguished from somatoplasm, that he supposes to be continuous. He has entirely missed the great fact of the occurrence of an antithetic alteration of generations in the metazoa. The asexual generation finds no place in his scheme. His theory of the germ-plasm, including as it does a theory of the existence of "biophors" as biological units, is out of harmony with the cellular doctrine. Beard's teaching is, on the other hand, entirely in conformity with this doctrine. With the demonstration of the continuity of the germ-cells, the hypothesis of the germ-plasm becomes superfluous.

Beard's law of development has certain corollaries to which I wish to direct attention. Some of them have been noted by Dr. Beard himself, but I must state that from this point I am exclusively responsible for the views expressed.

In the light of this law we cannot conceive how somatic variations, as such, can impress themselves upon the germ-cells.

The germ-cells resident within the individual were at one stage of their development in the relation of sister-cells to the one from which the individual developed.

The primary germ-cell which is sacrificed to form an embryo was never at any stage of its ancestral history any part of a metazoan body. Through the ages that must be allowed for

phylogenetic evolution, its ancestors were only unicellular organisms, and without ever having had any experience, as it were, of ontogenetic evolution, they have yet handed on an inherent potentiality of forming a human being under suitable conditions as to time, shelter, and nutrition. Is there any fact in nature more marvelous than that?

The terms "heredity," "inheritance," "ancestors," and "offspring," it is obvious, come to have a new meaning. In the sense in which they are generally used they are erroneous. Offspring derive nothing from their parents but shelter and nutrition; they are not, in a biological sense, the products of the bodies of their ancestors.

Dr. Archiball Reid, who during the last few years has manifested the most active and uncompromising opposition to the theory of transmission of acquired characters, is equally zealous in asserting the doctrine of the transmission of inborn characters. "The child," he says, "inherits them from his parents"; and, again, "Inborn characters are known to be transmissible from parent to offspring." This teaching can no longer be regarded as accurate. Offspring do not, as far as can at present be determined, inherit any characters whatever from their parents. Offspring are simply the realization of the development potentialities of converged ancestral lines of germ-cells.

The distinction between inborn and acquired characters has really no justification in modern scientific fact. The definitions given by Dr. Reid will not bear scrutiny. He says: "An inborn character may be defined as one which results in the individual from the constitution of the germ-cell (or pair of germ-cells) whence he sprang," and "an acquired character, on the other hand, is one which results from the action of the environment upon the soma." But "ears, eyes, and nose," which he instances as inborn characters, likewise result from the action of the environment upon the soma. The ten or twelve stones of body-weight are not derived from the im-

ponderable primary germ-cell. They come from the environment. Similarly, characters which are "produced in the individual by modes of life, by exercise, disease," etc., and which are distinguished as "acquired," are really dependent as much upon the inherent potentialities of growth derived from the ancestral lines of germ-cells as upon the environment. The environment alone could not produce them. The error involved in the distinction between "inborn" and "acquired" characters becomes, I think, still more evident when we observe how the fact of the continuity of the germ-cells at once enables us and obliges us to regard phylogenetic and ontogenetic evolution as two separate processes. The phylogeny is represented in the long converging ancestral lines of germ-cells with their potentialities of ontogenetic evolution. The ontogeny is essentially a breach in the continuity of the line of germ-cells, and a new creation in the case of each individual. It is an unfolding of the developmental potentialities of a primary germ-cell in response to environment stimuli. It is one process from the beginning to the end; every character that the individual can exhibit has really the same origin, being the joint product of external influences and potentialities of growth. This is, of course, a different view of evolution from that which is commonly taken. To Dr. Archiball Reid, for example, ontogenetic evolution is simply "development." "Social and moral evolution," he says, "are myths from the biological point of view." They have not "arisen through survival of the fittest." I submit that in the light of modern scientific fact these old doctrines represent a false, misleading, and now useless interpretation of organic nature, and must give way to one in which phylogenetic evolution and ontogenetic evolution are recognized as distinct through interdependent processes.

In regard to ontogenetic evolution, as thus understood, I would add that, although there is no inheritance of parental characters, there is an inheritance of environmental influences, to which, indeed, all that is of any importance

in human ontogenetic evolution is directly due. Cut out of man's environment what Prof. Karl Pearson terms "the tradition of acquired modifications," and his ontogenetic evolution will proceed no farther than that of the brute. All the acquirements of literature, art, science, social customs, etc., form an environment to which man's inherent potentialities of development are capable of responding.

Before I can explain how all this bears upon the question of the biological significance of disease in general, and of chronic alcoholism in particular, I must ask you to consider with me for a little the causes, significance, and probable laws, of genetic variation.

The recent advances in embryological science with which I have been dealing help us very materially, I think, to understand this subject. Genetic variation is clearly a modification of the potentialities of ontogenetic evolution of the germ-cells. With each conjugation of germ-cells there must be a more or less accurate blending of the potentialities of two ancestral lines of germ-cells, which in their turn were each formed by the union of two other ancestral lines. Such blending does not in itself constitute genetic variation. It is to be observed that there is really no exact standard by which we can test the occurrence of genetic variation, because each individual represents a fresh breach in the continuity of the line of ancestral germ-cells, and has derived none of his characters from any previous individual. In lower animals and plants, however, in the case of which the environment is virtually constant, previous individuals form a sufficiently accurate standard by which to judge of the occurrence of any variation of importance. In the case of man it is very different, for he corresponds with a much wider environment, and one to which he is in many respects imperfectly adapted; that is to say, he does not develop in an environment exactly adapted to the potentialities of ontogenetic evolution of the primary germ-cell from which he originated. From the earliest stages of development, inimical forces mould him in vari-

ous special ways. Therefore no other person can form an exact standard of comparison by which to judge of the occurrence of genetic variation.

Somatic variation must be any deviation from that course of ontogenetic evolution which would have been taken had the individual developed in an environment exactly adapted to the developmental potentialities of the primary germ-cell from which he arose. In the case of man, therefore, it is evident we can recognize the occurrence of only gross somatic variations.

Beyond question, one of the most important of the biological problems that must be thoroughly investigated in the immediate future is the causation of change in the developmental potentialities of germ-cells, or genetic variation. The discussions that are likely to take place will center around three chief hypotheses, namely, those of (1) bathmic change, (2) effects of conjugation of dissimilar germ-cells, and (3) influence of environment. I think there are sufficient grounds for discarding the idea of bathmic change, but time does not permit of my dealing with this matter. The practical question really is, do genetic variations arise in consequence of conjugation of dissimilar germ-cells, or as the result of the modifying influences of environment? Now, notwithstanding that at the present moment conjugation of dissimilar germ-cells is accepted by most biologists as a sufficient explanation of genetic variation, I venture to maintain that this conclusion is unproven, and that it rests upon what is probably a false reading of the facts. I would point out that on general grounds the conjugation of germ-cells cannot be a full explanation of the phenomena of variation, because it does not account for the initial dissimilarity. The two views, though not essentially exclusive, are, for the most part, antagonistic. They rest mainly upon a difference of interpretation of the same facts, though it must be said that the opponents of the theory of environmental influence have overlooked much of the existing evidence. Darwin believed that such influences are a cause of genetic variations.

Weismann maintains the same opinion. Prof. Ewart, whose views of such questions, as is well known, are based chiefly upon the results of an extensive series of original experimental observations, has expressed the opinion that "it will not be surprising if further investigations prove that changes in the soma, beneficial as well as injurious, are reflected in the germ-cells, and thus indirectly induce variation." Dr. Archiball Reid maintains that there are conclusive reasons for doubting the truth of the allegation that germ-cells, and through them offspring, are liable to be injured by changes produced in the parental blood and tissue by toxic substances, etc. He even challenges proof that "any influences, no matter what — disease, alcohol, privation, anything — acting on parents are causes of variations in offspring."

Now, there are important witnesses to be called in this case whose evidence has as yet scarcely been heard. I refer more especially to the evidence that is to be found in the results of recent investigations upon immunity. The work of recent years upon immunity has demonstrated an extraordinary sensitiveness and responsiveness to external conditions on the part of the cells of the body. They are capable of defending themselves against an enormous number of different toxic substances by secreting ferments which tend to counteract or destroy these toxic substances. Bacteria and other foreign cells are destroyed in virtue of similar reactive changes, aided by a vital action on the part of the leucocytes. There are good grounds for believing that these reactive phenomena are simply manifestations of a general functional capacity of cells concerned with the utilization and appropriation of nutritive materials. The changes which the body cells undergo in these cases are not merely temporary. They may last for months, or even years. They involve a radical change in the cells. They are an adaptation to environment, and when the cells return to their former condition, it is again by an adaptation to environment. Germ-cells require to be nourished like other cells; the laws

which govern their nutrition of the somatic cells which have arisen from a germ-cell. But it is unnecessary to reason by analogy in this matter. The literature of immunity furnishes records of actual experiment which demonstrate the fact that I attest.

Prof. Ewart has recorded the results of some experiments with malarial pigeons, which, he concludes, "seem to indicate that germ-cells are liable to be influenced by fevers and other forms of disease that for the time being diminish the vitality of the parents." — *British Journal of Inebriety*.

That alcohol can be produced by chemical combination of its elements without recourse to the fermentation of sugar has been known to chemists since 1860, when it was first prepared by Berthelot from acetylene. Now that calcium carbide can be so readily prepared by the electrical combination of lime and charcoal, and acetylene can so easily be evolved by the action of water upon calcium carbide, the time is approaching when alcohol will be more readily and more cheaply made by this synthetic process than by the fermentation of sugar and yeast. Other synthetical methods of obtaining alcohol, of great technical interest, are known to the chemists, and help us to understand more clearly that it is the application to which alcohol is put, and not to production, that results in evil.

The delusion that someone has discovered a secret preparation of drugs which can be used to cure a person suffering from inebriety still excites some attention in certain circles. The facts have been settled, and the absurdity of such claims has been proven over and over again. As in political circles the shouters keep up noise and roar long after the work is done, so in science. The pretensions and noise go on long after, and unthinking people on the outside fail to recognize its meaning.

UNCONSCIOUS PRO-ALCOHOL INFLUENCES IN
LITERATURE.*

BY DR. JOHN MADDEN, MILWAUKEE, WIS.

Bold, unqualified propositions are not likely to be too readily taken on faith. They are turned over and over in the mind, carefully examined in the light of reason, and accepted or rejected as their support is satisfactory or the reverse. An impression arising from the assumption of a fact, however, sinks into the subconscious memory as a part of the direct proposition, and gains currency as the truth, even though, like the direct proposition itself, it may be ridiculously false.

If I say that Jones' horse trotted a mile in one minute, or that during the cyclone of yesterday the great postoffice building of this city was carried a mile and then set down without a single stone being displaced, neither of these main propositions will gain the slightest credence among intelligent men; but will there not remain as verities, in the subconscious memory, the impressions that Jones owns a horse and that there was a cyclone in this city yesterday? Well, I know as a matter of fact that both impressions are false — that Jones never owned a horse, and that yesterday was calm and with a cloudless sky. A year hence, however, let anyone to whom I had related those improbable stories be questioned, and, while they will be at once stamped as recognized falsehoods easily traced in mind to their origin, the impressions will remain that Jones actually owned a horse, and that there was a cyclone a year ago. Nor is it at all

* Read at the Annual Meeting of the Medical Temperance Association at Atlantic City, June 8, 1904.

unlikely that those whose minds at once repudiated the main propositions as false would be able to trace to their origin the impressions concerning the proprietorship of the horse or the historical truth of the cyclone a year ago. If, too, instead of one person, one hundred persons should disseminate those two falsehoods among ten times as many people, it is easy to understand to what extent the two assumptions would remain as subconscious impressions.

A printed statement, moreover, has many advantages over one spoken. Putting it in a good book over a famous person's name, taking trouble of printing, binding the book, and requiring one to pay a considerable price for it, act subconsciously as guaranties that the statement is true. Furthermore, the truth or falsity of a proposition when spoken is in a measure judged by the speaker's personality at the psychologic moment; so the book has all the advantage of a prophet away from his own country.

That impressions thus made by indirection, upon the subconscious memory, are enormously effective in disseminating error cannot be doubted for a single moment. "What everybody says must be true," "a lie well told and stuck to is as good as the truth," are, no doubt, statements of propositions largely owing their origin to this sort of subconscious education. The value of commercial advertising almost wholly depends upon it, forming what is commonly known as "good-will" when the merchant gives it as an asset to a possible purchaser of his business.

A remarkable example of the commercial value of this sort of subconscious education as a tangible property is the impression produced wholly by reiterated publication of the false statement, generally indirect, that "alum is a poison." When a certain baking powder trust was formed, this subconscious education of the whole people was worth very many millions of dollars to the organization, its value appearing as more than three-fourths of the trust's capital stock.

The magnitude of the task of overcoming the results of this sort of indirect plea for alcoholic beverages is truly appalling. Fiction is saturated with it, and we read fiction more than any other class of literature. Our public library reports show that the percentage of books of fiction drawn by its patrons is about 37; this exclusive of children's books which, if added to adult fiction, would constitute more than one-half of all the books our people read — about 53 per cent., in fact.

Our study of the pro-alcohol influences of literature would not be complete without noticing the favorable mention of wine found everywhere in the sacred scriptures. Should we simply mention each example with such comment as our study requires, it would form a very large volume; we will, therefore, take only a single example, the miracle of changing water into wine, at the wedding feast.

“9 — When the ruler of the feast had tasted the water that was made wine and knew not whence it was: (but the servants who drew the water knew) the governor of the feast called the bridegroom

“10 — And saith unto him: Every man at the beginning doth set forth good wine and when men have well drunk then that which is worse, but thou hast kept the good wine until the last.”

Of course, the primary lesson taught here is that the lack of wine at a wedding feast was considered so great a calamity that it was worthy of the miracle wrought for its removal, thus putting it in the same category as all the physical ills — blindness, lameness, leprosy, with the demoniac possession, even death itself, threatened destruction by storm, and the like. Who can say how great has been the influence making for wine drinking by the impression of this miracle alone upon the subconscious memory of countless thousands of religious devotees during the past two thousand years?

And let us not lose sight of the less conspicuous, the more subtle, impression which St. John, the Apostle, unwittingly

conveys in his recital of the miracle. It is that which speaks of the custom of setting forth the good wine first, "and when men have well drunk, then that which is worse." In other words, the guests shall have good wine until their palates are dulled by the narcotizing effects of alcohol, until they are slightly drunk, then all wine will be good to them. Is there not here a subtle justification for becoming intoxicated with wine? Is the statement not capable of making an effective subconscious impression?

Let us now turn at once to the shelves loaded with miscellaneous works of fiction. The books are arranged in the alphabetical order of their writers. We begin with the W's. Walingford is the author of a volume called *The Single Guest*. The leaves are turned hastily, but we find no evidence of alcoholic beverages; however, the light is bad at this end of the room, so the other end is tried. The books here begin with the first letter of the alphabet. The first volume is a stranger to us. It is Ainsworth's *Old St. Paul*, a story of the great London plague in 1665. Almost the first page we see contains the following:

"The doctor drew a small flask of canary from his pocket, and applied it to his lips.

" 'This is my antipestilential drink,' he remarked with a smile."

The leaves are turned a moment more and we come upon a scene described thus:

"In the midst of a large room the sides of which were crowded with coffins, piled to the ceiling, sat about a dozen personages, with pipes in their mouths, and flasks and glasses before them. Their seats were the coffins, their table was a coffin set upon a bier. Perched on a pyramid of coffins gradually diminishing in size as the pile approached the apex, Chowles was waving a glass in one hand and a bottle in the other, when the doctor made his appearance."

The whole group were maudlin with alcoholic intoxication

and they are singing a song for Chowles, the coffin-maker. The song ran thus:

"To others the plague a foe may be,
To me 'tis a friend, not an enemy;
My coffins and coffers alike it fills,
And the richer I grow the more it kills.
Drink the plague, Drink the plague."

Of course, the subconscious impressions produced by the two quotations taken from this book are first that "canary" is preventative of the plague, bubonic plague, as has been recently proven, and which is not true, but the opposite of truth. The lesson taught subconsciously by the second quotation, including the song, needs no comment. Is it wise and manly to get courage to face death by getting drunk? The wit and mercenary spirit of the song are not offensive, but it is certainly unquestionable that the bravado spirit born of the alcohol teaches a subconscious lesson that we could well afford to neglect.

The next volume taken down was Auerbach's *On The Heights*, and almost the first page to catch our eye is that in which Hansei tells to his sweetheart, Walpurga, the delights of being an innkeeper. "The highest ideal," says the author, "of the young mountaineer is to be an innkeeper, to supply everyone with meat and drink, and live by the profits of it."

Then follows a dissertation upon the mountaineer's good-fellowship; no matter what sort of business transaction is carried on, whether cow or goat or flock of sheep are sold, or there is a political meeting in the mountain village, interest always centers in the village inn, and cheer is found in the innkeeper's ale and schnapps.

The indirect subconscious lesson here taught is the most important of all which make for the drinking of alcoholic beverages, the idea of good-fellowship, of man's association with his fellows in drinking. In fact, should we undertake to treat the subject with adequate fullness we should find ourselves writing a cyclopædic volume upon the evidences of the social

instinct in man, for it is quite impossible for the average man to think of a gathering of his kind for social purposes without the presence of some sort of alcoholic beverage.

The Outlaws by Armstrong was next opened, quite at random, and this was found on the first page: "He knew that within the long back room of his own were stores of food and tools and the barrels of spirits furnished by the company. He realized that there was strong temptation," etc.

From this we get no subconscious information of a pro-alcohol kind. The mere fact, however, that there were barrels of spirits within possible reach of woodsmen is suggestive enough to anyone who has ever seen a woodsmen's drunken carousal.

Many of the modern historical novels deal with a time when drunkenness among gentlemen was taken quite as a matter of course, but it is questionable whether some of these do not outdo history in their historical fiction of drinking habits. Richard Carvel probably gives an unnecessarily exaggerated picture of wine-bibbing among the English gentry during the days just antedating the American Revolution. Churchill, however, does something more than this. He gives the eighteenth century Englishman's wine a remarkably good character. He sings its praises, tells of its godlike qualities. Surely nothing could be more strongly commendatory of wine than the following:

"The wine, so he told us, was some fifty bottles of rare Chinon he had inherited. Melted rubies it was, indeed, of the sort which had quickened the blood of many a royal gathering at Blois and Amboise and Chinonceaux, the distilled peasant song of the Loire Valley."

Now, aside from its mixed metaphor and clumsiness of statement, this is, as a scientific proposition, sheer nonsense. It is, however, not typical as an example of assumed fact impressing the subconscious memory, it is a case in which the author steps aside from the main issue (a dinner at the house of Lord Baltimore) to apostrophize an alcoholic beverage;

nevertheless, as a statement of fact it is subsidiary to the main issue, Carvel's meeting with Lord Baltimore, and others, at the dinner. The statement has, therefore, all the psychological value of an assumption unconsciously impressing the subconscious impression.

The scientific error, of course, is that which gives remarkable virtues to wine, especially old wine. The modern chemist tells us that age gives to wine certain ethers caused by an oxidation of a part of its alcohol; these ethers, being called the "boquet", are more poisonous than alcohol itself. There are some other changes which wine undergoes with age, but they are of little importance so far as increasing its value is concerned. Nor are there such vast differences between the different kinds of wine in so far as their chemistry is concerned. The principal difference between wines is the relative quantities of alcohol they contain. All other differences are of very minor importance.

To say that a wine is "melted rubies" is the "nth power" of hyperbole to the scientific mind, but it is enormously effective in creating a favorable impression toward wine in the lay mind.

And we find these pro-alcohol assumptions everywhere in current magazine literature quite as often as we find them in books. Two May magazines are before me. One has a story in which a baby has swallowed a pin. It is hurried to a train to be taken to the city to have the foreign body (which, by the way, is lodged in the child's œsophagus) removed. A good samaritan traveler met on the train gives the baby brandy and water, a drop at a time "at intervals of two minutes" until ten drops were given. "He'll do for another hour," said the amateur doctor, "and truly the baby's face did look a little less drawn."

In the other story there is love and a little slap at Christian Science. A man whose wife is one of the mystic cult, and his daughter a sincere believer, meets with an accident in which his collar-bone is "smashed" and one arm broken in two pieces.

A heroic, athletic, and somewhat impudent young surgeon comes along in his automobile and hears the Christian Science lamb, in the shape of the wife and mother, in her den. The doctor has a quart bottle of brandy in his automobile. He insists that the patient must have some of it, and the patient gets it in spite of the gathering uxorial war clouds. The patient, indeed, partakes so liberally of the doctor's brandy that he is carried away waving one foot and singing an old-fashioned "drinking song."

Of course, the subconscious impressional value of these tales, in a plea for alcohol, is at once apparent. Brandy is good for a baby with a pin in its cesophagus, and good for a man with a "smashed" collar-bone and fractured arm. In the first instance it evidently acted as a stimulant and narcotic, in the second its stimulant value was only secondary. It acted as an analgesic, enabling the man who was suffering terribly from pain a few minutes before to sing a "drinking song." Let us try to forget the unpreparedness of the surgeon who goes about with so small and inefficient an aramentarium in the way of stimulant and analgesic drugs, when we examine the teaching, the subconscious impression, in favor of alcohol here produced. We all know that alcohol is not a stimulant. We also know that it is immensely inferior to other drugs as an anodyne.

Another contributor to the magazine has a charming story about the blue-jay. He has an aviary containing more than a hundred song-birds, mostly natives of the country. Among these are several blue-jays, one of which is a cripple, who while taking his morning bath fell over upon his back, in the bathing trough, and by reason of his deformity, unable to help himself, was almost drowned. His owner seized him, dried his feathers with a towel, and "poured three or four drops of whisky down the bird's throat."

Perhaps this writer is not so sure of his therapeutics, for he admits that he is not particularly skilled in giving "first aid

to the injured;" still his pet revives and lives, and there is registered in the brains of a good many hundred readers another subconscious pro-alcohol impression. The scientific critic, however, stands impotent. In all of his researches he is unable to recall a single case in which the psychologic effects of alcohol upon the constitution of the blue-jay have been studied experimentally, so he may not say to what extent whisky is efficacious in an almost drowned bird of that species. He has heard that the jay's cousin, the crow, has been made drunk on corn soaked in whisky, without suffering any other apparent harm than a general but temporary demoralization of character. So far as he knows, however, the jay has never been found in a state of alcoholic intoxication.

In a delightful article in the current number of the *Atlantic Monthly*, "An Hour With Our Prejudices," by Samuel McChord Crothers, we find the following: "An English gentleman relates a conversation he had with Prince Bismarck. The Prince was inclined to take a pessimistic view of the English people. He thought that there was a degeneration in the men, which he attributed to the growing habit of drinking water. Not that he believed that there was any particular virtue *per se* inherent in alcoholic drink; but he was sorry to hear that the old "three-bottle" men were dying out and leaving no successors. He had a suspicion that it meant shrinkage in those qualities of the English which had made them what they were in the past, and for which he had always felt a sincere admiration."

Here is the notion which begins almost with the boy's first drink of beer or whisky, that it is an indication of manly strength to be able to drink large amounts of an alcoholic beverage. That Prince Bismarck should consider a three-bottle man better than a one or a two-bottle man is truly one of the oddities of favorable lay opinion in regard to wine drinking and wine drinkers not less fantastic than the opinion that the growing habit of drinking water is weakening the British race.

When we consider that this opinion came from Europe's foremost statesman, the best known of the three greatest of the nineteenth century, its absurdity amazes us students of the evil effects of alcohol drinking not less than it would stimulate an ambition in a lay admirer of the great Prussian to become a three-bottle man. How easy it would be for us to tell the man of blood and iron why the three-bottle men are dying out.

Should we now sum up the pro-alcohol teachings discovered in our very brief examination of literature, made quite at random and occupying not more than a single hour of our time, we should have quite a respectable catalogue of alcoholic virtues which are constantly sinking into the subconscious memory as impressions, and being fixed there to strengthen pro-alcohol interests. When, therefore, we consider the millions of volumes of fiction annually read by all classes of people, the magnitude of this pro-alcohol influence becomes truly appalling, and we should cease to wonder why our anti-alcohol demonstrations are not more effective. We write learned scientific brochures in which we show up in hard mathematical facts the physiologic and the sociologic evils of alcohol and shake hands with our associates and ourselves for having done a great good. Occasionally some good man or woman, to whom the very name of alcohol is abhorrent, reads what we have written. In the meantime, thousands of romancers' pens are busy every day making their effective pleas for alcohol to the subconscious mind, while millions of receptive brains are unconsciously storing up the evil influence.

Dr. W. McAdam Eccles of London, in a recent address, spoke as follows: "During the past four months the medical question of alcohol has been one of the foremost in the medical press. Since the commencement of this year, not a single week has gone by without some reference or other being made to this question in the medical papers." And he ventured to say that were they to take a volume of the British medical journals, say forty or fifty years back, they would not find the question raised once during the whole twelve months.

DISGUISED INTEMPERANCE.*

DAVID PAULSON, M.D.,Prof. General Therapeutics, American Medical Missionary College.

The scientific investigations of Dr. Richardson, and later by many men eminent in the profession in England, have had a noticeable influence in decreasing the use of alcohol in medical practice. The alcohol bills in the British public hospitals are only one-fourth of what they used to be. There can be no doubt that the scientific study of the influence of alcohol in health and disease has had a somewhat similar influence in decreasing the medicinal use of alcohol in this country. But, unfortunately, the enormous increase in the use of alcohol by quacks and patent medicine venders threatens to rival in due time the widespread proportions of the liquor traffic itself. Dr. Abram Jacobi is the authority for the statement that the people of this country expend annually two hundred million dollars for patent medicines and quack remedies, and the evil is thus far increasing by leaps and bounds.

Dr. Shoemaker recently stated that "the public at large very generally expect more of drugs than is within the power of those substances; they look for specific effects. To their conception, the name of the disease should suggest a remedy." The patent medicine vender supplies exactly this need. There is a deeply-rooted superstition in the public mind that it is possible to conjure and juggle away the most distressing physical maladies by swallowing in a routine manner a few teaspoonfuls of some widely-advertised remedy, and the monstrous claim of this or that nostrum is often bolstered up by most convincing

* Read at the Annual Meeting of the Medical Temperance Association, at Atlantic City, June 8, 1904.

testimonials from men of such standing as to reasonably merit the confidence of the public.

Formerly, a large share of these so-called remedies were subject to just criticism from the fact that from a medical standpoint they were wholly inert. Careful investigation revealed that as high as eighty per cent. of the widely-advertised medicines contained absolutely no medicinal properties whatever. But the wide-awake patent medicine manufacturers are beginning to discover that enterprising advertising and extravagant claims, even though indorsed by the photographs and testimonials of prominent men and women, are not sufficient to maintain permanently the prestige of their remedies; so, in a majority of instances they have now resorted to the adding of liberal quantities of morphine, cocaine, alcohol, and other narcotizing substances which necessarily produce almost immediate and characteristic effects, and which make it an altogether easier task to secure a still larger number of apparently sincere testimonials, certifying to the efficacy of their drugs. A widely-advertised catarrh snuff contains a liberal quantity of cocaine, and is already producing a prolific harvest of unhappy victims. One freely-advertised cough syrup contains one quarter of a grain of morphine to every two ounces of the drug. When one considers the reckless way in which these cough medicines are taken, the question is becoming a pertinent one, whether the morphine fiend is not yet to become as common as the drunkard. One of the best-known soothing syrups contains half a grain of morphine for every two ounces of the drug. Is it any wonder that the advertising columns of the popular magazines frequently contain from half a dozen to a dozen or more cures for the morphine, cocaine, and similar drug habits?

The editor of one of our leading dailies is responsible for the statement that there are at present a million drug fiends in this country. It is sincerely to be hoped that this estimate is altogether too large, but every physician of extensive ex-

perience knows that the drug habit victims are increasing in every stratum of society at an appalling rate. What else can be expected when the innocent child is introduced to the bewitching effects of these drugs in his cradle, and so his nervous system is made to demand unearned felicity even before he is old enough to ask for it?

The editor of the *Journal of the American Medical Association*, commenting upon the fact that there were 5,461 cases of sudden death reported from heart disease in New York city during 1902, calls attention to the freedom with which so-called headache powders, composed mainly of acetanilid and other heart depressants, are now so commonly bought and sold. "Many women, and even men, think nothing of stepping into a drug store and asking for something for a headache. The headache powders that are dispensed to them so freely always contain acetanilid, and great harm is being done in this way."

Of a list of eleven sarsaparillas, bitters, tonics, and other well-known compounds, Dr. Bumgardner recently reported before the Colorado State Medical Society that the smallest amount of alcohol in any one of them was 17 per cent. and the highest 44 per cent. There are thousands among the unsuspecting public who are daily using certain bitters and other substances which they imagine contain only harmless substances, while in reality they are constantly being doped with alcohol, and that very often of a highly dangerous character.

Dr. Gould says: "Poisoning by wood alcohol is increasing. The cheapness of this alcohol is caused by the fact that there is no revenue tax upon it, and it costs only about fifty cents per gallon, instead of \$2.60. This makes the unscrupulous manufacturer use it instead of grain alcohol in flavoring and medicinal extracts. Some essences of Jamaica ginger, peppermint, and lemon contain as much as 75 per cent. of wood alcohol. In the last eight years, there have been over fifty deaths caused by it, and doubtless this is only a small part of the total number. Besides the deaths and other injuries, such as gastric

disease, etc., from this source, an especially disastrous result is amblyopia, which not seldom ends in absolute blindness; at least 36 cases have been reported within a few years."

The fact that the lay press is deriving a large percentage of its advertising revenue from patent medicine venders may be one reason why it has remained to so large an extent silent in reference to this widespread evil, which, under the disguise of the healing garb, is rapidly becoming a prolific source of the worst forms of intemperance. It is, however, encouraging to note that there are a few magazines which, at great financial loss, have had the courage to refuse to use their advertising pages to exploit the patent medicine evil, and furthermore some have undertaken in their editorial columns to tell their readers the exact truth in reference to it. It certainly is high time that the medical profession should heed the advice given by Dr. Sternberg in his presidential address at the Denver meeting of the American Medical Association, that the time had now come when it was the duty of the profession to remember that the pen was mightier than the sword, to educate the public on questions relating to health, instead of permitting the quacks to do it for selfish gain.

We have not done our duty when we have simply eliminated as far as proper alcohol from our own prescriptions. We must suppress, as far as possible, the sale of alcoholic substances under pretensions that they are entirely harmless. We must endeavor to present before the public by all legitimate means the terrible consequences that lurk in the reckless and indiscriminate use of those highly-lauded substances which contain dangerous quantities of alcohol, morphine, cocaine, and other habit-forming drugs.

Hinsdale, Illinois, June, 1904.

Inebriety has been called a toxic degeneration, the treatment of which will depend on ascertaining the causes and removing them. These may vary and comprise widely different conditions.

ALCOHOLISM AND TUBERCULOSIS.

BY M. LE DOCTEUR LEGRAIN.

Translated by Dr. C. R. Drysdale.

“The movement” against tuberculosis has assumed an extraordinary development of late years in all countries. It receives marks of sympathy from all governments; enormous funds are received from private charity, and anti-tuberculosis institutions are now innumerable. Tuberculosis has become a state question, and already some good thinkers, whose tenderness towards all that relates to the solace of misery is beyond suspicion, have protested against such a display of forces: not that they consider these in reality either useless or inopportune, but because they think that the interest of the general assistance requires to be equitably balanced, and desire to see a juster division of charitable efforts in combating the evils which so terribly attack society. And these persons think, and not unreasonably, that these evils are connected with each other, that they are relations of each other (*solidaires*), that some of them, such as tuberculosis itself, in spite of their extreme gravity, are only in fact results, or final processes, and that these efforts are halting, if not sterile, which only attack the effects, without attacking the causes.

In consequence of these protests which we, among the first, have spoken of, there has arisen a new view of the case, far more fruitful, as I think, which was put forward at the last meeting of the Bureau International on Tuberculosis (session in Paris, 1903). M. Casimir Perier, Dr. Brouardel, M. Cheysson, and other speakers, strongly insisted on the necessity of the anti-tuberculosis party uniting in the same campaign, and

that in the interest of those who are attacking that malady, with the campaigns against alcoholism and unhealthy dwellings, these two great generators of tuberculosis. That was a commencement of what we will call the integral assistance of the disinherited, or social cells, which are suffering from a thousand combined ills which call for many combined remedies, but the doses of which remedies should be wisely combined in formulas which are also wisely combined. That is, if I may employ a medical comparison, the substitution of general medication in place of treatment of symptoms. This close subordination of certain diseased states in social life to one another becomes quite startlingly evident when we study alcoholism and tuberculosis together. The relations between these two pests are no longer contested by anyone. We owe precisely to the ardent study that has been made about tuberculosis of late years the fact that these relations have been accentuated and laid down as a scientific aphorism. Let me add that it is also a social aphorism, and even one of social economy.

The predisposing action of alcohol does not differ in the case of tuberculosis, we may remark, from that which it exerts on other diseases, infectious or contagious. Alcohol alters the resistance of the whole living organism which it comes in contact with, and it is a classical observation that a drinker is less resistant against attacks of cholera, intermittent, septicæmia, tuberculosis, etc. It is no less a classic motto that alcohol aggravates even wounds, whether accidental or surgical. But as far as tuberculosis is concerned the problem is the gravest; for tuberculosis is, of all the infections, that which most universally attacks the human organism and causes the greatest number of victims.

It is of no use to consider alcohol, the predisposing cause, in its individual and in its social aspects. Alcohol predisposes the individual to tuberculosis by its paralyzing action and its asphyxiating influence on the cellular protoplasm, which is no longer in a condition to resist the invasion of a parasite. It

predisposes also by destroying all the means of defense of the organism, especially by altering the integrity of the central and peripheral nerves, of which it is a powerful poison. To its stimulating action, which is so transient, there succeeds a deadening action, which is especially seen in drunken fits. It thus lessens the regulative power of the nervous system. It diminishes the powers of resistance to such a degree that we see men who drink heavily fall victims to rapid tuberculosis, whose constitutions were originally vigorous and free from any degeneration.

But it is above all by its action on the general nutrition that it weakens. It creates want of appetite, nausea, irregular and insufficient nutrition, indigestion, and consequently a faulty elaboration of the food. In the long run, and in consequence of very complex mechanism, it creates a poor nutrition with all its clinical features. Obesity, and sometimes leanness, all sorts of mal-assimilations, are the features apparent in its pathological history. The general alternation of the organism, the sign of its suffering, is translated, as we know, by a shortening of the length of life, and by the early appearance of senile decrepitude.

How could any organism, so tortured by the poison, continue forever its resistance to the invasion of tuberculosis? But alcohol does more in affecting in a baneful manner the children of the drinker. From the drinker there can only be reproduced beings gifted with the minimum of resistance. By creating congenital weakness, alcohol predisposes the hereditary alcoholic child to tuberculosis in youth far more frequently than is supposed, and we know that the reality of hereditary tuberculosis is contested. It is a fact that the children of drinkers are frequently attacked by hip-joint disease, white swellings, caries of the vertebræ, and pulmonary tuberculosis, without being born of tuberculosis parents.

Finally, by continuing its action on an organism already infected by tuberculosis, alcohol aggravates that infection, and

hastens its evolution, and far more than this — and this is a far graver fact which the tuberculous should keep well in view — opposes the cure of tuberculosis, which is always possible in principle. On this view, we may say, in spite of recent assertions of some learned Italian authorities, whose physiological experiments should not prevail in face of the data of daily clinical experience, that the systematic treatment of chronic tuberculosis by alcohol is apparently a physiological absurdity.

With regard to the social question, alcohol predisposes a man to tuberculosis by destroying in him all dignity and moral ideals, all knowledge of his true needs. It is not in vain that the cerebral cells are constantly subjected to the impregnation of a stupefying poison, even in small doses. The mental and moral alternations, often discovered with difficulty at the commencement, are not long in presenting clinical characters which are well marked even in individuals not addicted to drunkenness. These are made evident, sometimes more, sometimes less, clearly, in negligence of the physical appearance; the narrowness, over-crowding and insalubrity of the dwelling; in the precarious diet, etc. The drinker, as a rule, neglects the most elementary rules of individual and of collective hygiene. He does not know either how to eat, or to dress, or to lodge, or to give an ethical course to his life.

Now, since the true and tangible cause of tuberculosis is indeed a contagious element, a micro-organism, Koch's bacillus, we cannot fail to see the importance of the factors which are capable of increasing its power and utilizing its virulence. It is clear that the action of the bacillus is only redoubtable in relation to the non-reaction of the organisms. And we may say that, in the social area, the true cause of the disease is not the bacillus, but everything which favors its attacks. The secondary causes practically assume a very superior value, and they are united effectively in the drinker more than in others. Such are severe diseases, debility, debauchery, useless fatigue, fatal overwork, physiological sufferings, moral and

pecuniary misery, and want of hygienic surroundings, etc. Whence we conclude from all this in practice that we must take care not to confound tuberculosis with tubercular patients. Tuberculosis is a simple morbid entity; the tuberculous patient who is to be treated is an entity of infinite complexity whom we should attack improperly if we considered him only as a victim of the bacillus. It follows logically that the treatment of tuberculosis includes the treatment of all the causes which make the tuberculous patient a complex being, and that this treatment is above all social, that is, preventive. It is by an indirect road, consequently, that the tuberculous patient as an individual will obtain most benefit from the measures directed against tuberculosis.

To cure, indeed, some tuberculosis patients, whose number will not cease to increase so long as they alone are considered, is to do no more for the disappearance of tuberculosis than is done for curing some drunkards in obtaining the disappearance of drunkenness, and of drinking habits. In like manner as for tuberculosis, the origin is complex and it is not more correct to confound the drinker with drunkenness than the tuberculosis patient with tuberculosis. Although that sounds paradoxical, we shall say that it is to postpone indefinitely, and without real utility for the masses, the solution of the problems where we only attack the origin while it is said that all these secondary causes play the principal parts.

Must we add that we do not at all mean to say that we ought not to treat and assist tuberculosis in patients, as we do at present. To attribute such an idea to the physicians who maintain the thesis above alluded to would be absurd and unfair. We wish only to prevent a charitable movement from falling into certain misapprehensions if due care is not taken to avoid them. To make the assistance truly useful and opportune, we must master the question of mere sentiment. If by thus acting we do not for the moment do good to all the tuberculous, we shall assure to these in the future a more

satisfactory assistance because it will be a more enlightened one. We wish only to remind our readers that in order to make speedier progress, and more surely to attain our aim, it is logical to first of all endeavor, as being of the highest importance, to abolish the habit of drink, and destroy the foci of alcoholism.

If the contagiousity of tuberculosis is real, we must reflect that from over zeal people have been brought to exaggerate its importance. It is right to speak clearly about it because the wholesome terror which it inspires may gradually lead people to modify the general condition of their individual hygiene for the good of the community. If the dread of the dust of sputa indeed should gradually accomplish the result that men should cease expectorating on the ground, that would be an incomparable benefit, not only as regards tuberculosis, but in fact of the other diseases the germs of which are equally contained in the sputa. But hygienists ought to take into consideration the contagiousness of all diseases in the same way as they do for tuberculosis.

It is an error to speak of war against the sputum and the treatment of individuals as being the first articles of faith in the struggle against tuberculosis. If the sanatorium is of undoubted utility for the tuberculosis patient, it would be a social error to suppose that its existence will not be counterbalanced by the want of the parallel development of works of general prophylaxis, among the principal forms of which is the combat with alcohol. All those who are combating tuberculosis will indorse this aphorism. To conquer alcoholism is to conquer tuberculosis. It follows from this that if we place in parallel lines anti-tuberculosis and anti-alcoholism as being factors in part of each other, we are obliged to recognize that the efforts of the Assistance Publique and of private charity are squandered if these are concentrated in an exaggerated degree, as they are at present, in the direction of anti-tuberculosis. The protection of public powers and social wealth are turned out of

the path if they do not address themselves at least in equal proportions towards the assistance of anti-alcoholism.

The anti-tuberculosis sanatorium ought to have at its side an anti-alcoholic sanatorium, a new term perhaps to many, but well known, however, to all those who have studied deeply the sad social problem of alcoholism, by all clinical observers who have seen what a cerebral patient the hard drinker is; who have learned that the cure of alcoholism, which is the task of general medication, has nothing to do with the cure of drunkenness, with the reform of drinking habits, which are the cause of alcoholism; of all those, in short, who, having undertaken this study everywhere, — in the lunatic asylum, the hospital, and in the world, — have learned that the drinker is a weak creature who only asks to be cured, who may be cured and become a social unit, a producer, in place of a parasite of the most costly order, even as much as the tuberculosis patient.

There are sanatoriums for the insane and others for epileptics and for idiots; there are others for prostitutes, and even for liberated criminals. There is nothing, or next to nothing, for alcoholic patients, the nurseries of beings wherefrom are recruited all the said degenerates. Less costly than the anti-tuberculosis sanatorium, the anti-alcoholic sanatorium would be more useful, even for the anti-tuberculous warriors. The close connection with the effects of the anti-alcoholists can accomplish more against tuberculosis than sanatoriums simply erected for some patients whose principal fault consists in not foreseeing the morrow of the cure, when the true causes of the disease are encountered again, more grave than before entering the sanatorium. We say graver, for the former misery will be doubled on account of the enforced absence from work, which the cure demands, because the deserted house will be more than ever unhealthy, because the liberated tuberculous patient will have no reference when in search of a new social position except his card of dismissal from the sanatorium.

The true individual, and, above all, social treatment of

tuberculosis is, we believe, contained in preventive remedies. However cruel it may be to our feelings, we must understand that in the combat against this pest an enormous part is to be seen in the contagion, but remember also that if we accelerate the prevention of the plague, we shall do most towards preventing that contagion from damaging the patient. The chief of the preventive agents are indicated by the uniform testimony of all observers. They are, rigorous abstention from alcoholic drink, and the publication far and wide of that principle. It is a conviction easily acquired, although the accomplishment of the social duty is far more difficult.

Another consequence follows from the above-mentioned premises, and that is that anti-tuberculosis efforts ought to be simultaneous, if they are to succeed, with efforts against alcoholism. The courageous physician who devotes himself to combating tuberculosis, the physician of sanatoria and of dispensaries, — which latter are very superior to sanatoria as preventive, — are in duty bound to preach by their example and to teach abstinence from alcohol to their patients.

We are acquainted with very few sanatoria from which alcoholic drinks have been quite banished. That is, to say the least, illogical. Whatever the cause may be, sanatoria, now and in the future, ought to be centers of anti-alcoholic education, both by example and by precept.

The treatment itself of the tuberculosis patients in these establishments ought to embrace in it a methodical training, progressive and reasonable, in the practice of abstinence. The patients must learn how dangerous it is to consume strong drinks; they must learn that these are useless for them, and that it is always to their benefit to do without them; they must be shown that abuse is a consequence of using them, and that the tuberculous patient, more than any other person, should abstain from their use, which so easily conducts towards abuse. In short, total abstinence is all-important, doubly for social and individual utility, as a remedy and preventive. That is a

great reform, which we scarcely see as yet. By itself alone, if it do not absolutely combat tuberculosis, it can effect its rapid decrease and prepare its eventual disappearance.—*Medical Temperance Journal.*

Some of the recent discussions on alcohol and inebriety are very interesting. The positiveness and energy which the various authors display are very promising for the future. The reader is puzzled to know why Dr. Reid's theories on heredity and immunization of alcoholics should excite such a lively opposition and be given so much time and space to show their fallacy. Other theories and their advocates have distressed many good men and stimulated profound efforts to correct and set the authors right again. Perhaps this waste of time and energy may have its uses, but it would seem more profitable to take up the study of the poor victims themselves. From a clinical point of view, there would be no place for the discussions of theories of this kind. A scientific examination of a number of inebriates would clear up many of the doubtful theories which are asserted so positively.

The word temperance, used to designate societies and individuals who abstain from all use of alcohol, is incorrect. A temperance society, or individual, is one who uses spirits in moderation and temperately and cannot be applied to a total abstainer. Total abstinence is the exact word to use. As we become better acquainted with the subject, it is necessary to use terms that exactly describe the condition. Good templars, and other names of societies organized for the purpose of the study of the dangers from the use of alcohol, represent their work exactly, but the word temperance should be put aside and not used to designate such work.

ALCOHOLIC AUTOMATISM.

Dr. Sullivan, the eminent physician of the English prison at Pentonville, has written a very suggestive clinical paper on the above subject, published in the *Journal of Mental Science* for April. He gives a history of five cases where persons committed criminal acts in a dream state of unconsciousness, which I have termed alcoholic trance cases, and studied at some length in the early numbers of this journal. The following are the remarks which he makes on these cases:

The points which I desire specially to discuss in the light of these cases are the following: (a) Conditions which predispose to the occurrence of automatism in alcoholic intoxication; (b) character of the defect of memory in the automatic phase; (c) conditions which influence conduct during the phase.

(a) Conditions which predispose to automatism in alcoholic intoxication.—An element of cerebral automatism belongs of course to the common phenomena of intoxication by alcohol. When, however, the symptom develops beyond the rudimentary stage to the prolonged dream-state which we have here in view, the cause is generally to be sought in some nervous abnormality in the intoxicated subject. Crothers lays it down in one of his earliest papers on the subject that "this trance condition will always be found associated with a peculiar neurotic state, either induced by alcohol or existing before alcohol was used." The soundness of this opinion has been supported by all subsequent experience. When distinct automatism develops under the influence of alcohol it may almost be taken for certain that the individual is a chronic drunkard, or that he presents some definite evidence of instability of brain. One of the cases in this paper (Obs. 4) is one of the nearest

approaches to an exception that I have yet come across; and in that case, despite the absence of the more usual predisposing conditions—for the head injury in childhood seems to have been trivial—yet the patient's emotionalism, the sentimental origin of his inebriety, and his sexual conduct, all indicate some degree of mental abnormality.

As a rule, however, the neuropathic condition is a good deal more definite. Its different causes, in the order of their numerical importance, would rank in my experience as follows: Chronicity of intoxication, epilepsy or epileptic heredity, head injury, insane or alcoholic hereditary degeneracy, certain acute infectious diseases, notably typhoid and influenza, syphilis. Very commonly more than one of these causes are operative in a given case, but most of them, if not all, seem to be capable singly of creating the special predisposition to pathological drunkenness. An exception ought perhaps to be made for syphilis. Personally, at least, I have not yet seen any case of alcoholic automatism in which it could be regarded as the sole neuropathic cause, but instances are not infrequent in which it appears to be an important coöperating influence, determining, for example, in habitual drinkers a rather earlier development of automatism. It may possibly have had some such influence in Obs. 2, and also in Obs. 3, where, though there was no history of syphilis, the pupillary symptoms were suspicious.

Epilepsy is of course, in a medico-legal aspect, a peculiarly important predisposer to automatism. Its influence is well illustrated in Obs. 1, in connection with which it may be specially noted that the dream-consciousness was related to the intoxication, and not to the epileptic fits. Epilepsy of traumatic origin seems peculiarly to predispose to automatism under alcohol.

(b) Character of memory defect in automatic phase.—Special importance attaches to the study of this question, since it is in the disorder of memory that the main evidence of the

automatic condition is to be found. The inquiry is, however, attended with a good deal of difficulty, more even than is presented by the study of the automatism of epilepsy. The most important cause of this difficulty is that in alcoholic cases the automatic phase is, as a rule, gradual and not abrupt in its onset and termination, and is moreover subject to modifications from additional doses of the intoxicant. To avoid fallacy, accordingly, one must be able to exclude this intercurrent influence, and one must leave out of account the transitional conditions at the beginning and end of the dream-state.

Considered with these limitations, alcoholic automatism has, as has very often been noted, a close resemblance, at least in a good many cases, with the automatism of epilepsy.

In the latter disease it is, of course, the rule that there is total amnesia for the period of the automatic state. It is, however, a rule that admits of a good many exceptions. A partial retention of memory in the automatic phase is by no means rare, and illustrative cases are fairly numerous in medical literature, especially of late years. In alcoholic automatism also, in the majority of cases, there is total amnesia; but the proportion of instances with partial memory appears to be higher than in epilepsy. For example, in a series of twenty-four personal observations of automatic suicidal attempts by female inebriates, specially noted from this point of view, there were as many as four cases of incomplete as against twenty of total amnesia.

The cases of complete absence of memory do not call for special remark here. The problems they present are practically the same as in the corresponding class of epileptics. Our interest centers in the more difficult cases where there is a more or less vague and partial memory of the incidents in the dream-phase.

The first and most important point to note is the sort of impressions that are retained in this condition. Any impression may be retained, but I think it may be stated, at least provis-

ionally, as a general rule that in any case where there is partial memory, a very vivid impression with intense emotional agitation will certainly persist.

The limitation of the cases recorded in the present paper to instances of socially indifferent conduct makes them irrelevant on this point; but the rule has been constant in my experience of suicidal and homicidal impulse. The suspicion of suicidal intent in Obs. 1 is too remote to be considered in this connection. The normal condition of things in the graver class of cases is shown in the non-alcoholic Obs. 5, where the only traces left in the patient's memory refer precisely to the emotional distress and the impulsive act arising out of it. One should certainly view with extreme suspicion an allegation of amnesia referring to serious criminal acts when trivial incidents, deep in the supposed automatic phase, are remembered.

Another point of considerable importance is that impressions may be recalled very soon after the automatic phase, or may be revivable in consciousness towards the end of the phase, but may subsequently lapse totally from memory. This has been noted also in cases of epileptic automatism, and has then been sometimes attributed to the occurrence of a second fit. In alcoholic cases, however, an analogous explanation is not admissible; the phenomenon may be observed in circumstances where further intoxication can be absolutely excluded. Obs. 1 and 3 in this paper are cases in point. In the first the patient, when seen on reception, offers an explanation of the scratch on his neck, and subsequently knows nothing either of the scratch or of his own earlier account of its origin. In Obs. 3 the patient similarly shows in his cross-examination of the messenger boy a knowledge of facts occurring in the automatic phase which he afterwards forgets altogether, though remembering the questions he put regarding these facts. The point has an obviously important bearing on medico-legal practice; not infrequently it happens that in cases of alcoholic homicide the murderer immediately after the crime makes some

remark which apparently implies premeditation and conscious motive, but subsequently alleges total amnesia of his act. In a case, for instance, mentioned in Maschka's Handbuch, the murderer, after killing his victim, said to his companions, "Don't tell any one about this"; later on he professed to have no memory whatever of the offense. Judging by analogy from the cases reported above, one must admit the possibility of such amnesia being quite genuine, despite the earlier evidence of memory.

Another question of some moment is whether the state of memory is similar in different attacks in the same individual. In epilepsy it appears to be usually so, but exceptions are met with; in one observation, for example, an epileptic, who on two occasions had committed acts of arson in the automatic state, was able to recall the circumstances in one instance, but was totally amnesic with regard to the other. In alcoholic automatism variations in this respect appear to be fairly frequent, even apart from ascertainable differences in the nature or amount of the intoxicant consumed on the different occasions. Cases in which chronicity of poisoning is the chief or sole predisposition to the occurrence of automatism are particularly liable to show this inconsistency, and in such cases the general tendency is for phases with total amnesia to occur earlier, phases with partial memory to occur later in the subject's alcoholic career. One sees this not infrequently, for instance, in the repeated suicidal attempts of chronic alcoholics.

(c) Conditions which influence conduct during the automatic phase.—Not less than in regard of the condition of memory, opinion has changed a good deal respecting the possibilities of conduct in the cerebral automatism of epilepsy. Clinical observation has shown often enough that the epileptic dream-state, besides acts which are habitual, imperfect, and inappropriate, admits also of conduct which is unfamiliar, elaborately coördinated, and hardly to be distinguished in appearance from fully purposive action.

In the automatism related to alcoholic intoxication seemingly deliberate conduct of this sort is even more frequent. It is therefore a matter of interest to determine the conditions which govern the nature and direction of such acts. Unfortunately, in any given case, only a very small part of the many influences concerned can, as a rule, be traced out, and even these cannot usually be established with more than an approach to accuracy. Through the obscurity, however, a few broad facts may be discerned with tolerable clearness, and they are of some practical value as guides in estimating the probabilities of conduct in such cases.

The conditions which govern impulse and thought in dream-states are thus formulated by Maudsley: (*a*) impressions made on sense from without the body; (*b*) internal impressions from the viscera and other organs of the body; (*c*) stimuli arising from the state of the blood, both as regards supply and composition; (*d*) the exhausted effects of recent experiences, whereby lately vibrated parts are prone to be stirred easily into renewed vibration; and (*e*) the proclivities of the mental organization, as determined by hereditary causes and the special experiences of life."

Considering these conditions in their bearing on the impulses in alcoholic automatism, one may distinguish two categories of cases, viz., those in which the organic stimuli that make up the *cœnesthesis* are normal, and those in which they are disordered.

In the former category of cases, where the emotional tone is optimistic or indifferent, the character of conduct presents a generally acquisitive tendency, and is more likely to be influenced by intercurrent impressions or by the residues of quite recent experiences. The cases recorded here are instances of this kind; in all of them there is a predominance of the cerebral symptoms of alcoholism, with a relative immunity from its peripheral disorders, and correspondingly their actions are expansive or neutral. The pertinacious efforts to get into the

employer's shop in Obs. 1, the *sans-gene* in the satisfaction of the need to urinate in Obs. 2, the repeated thefts and the efforts to perform difficult and unfamiliar feats in Obs. 3, all indicate a relative optimism of mood. And in Obs. 4, whatever view be taken of its more complex problems, the emotional state is similar.

In the second category of cases, on the other hand, where, either through original temperament or through the organic disorders of chronic poisoning, the affective tone has got a pathological set to pessimism, the impulses tend to be destructive, and the action of extrinsic impressions is small and limited to influencing the direction in which the impulse fulfils itself. To this category, of course, the greater number of cases of alcoholic automatism belong; pessimism is the more general rule in the chronic intoxications, and it is also the more frequent mood in the degenerate, in whom the native deformity of organization seems to be expressed no less in disorder of the processes that underlie cœnesthesis than in the discord of the more complex intellectual combinations. This aspect of alcoholism I have discussed at length in other papers published in this JOURNAL, and I need not dwell on it further now except to reiterate the practical point that the fixity of the morbid condition in which the impulse has its origin is likely to give to action in the automatic phase a continuity with that in the waking-consciousness which is easily construed into evidence of premeditation. In the alcoholic, threats before murder by no means exclude automatism.

Diagnosis.—To conclude these remarks one may summarize as follows the points of most importance in arriving at an opinion in a case of alleged alcoholic automatism:

- (1) Existence of one or more of the neuropathic predispositions to pathological drunkenness.
- (2) Previous occurrence of automatism under the influence of alcohol.
- (3) Amnesia during the automatic phase, or, if amnesia

be incomplete, then retention of the emotionally keenest impressions more than of the indifferent, other things being equal.

- (4) Demeanor of the agent.
- (5) Character of the act.

Of these points, the last two may have, of course, a very great positive value, enough in fact at once to fix the diagnosis. The existence of total amnesia, again, is conclusive proof of automatism, but, as we have seen, the difficult cases are just those, by no means rare, where the absence of memory is incomplete. The differential mode of memory is, I believe, a valuable test in such cases, but the instances to which it can be confidently applied are few. The first two points, on the other hand, are comparatively easy of determination, have a considerable positive value and a very high negative value. The absence of a definite cause of neuropathic predisposition, and of a history of similar reaction to alcohol on previous occasions, should go far to decide against the theory of automatism in a criminal case.

The Post Office department has adopted a very practical plan of excluding journals from the mails which carry advertisements of fraudulent drugs, and schemes that promise a cure by miraculous means. The penalty will be exclusion from the privilege of being sent as second class mail. Postmasters are directed to forward to the department journals containing advertisements which seem to be in violation of the law. The department will then decide on the merits of each case. Years ago, this journal called attention to this abuse, which now seems to be checked in a fair way.

Dr. Cole considers that alcoholic neuritis is an affection of the general nervous system, and the lesion of the peripheral neurones is only one of the manifestations of the disease. He believes that bacterial products as well as direct toxic causes are prominent in the causation.

NEURASTHENIA — ALCOHOLISM — INSANITY.

BY WILLIAM LEE HOWARD, M.D., BALTIMORE, MD.

Neurasthenia, Alcoholism, Insanity, make a neurosis trilogy; a drama played by many unfortunate individuals. I have called it a trilogy because the tragedy has a sequence in three parts, each complete and independent save in its relation to the general theme. Before the curtain has been rung up on this distressing drama the chorus has sung to us, explaining that the most potent factor in the trilogy is ancestral heredity. Now the first scene is presented to our view, and what impresses us most is the wavering mental life, and the peculiar susceptibility of the nervous system to the slightest stimuli. Then follow childish impetuosity and symptoms of uncontrollable temper, and as the scene changes to the schoolroom we notice inability to give close attention, precociousness, but instability in application. The scene again changes, and we now find the adolescent going from one occupation to another, clever, well liked, and mentally showing every indication that makes for success. But he cannot, does not, pursue any vocation for a sufficient length of time to become well trained, and we find him drifting into airy financial schemes, or else temporarily elated by the prospect of some sudden success. As the actor talks and walks before us we commence to notice the protrusion of the ego and smouldering desire for notoriety; also a marked personality demonstrating an increase of instability of purpose, an inability to seriously settle down to a life of study or work. Wandering and wavering are his acts and thoughts, and while his fellow actors on this stage of life slap him on the back and call him a "good fellow," he remains alone and dreaming as they leave him to go to work; the cur-

tain falls as our neurasthenic remains struggling with his psychic impotency.

The second part of the trilogy opens, and we see our neurasthenic trying to struggle against the rush and storm of this hyperactive period that the demand for gold and honors have thrust upon us. The social crowd rushes across the stage followed by the pushing, clamorous mob, and as the unstable hero of this life drama attempts to keep in the van he finds it necessary to stop on the way and strengthen his failing energies by stimulants. The road is long and wearisome, and ere he can mount the heights with his mental equals he has become the victim of alcohol, and the act closes with the unfortunate neuropath sliding backward—ever downward. The last drama opens in the hospital for the mentally afflicted. The fight is over, for the victim started unequipped for life's battle.

This is the scenario; now for the analysis of the play: for an explanation of the prevalence of this sad but human trilogy—for the sequences of these three tragedies are well known in private houses and public places, and are witnessed daily by tearful audiences and gaping *quidnuncs*.

According to Kraepelin the fundamental symptom of neurasthenia is found in a continuous morbid elaboration of normal stimuli. We first notice this effect in the occurrence of infantile convulsions due to sudden noise or flashes of light, harsh words or stern commands. Even apart from any decided history of disease in the parents, these symptoms are sufficient to determine a neuropathic disposition. The failure to recognize this early instability in the nervous system has been the cause of many of the psychic wrecks and human derelicts who have piteously attempted to make their way into the harbor of Success. Nor is all the blame due to our profession, for few parents have so fitted themselves as to follow Tennyson's advice to

“Live and be happy in thyself and serve
This mortal race, thy kin, so well that
Men may bless thee.”

It is not generally recognized that as early as five years of age the child may demonstrate pronounced objective symptoms of a neurasthenic temperament. Uncontrollable temper from unreasonable causes is always a significant sign, and is often followed by slight chorea which may be sporadic or continuous, sometimes disappearing after a few months of activity. As the child grows, precociousness develops, and the nerve sternicity—the capacity for action—masks the true state of affairs: an over activity of the cortical cells. All the psychic centers, especially the sexual, are too early in evidence, and the time is soon to arrive when the patient not only shows symptoms of neurasthenia of nerve cells, but mental neurasthenia; for we must remember that "we have diversities of potential and psychical functionings in strict accordance with physical groupings and arrangements."

I think it may be safely stated that precociousness, mental and physical, is always a sign of neurotic temperament. Frequently in these cases the psycho-sexual element is prominent with morbid introspection. Training and environment determine the direction of the sexual activity, but unfortunate it is that this very training is wanting, as parents of a neuropathic child are generally themselves too cell-tired to give the constant and patient care necessary.

The remedy for this sexual hyperesthesia, so prominent in the adolescent neuropath, lies in early physical training and mental guidance. Mental training in the form of studies should be avoided until there is established sound physical health, and the sexual centers have become quieted. On account of the precociousness of these unfortunates they are encouraged in their mental activities, are looked upon as prodigies, and often after a meteoric career at school or college become psychic wrecks. It is not because in these congenital cases of neurasthenia there is too much cellular activity, but because there is not enough cellular rest. It is because precociousness is not understood by parent and teacher that the

apparently ambitious child is pushed and paraded until the constant molecular activity of the cerebral cells soon exhausts their potential elements, and the result to the individual is volitional effacement. What is the *neurotic's* remedy for this volitional palsy? Alcohol, or some other narcotic; and thus commences the second drama in our trilogy.

It must be remembered that the sensation of fatigue in the neurasthenic is not imaginary as in the hypochondriac or hysteric. It is a physiologic fatigue, a cell exhaustion, and follows certain laws. I have not found it directly amenable to hypnotic suggestion, as is hysteria, although suggestion in the normal state is of some value. It is on account of this genuine cell fatigue that the neurotic, whose sternicity is now almost absent, resorts to alcohol for relief from distressing and often horrible sufferings. That this stimulant brings about increased cellular disturbances, the very thing to be avoided, is frequently recognized, but so overpowering is the immediate demand for mental rest and physical comfort that the unfortunate cares naught for his future welfare, so rabid is his present impulse.

For a time it appears that this constant alcoholic stimulation is beneficial; the individual does do some work, can apply himself to his duties, and his morbidity gives way to ambition and volition. But it's a false jade he is flirting with; for the nerve cells require more and more stimulation to do their work, and the physiological effect of the increasing doses of alcohol is soon noticeable. It does not take long in individuals born with a neurotic temperament for faulty metabolism to enter as a factor in the destructive process, and this is just what takes place. Products of suboxidation, alexins, cause auto-intoxication, and now our victim must resort constantly to alcohol for relief from his horrible psychic sufferings. Poisoned by the auto-toxic material which is sent rushing through the delicate cerebral cells, he worries his friends by his strange actions — his false accusations — his hatred for those he formerly loved and

cared for. Follow rapidly unreasonable delusions, then furious assaults on loved ones and strangers, and we now see the beginning of the end.

Our last scene is the insane ward; where pale, trembling, and incoherent, we witness the last sad words of our unfortunate actor in this trilogy of Neurasthenia, Alcoholism, Insanity. — *St. Paul Medical Journal.*

HOW TO AVOID PRESCRIBING OPIUM AND MORPHINE.

Dr. N. B. Shade of Washington, D. C., in an article published in the *Medical Summary*, refers to many unfortunate effects of prescribing opium and morphine, intimating that the depressing after-effects of the administration of the drugs more than offsets the temporary good accomplished by their use. He mentions a very prominent congressman whose life, in his opinion, was cut short by the administration of morphine hypodermically in the case of pneumonitis. Dr. Shade states that he still prescribes morphine, but very seldom, as he finds it much safer to use papine. Papine, in his opinion, possesses all the desirable qualities of opium with the bad qualities eliminated. Some of the brightest minds of the present age are now being devoted to the development of a therapy in which the primitive bad effects of many important drugs are eliminated. Where the therapeutic action of morphine or opium is desired, it would seem to be a safe procedure to give papine a trial.

Qede beer was the favorite beverage in Egypt six thousand years ago. The location of the town is lost, but the inscriptions on the tombs describe the kinds and qualities used and the process of making. Qede was the Milwaukee of that old civilization which has vanished.

Abstracts and Reviews.

ALCOHOLIC NEURITIS.

BY L. HARRISON METTLER, M.D.,

Professor of Neurology, Chicago, Ill.

The first symptom noticed by the patient is a paræsthesia in the feet and hands. It comes on more or less suddenly, and consists of numbness, "pins and needles" sensation, and a feeling of pricking. There may be actual pain in the limbs, sharp and shooting or dull and rheumatoid in character. These early sensations may occur in the course of chronic alcoholism or after an attack of delirium tremens. Occasionally the temperature may be elevated, but as a rule there are no febrile manifestations. The paræsthesia is bilateral in distribution. It attacks all four limbs about in the same way, and gradually ascends toward the hips and shoulders. The pains are irritating, may be sharp or dull, may come and go in the course of particular nerves, and gradually lessen in severity as the disease advances. A feeling of weakness appears in the limbs in a few days, and the muscles and tendons begin to feel like stiff parchment to the patient, or as if they were tense and just a little too short. Between the numbness, weakness, and slight rigidity the patient cannot coördinate his movements, and so finds difficulty in walking and using the hands. In a little while the weakness passes into an actual paralysis. This seems to involve the extensor more than the flexor muscles, causing wrist-drop and ankle-drop. All the nerves of the extremities

may be involved, but the musculo-spiral and the anterior tibial seem to be especially affected. The muscles of the trunk and head as a rule escape, and the mind is affected in a particular way only in certain cases. The reflexes are lost, both deep and superficial. The muscles are noticeably wasted, and, if tested electrically, exhibit more or less completely the reactions of degeneration. There is some anæsthesia, distributed generally or in spots over the limbs. Hyperalgesia is often a valuable symptom, and the local tenderness in the muscles and nerve trunks is so characteristic a sign that it helps to differentiate the disease from other affections with similar disturbances of sensation and motion. Hyperæsthesia may be discovered in areas of the skin alongside of hypæsthesia. As a result of the sensory disturbances ataxia may be present. Hyperidrosis, œdema, swelling in and about the joints, and even certain skin eruptions and ulcers may be expected among the later vasomotor, secretory, and trophic manifestations. The rectal and vesical functions as a rule are unaffected. Such an outline is the clinical picture of a typical multiple neuritis. Such a pure type, however, is rare, and it is therefore necessary to consider some of the symptoms a little more in detail.

The more prominent of the sensory symptoms, being subjective in character, are less valuable as symptoms than some other signs on that account. They are indicative only of the disease when studied as a part of the clinical picture in toto. If taken by themselves they may be mistaken for hysterical and other psychoneurotic manifestations. Though the sensory phenomena are rarely absent, they assume the most varied and bizarre characteristics. For instance, in the soles of the feet all qualities of sensation may be decreased or lost; or there may be anæsthesia with hyperalgesia or hyperæsthesia with analgesia. A very common combination which I have seen often is anæsthesia with hyperæsthesia in adjoining areas. The touch and muscular senses may be diminished, while the pain sense is highly exaggerated, or vice versa. Instead of being dimin-

ished the sensations may only be delayed. In the trunk a rare girdle sensation is sometimes found, but it belongs to the other symptoms of central disease usually accompanying alcoholic neuritis. It is to be noted carefully that these sensory manifestations are symmetrical in distribution, that they are more extensive than the corresponding paralysis, that they are partly subjective and objective in character, and that they exhibit the variability and irregularity that one would expect from a variable lesion involving a large number of separate and unrelated peripheral nerve fibres. Such an incongruous set of phenomena could only be imitated by a pure psychosis, but a psychosis can easily be distinguished from a polyneuritis by other symptoms.

Much more striking than the sensory symptoms is the motor paralysis. In some forms of multiple neuritis this is almost the only symptom. It is, of course, of the flaccid, degenerative type of paralysis, since the lesion involves the lower or peripheral motor neurones. It is always accompanied by distinct muscular atrophy and alternations in the electrical reactions. It is usually more profound in the legs than in the arms, though great variations are possible as to the areas of its distribution. In some respects it resembles marvelously the paralysis of anterior acute poliomyelitis, for it may involve one leg or certain muscles only in that leg, or only certain muscles in all four limbs, or even all the muscles of all the limbs. Curiously, where a nerve innervates more than one muscle it sometimes happens that one muscle will be paralyzed while the others escape. The nerves may show the electrical reactions of degeneration and yet their corresponding muscles not be paralyzed. The peculiar character of this paralysis has even led some to think that the disease is primarily a toxic injury of the cells of the anterior horns of the cord, with a mere secondary degeneration in the peripheral axones. Though this is not entirely acceptable, it is undoubtedly true that in some cases, at least, the pathological process and its resulting paralysis is partly poliomyelitic as well as neurotic.

Among the cranial nerves the third is most often affected; next the sixth. Reflex pupillary rigidity is rare, but nystagmus, diplopia, and ptosis may all be looked for. Very seldom is the optic nerve involved, though optic neuritis and even partial optic atrophy have been observed several times. There may be a central scotoma, especially for colors. Oppenheim and others have seen a facial diplegia. Among the other cranial nerves that may be involved are the vagus and phrenic and the nerves of mastication and deglutition. Strumpell saw the auditory nerve involved. A polyneuritis limited to the cranial nerves would be a curiosity, and yet such has been referred to by Hosslin and Mannaberg.

The mental symptoms of alcoholic neuritis are deserving of special consideration. They consist of failure of memory, confusion and loss of the proper conceptions of time and space. Korsakoff was the first to name and systemize this polyneuritic psychosis, though others had observed and described it before him. Amnesia, disorientation, pseudoreminiscence, and confabulation are its chief characteristics. Events of the past are spoken of as about to occur in the future, and vice versa. Hallucinations and mild delusions are sometimes present. They are easily repressed. Occasionally they are determined by the sensory symptoms. One of my cases spoke of having just been out in the garden picking flowers and getting covered with burrs, when, as a matter of fact, it was a cold, mid-winter day and she had not been out of bed for ten days. By many this confusional type of psychosis is regarded merely as an alcoholic complication of the polyneuritis. Others attribute it to a mild toxic encephalitis, which, like the peripheral neuritis, is one of the outward expressions of the underlying chronic toxæmia or alcoholism. The hypothesis has even been set up (Turner) that it is the result of the isolation of the patient's mind by the shutting off of his normal afferent impulses through the widespread neuritis. If alcoholic polyneuritis is a distinct disease in itself, then these mental manifesta-

tions are of the nature of pure complications or accidents. If, however, the real disease is an alcoholic degeneration of the entire nervous system, with peripheral neuritis as one of its outward expressions, the central symptoms will then have to be regarded in the light of another set of outward manifestations.

Alcoholic polyneuritis in the majority of instances runs an acute or subacute course, and its prognosis is in the main favorable. It appears rather abruptly, rises to its climax in a few weeks or months, remains stationary for about the same time, and then gradually recedes. There are violent cases that run a rapid course and terminate in death in a few days. In such cases the cranial nerves, especially the vagus and phrenic, are likely to be involved. The general condition of the patient, the implication of the cranial nerves, the extent of the paralysis, and the degree of muscular atrophy are all factors that influence the prognosis. Rarely the disease runs a progressive or even remittent chronic course. Occasionally recovery is complete; more frequently it occurs with some more or less permanent defect. This is especially true of the cases with mental symptoms. Convalescence is always slow and tedious. Irritative symptoms, like pain, disappear first; then the anæsthesia gradually clears up or is replaced by paræsthesia, and, finally, after a long time, the hyperæsthesia diminishes to normal. Sometimes two years have to elapse before all signs of paralysis have vanished. Relapses are not common. Permanent paralysis in particular muscles, and contractures and deformities from overaction of antagonistic muscles, are unfortunately possible. — *Extract from Chicago Clinical Review for July, 1904.*

ALCOHOL AS A CAUSE OF EPILEPSY.

In the recent work on epilepsy and its treatment by Dr. Spratling noticed in our review columns occurs the following:

“The same group of 1,070 cases that yielded 16 per cent. in which the cause was similar heredity contained 111 men and

51 women, 16 per cent. of the former and 12 per cent. of the latter, in which the dissimilar hereditary factor of alcoholism in the parent led to epilepsy in the child.

“The explanation of the greater preponderance of epilepsy due to drink in men is undoubtedly due to the fact that the drink habit is more marked in this sex, a fact our experience tends to confirm through having seen so many cases among middle-aged men due to this cause, while we recall but a single case in which it was clear that drink directly brought on the disease or laid the foundation for it in a woman. In estimating the number of epileptics in different portions of Russia Kovalevsky writes as follows: ‘Caucasus is a country of grape and wine-making. The drinking water from the mountain rivers is bad, but the wine is good. The natives of Caucasus quench their thirst not with water but with wine, and the wine is no light one. It contains from 5 to 15 per cent. of alcohol. Wine-drinking is so common in Caucasus that no one considers it inebriety. Everybody knows what a high percentage of epilepsy is caused by the abuse of alcoholic beverages. I have spent the summers during the last fifteen years in Caucasus, where I have a medical practice drawn from a large district, and in no other place have I had so large a proportion of epileptics among my patients.’ Of such vital importance and so full of interest is the whole question of the effects, both immediate and remote, of alcohol on the human race, that I quote literally from a recent Scottish authority, whose valuable work deals with pathologic factors active in uterine life. Under a study of fetal alcoholism Ballantyne has this to say: ‘Another question concerned with the effects of alcohol upon antenatal life remains to be considered, namely, the dystrophic and teratological results. With regard to epilepsy developing after birth, there is a great deal of evidence that parental alcoholism is an immediate and powerful etiologic factor. Bourneville, who studied 2,554 children admitted to the Bicetre and Fondation Valle, 2,072 boys and 482 girls, all of them suffering

from idiocy, epilepsy, imbecility, or hysteria, found that 1,053 of them were the offspring of drunken parents, 933 having drunken fathers and 80 drunken mothers. 'Sullivan found that out of 219 children of alcoholic mothers who lived beyond infancy 4 per cent. of them became epileptics; a very high proportion as compared to the frequency of the disease in the general population.' It appears singular that insanity should constitute a less predisposing cause to epilepsy than alcoholism, but such is the case. In 660 men and 410 women insanity in the parents was found in 49 men and 42 women, or 7 per cent. of the former and 10 per cent. of the latter. In this case the conditions, so far as proportions go when compared with alcoholism, are reversed; there the greater number occurred among men, while here it is the women that suffer most. Combining both sexes we have a total of 91 cases, or about 7 per cent. of the entire 1,070 due to dissimilar heredity induced by insanity."

Under the head of diagnosis is the following:

"Simple intoxication uncomplicated by convulsions could be mistaken for epilepsy only during the coma period, which is similar in some respects in the two conditions. The fact that the patient in alcoholic coma can usually be aroused to some extent, and the presence of the characteristic alcoholic breath, are usually sufficient to exclude the profound state of coma that follows immediately upon an epileptic fit. In severe cases of alcoholism, in which there happens to be a fracture of the skull with deeper coma, the diagnosis is not easy. In such cases the physician may save himself some humiliation by not expressing a fixed opinion until he has had ample opportunity for observation. When epilepsy arises as the result of either acute or prolonged alcoholic indulgence, it is identical in every respect to the epilepsies induced by other causes, even though we may call acute alcoholic convulsions symptomatic only. In such cases less is to be gained through diagnostic distinctions than through the study of etiology, upon which the treatment

must largely be based. When one or more convulsions follow excessive drinking, and at no other time, the patient should understand that they indicate acute poisoning of a most serious kind, and, unless they are checked, will sooner or later pass into the essential disease, so far as ultimate results are concerned. Not infrequently convulsions due to drink continue after the drink habit is abandoned; in fact this is more often the case than not. After all, the chief point of distinction between most alcoholic convulsions and those of essential epilepsy, so far as the ultimate results are concerned, lies in the relationship in point of time between the indulgence and the convulsion. When convulsions originally due to alcohol begin to appear independent of the intoxicated state, we may no longer regard them as symptomatic only, but as indicative of a profounder state of brain instability."

ALCOHOL AS A FOOD AND AS A MEDICINE.

This question was recently discussed by the three leading medical societies of Paris,—the Society of Medicine, the Medico-Chirurgical Society, and the Society of Medicine and Practical Surgery (Dec. 14, 1903).

M. Roeser demonstrated that alcohol is not modified by the digestive processes. It is absorbed as alcohol, mixed with the blood, imbibed by the tissues, and burned as alcohol.

The nervous excitation induced by the action of alcohol gives rise to a rapid combustion of the bodily reserves. The increase of heat thus produced is only temporary. Appearing suddenly in excess of the actual needs of the body, it is rapidly dissipated, in part by the vaso-dilatation of the superficial vessels. The retarding influence of alcohol upon the vital processes hinders metabolic changes and checks the rapid development of heat, so that the later effect is that of refrigeration or temperature lowering. The combustion of the alcohol takes place in connection with the latter stage, the preliminary

elevation of temperature being due to the combustion of reserves.

Consequently a substance which contributes nothing to the formation of reserve tissue, which can be considered in no sense as a source of physiologic work, giving rise to the development of only a very small amount of heat—such a substance may be harmful; at least, its utility is doubtful; it cannot be regarded as a food. Alcohol, then, is not a food.

M. Glenard, an eminent member of the Society of Medicine of Paris, maintained that alcohol may, according to conditions of quality, quantity, and mode of taking, and especially the ability of the system to adapt itself to this substance, be regarded as a poison, as a condiment, or as a medicine.

M. Pascault declared that alcohol is not a food: for “it takes from us more than it gives us, and feeds us only with illusions.”

M. Roubinovitch tersely declares that “alcohol must be forever relegated to the arsenal of poisons.” He demanded that brandy should be taxed to such a degree that the workingmen would not be able to drink a drop.

REPORT OF FOXBORO HOSPITAL FOR DIPSO- MANIACS.

In the report of the Massachusetts State Board of Insanity occurs the following very suggestive statement:

“There was a marked decrease in the average patient population for the year, which fell to 140 from 204 in 1902 and 243 in 1901. The trustees continued the vigorous exercise of their power of final discharge, dismissing 107 patients as not to be benefited by further treatment, 30 in excess of the previous year's record.

“Commitments diminished to 219 from 315 in 1902, 391 in 1901, and 418 in 1900, resulting probably from a better understanding of the purposes of the hospital and greater dis-

crimination in the selection of cases. The average age was forty years at time of admission and twenty-two years at first attack. Forty-six, or 21 per cent., were fifty years of age or over; 175, or 80 per cent., were admitted for the first time; 37, or 17 per cent., for the second; 3 each for the third and fourth; and 1 for the fifth. One hundred and sixteen, or 57 per cent., were committed from Suffolk county.

"During the year ending March 6, 1903, 217 patients were discharged from treatment. Inquiry made after July 12th showed that 53, or 24.4 per cent., were wholly abstinent; 34, or 15.6 per cent., were drinking less; and 104, or 48 per cent., were drinking as before. The period covered is too short to show conclusively the ultimate results of treatment. It is desirable to know, in as many cases as possible, the full history from the termination of treatment in the hospital to the latest date. An effort in this direction has been made during the past year. At the request of the superintendent, reports concerning the present condition of all 'regularly discharged' patients since the opening of the hospital to Jan. 1, 1903, were made by city and town officials, except in the case of Boston, for which a former patient, deemed reliable, was employed for this service. The interval since treatment varied from six months to nine years. Of 1,043 patients who completed the full course of treatment 243, or 23 per cent., were reported abstinent or temperate; 206, or 20 per cent., improved; 594, or 57 per cent., unimproved, unknown, or deceased."

These statistics confirm the belief that considerable good has been accomplished, but fail to reveal how many have become total abstainers and how long they have been such.

The Forty-sixth Annual Report of the Washington Home, Boston, Mass., shows increased prosperity. During the year ending April 1, 1904, 630 persons have been treated at this institution. Of the statistics 66 were suffering from delirium

tremens, 15 had alcoholic dementia, 12 had alcoholic neuritis, 5 were pronounced insane. Of occupations the following is interesting: Physicians, there were 26; of lawyers, 19; of clergymen, 7; the largest number were clerks, numbering 130. This is the largest institution as well as the oldest in this country for the treatment of this class. In the very excellent report by the superintendent, Dr. Ellsworth, occurs the following very significant sentence: "It is not an uncommon thing to hear men boast that they can drink regularly in moderation and be strong and healthy as any total abstainer. In appearance this may seem so, but it is not true. The effects of alcohol are cumulative, and no matter how well he may appear to be today there is a certain morrow coming in which nerves will avenge the wrong done them and refuse to do what is required of them. The delusive theory that no injury follows because there are no signs is fatal, for the alcohol is doing its work slowly and surely, undermining the constitution, shortening the life, and lowering vitality of every organ." As to treatment the following is very significant: "It is worse than useless to pretend to have found some specific which will put a man in a condition in which he cannot drink; it would be as reasonable to advocate a specific for the cure of insanity. Intebriety is a disease that requires the utmost skill and care in treatment. The peculiarities of each case must be studied, and the treatment adapted to each one. With the coöperation of the patients and their friends a large number can be permanently cured."

THE FOUNDATION OF REFORM. A popular treatise on the diet question. By Dr. Otto Carque. Chicago, Ill.: Kosmos Publishing Co., 765 N. Clark St.

The reader is impressed very favorably with many of the topics and their treatment in this work, and is quite ready to

believe with the writer that many of the great social problems are largely influenced by the faulty diets and ignorant use of foods which fail to build up strength and health. The author is convinced that the cooks by their ignorance and incapacity have more to do in cultivating inebriety than the saloon keepers. The extensive use of flesh foods, condiments, salts, seasonings, he claims, keeps the blood in a feverish condition, and helps promote unnatural dietetic tastes and thirsts. His remedy for this would be to increase the use of fruits, and in the treatment of inebriety a fruit diet is thought to be the surest and best remedy. Many of his views along this line are extremely suggestive. On diet reform, cereals, nuts, and fruits will give the best strength and force possible. These and other allied statements are worthy of more extended studies and practical demonstration. We commend this little work as a very helpful suggestive study to all.

DIAGNOSIS FROM THE EYE. A new art of diagnosing with perfect certainty from the iris of the eye the normal and abnormal conditions of the organism in general and of the different organs in particular. By Henry Edward Lane, M.D. Chicago, Ill.: Kosmos Publishing Co., Clark Street.

The author's conceptions of the subject and his treatment by so-called natural methods is so far beyond the range of our present knowledge that comment is useless. The advanced thinking of the author is associated with a pessimism and dogmatic fault-finding that is quite unusual for original thinkers. Men who are way beyond the average in scientific attainments are usually charitable toward those who differ from them. The author's studies are entirely beyond comment and criticism, and the reader must judge for himself of the value of such work.

EPILEPSY AND ITS TREATMENT. By William P. Sprattling, M.D., superintendent of the Craig Colony for Epileptics at Sonyea, N. Y. Handsome octavo volume of 522 pages, illustrated. Philadelphia, New York, London: W. B. Saunders & Company, 1904. Cloth, \$4.00 net.

Dr. Sprattling has in this work of over five hundred pages given a very fair summary of the latest studies and conclusions in this most difficult and obscure field of medicine. The general arrangement is good, and the division into topics illustrated with cases gives a practical character to the studies that is impressive. The larger part of the book, devoted to treatment and symptomology, will be read and studied more than other parts. We have quoted parts of two chapters, which give a fair idea of the range of study. Probably the most original part is the medico-legal relations. This will well repay study wherever such cases come into court. Automatism is very interesting because of the close resemblance to the same conditions which follow after using spirits. Transitory periodic irritability is another topic of very great interest, and explains many obscure phenomena, which have been otherwise regarded. The author has grouped together a great variety of opinions by eminent authorities showing the different variety of views, opinions, and theories which have been used in explanation of conditions associated with epilepsy. All together the volume is a most commendable contribution on this topic, and one that will be read with great interest and pleasure as well as profit by all physicians. We hope the author will continue his studies in this field and treat more exhaustively some of the topics which he has only outlined here. The publishers, as usual, have presented a very attractive volume, with clear-cut illustrations and large type.

The petition by the medical profession of Great Britain to the central education authorities is one of the most significant

movements of the new century. Over 14,000 physicians, more than half of the medical profession in the united kingdom, have asked that this committee should arrange to have instruction on the subject of temperance and the rules of health given to all children of the national schools.

The *Altruist* is a very sprightly little journal, published at Atlanta, Georgia. One of the central purposes is to create a public sentiment for the treatment of inebriates as sick and diseased. Such efforts are advanced beyond the public sentiment of today. In the near future they will be recognized and accepted as the efforts of pioneers who were beyond their day and generation.

The *Homiletic Review*, by Funk & Wagnalls Co., the publishers, is an exceedingly valuable magazine on current topics of religious character. The reader gets a very clear idea of the rapid movement along these lines, and is introduced to a new world of thought outside of the ranges of science.

The *Popular Science Monthly* is particularly interesting in its late issues. Some of the topics have a very deep medical significance. We commend this journal most heartily to all our readers. It is published by the Science Press, at Garrison, N. Y.

The *Scientific American* is crowded with new and startling records of the advances of science. To a physician this is one of the most stimulating of journals.

Editorial.

ANNOUNCEMENT.

The following official notices are given as a part of the history of the changes in the two societies.

To the members of the American Association for the Study of Inebriety:

According to the action of the committee of the association, I hereby announce that the American Association for the Study of Inebriety changes its name, and will hereafter become known as the American Medical Society for the Study of Alcohol and other Narcotics. The members of this association, its purposes and plans, remain the same.

By order of the Association,

L. D. MASON, M.D.,

*President of American Association for
the Study of Inebriety.*

To the members of the American Medical Temperance Association:

Pursuant to the action of the association at its regular annual meeting in June, 1904, I hereby declare the American Medical Temperance Association dissolved and merged into a new society, known as the American Medical Society for the Study of Alcohol and other Narcotics. The members of the American Association will be assumed to be members of the American Medical Society for the Study of Alcohol and other Narcotics.

By order of the Association,

WINFIELD S. HALL, M.D.,

President of the American Medical Association.

ANNUAL MEETING OF THE AMERICAN MEDICAL
TEMPERANCE ASSOCIATION.

The thirteenth annual meeting of this association was held in the parlors of the hotel Dennis at Atlantic City June 7, 1904. The opening address by Dr. W. S. Hall was read, after which the address by the honorary president, the late Dr. N. S. Davis of Chicago, was read by Dr. Didama. The secretary, Dr. Crothers, read the annual report, recommending a committee to be appointed on the reorganization and the union of this society with that of the Society for the Study of Inebriety. The chair appointed on this committee Drs. Marcy, MacNicholl, Mason, and Crothers. Dr. Mason read a paper on "The Public Care of Indigent Inebriates." Dr. Marcy read a paper prepared by Dr. John Madden on "Alcoholic Beverages in Literature." An interesting discussion followed, during which Dr. Marcy offered a resolution that the subject be continued and that the author be invited to present a paper next year on this subject, and that the chair appoint a committee to report on this topic; carried. Drs. Crothers, Madden, and MacNicholl were appointed. Papers on the following topics, "Disguised Intemperance," by Dr. David Paulsin; "The Influence of Tobacco as a Cause in Disease," by Dr. D. S. Reynolds; and "Alcohol as a Factor in Incapacitating Mothers from Nursing their Children," by Dr. C. W. Stewart, were read by titles and referred to the publication committee. The committee on reorganization made the following report, which was unanimously and formally adopted:

REPORT ON THE CONSOLIDATION OF THE AMERICAN TEMPERANCE
ASSOCIATION AND THE AMERICAN ASSOCIATION FOR THE
STUDY AND CURE OF INEBRIETY.

The special committee appointed by the American Medical Temperance Association and the American Association for the Study and Cure of Inebriety to consider the question of an or-

ganic union of the two organizations submit the following report:

SECTION I. The proposition to amalgamate the American Medical Temperance Association and the American Association for the Study of Inebriety is both feasible and advisable.

The two organizations have common interests and common objects.

The work of the two can be done as effectively and at less expense by one organization.

For these and other reasons that might be deduced we recommend the union of both organizations under the name of The American Medical Society for the Study of Alcohol and other Narcotics, and that the president or presiding officer of each association shall officially declare that their respective organizations are dissolved.

SEC. 2. We recommend that the stated object of this new organization be as follows:

The object of this society is to encourage original research and promote the clinical, chemical, therapeutic, pharmacologic, sociologic, and economic study of alcohol and other narcotic drugs in health and disease; also to study the inebriate and the best means for his care and cure, and to give encouragement or secure the adoption of such medical, legal, and educational measures as shall be prophylactic and preventive of narcotic drug habituation; it also aims to gather, compile, and make available the studies and experiences of medical men in all parts of the country concerning the use of alcohol and inebriety, and to formulate such definite facts as can be utilized and made available in the practice of medicine.

SEC. 3. The JOURNAL OF INEBRIETY shall be the official organ of this society.

SEC. 4. An executive committee, consisting of three members, shall be appointed by the chair. This committee shall, in addition to the usual duties of an executive committee, be associated with the editor of the JOURNAL OF INEBRIETY as a journalistic committee.

SEC. 5. The annual dues shall be \$2.00, payable on January first of each year.

SEC. 6. Members who have paid their dues shall receive the JOURNAL OF INEBRIETY.

SEC. 7. The constitution and by-laws of the American Medical Temperance Association, with the recommendations as noted herein, be adopted as the constitution and by-laws of this society, substituting in every instance where the name American Medical Temperance Association occurs the name American Medical Society for the Study of Alcohol and other Narcotics.

SEC. 8. A brief historical sketch of the two separate societies, as they now exist, be prepared by Dr. T. D. Crothers, and published together with this report in an early issue of the JOURNAL OF INEBRIETY, that there may be a permanent public record of the same.

L. D. MASON,
T. D. CROTHERS,
T. A. MACNICHOLL,
H. O. MARCY,

Committee.

Dr. W. S. Hall, president of the American Temperance Association, announced that this society agreed to the change, and should be henceforth known as the American Society for the Study of Alcohol and other Narcotics. Dr. Mason, president of the Association for the Study of Inebriety, also formally announced that his society accepted the report and joined in the union of the two organizations. The society then adjourned.

The second session of the society was held in the same place June 8th at 9 A. M. Dr. MacNicholl, the vice-president, occupied the chair. Dr. Kellogg read a paper on "Alcohol in Medicine, a Review of the Experimental Work and Results of New Researches." Dr. Frank W. Reese read the second paper, on the "Treatment of Pneumonia without Alcohol." Dr.

Reese was called to the chair, after which Dr. MacNicholl read a paper on the "Influence of Alcohol, Noted in Children in the Public Schools." Very interesting discussions followed the reading of these papers, after which a committee on nomination was appointed, consisting of Drs. Reese, Mason, and Stewart. Later they reported the following list of names as officers of the new society, which were unanimously elected:

Honorary president, N. S. Davis, A.M., M.D., LL.D., Chicago, Ill.; honorary vice-presidents, H. D. Diadama, M.D., LL.D., Syracuse, N. Y., H. O. Marcy, M.D., LL.D., Boston, Mass.; president, W. S. Hall, Ph.D., M.D., Chicago, Ill.; vice-presidents, L. D. Mason, M.D., Brooklyn, N. Y., T. A. MacNicholl, M.D., New York city, F. DeWitt Reese, M.D., Cortland, N. Y.; secretary, T. D. Crothers, M.D., Hartford, Conn.; corresponding secretary, C. E. Stewart, M.D., Battle Creek, Mich.; treasurer, G. W. Webster, M.D., Chicago, Ill.; executive committee, L. D. Mason, M.D., T. A. MacNicholl, M.D., T. D. Crothers, M.D.

Dr. Marcy announced that the honorary president, N. S. Davis, had been taken very ill and was probably on his death bed, and moved that the secretary be requested to telegraph him a message of condolence. Dr. Reese offered a resolution that a fund be raised for a prize for the best essay on the effects of alcohol. The chair appointed Dr. Reese as the chairman of the essay committee for procuring a fund, and the president was empowered to nominate a committee of award when the fund was raised. The following motion was made by Dr. T. L. Mason, seconded, and carried:

Resolved, That this society note with satisfaction that the study of alcohol and other narcotics is receiving increased attention in the medical profession and medical societies, as evidence of which in five of the different sections of this meeting of the medical association papers and discussions have been presented on the etiological, clinical, and therapeutic relations of alcohol to disease. Therefore be it resolved, that as a so-

ciety we still further encourage and promote the consideration of different phases of this subject in the various sections of the American Medical Association. Whereas our membership is virtually limited to the membership of the American Medical Association, and our association holds its annual meeting at the same time and place, and we are practically and to all intents and purposes making a special study of this subject along the same lines as other sections in the American Medical Association, and also that many of our leading members are prominent officers in the American Medical Association and fully recognize the value and interest which this subject commands, therefore be it resolved, that we suggest in the near future a memorial to the American Medical Association to establish a section for the study of alcohol and narcotics. Also resolved, that this resolution be placed on the minutes, and referred to the executive committee for further action and as an evidence of our anticipation of the necessity for the study of this subject by the national society in the near future. A very interesting discussion followed this, after which the society adjourned.

The American Association for the Study and Cure of Inebriety was organized November, 1870, composed almost entirely of persons connected with institutions for the treatment of this disease. Its membership from that time on has comprised the superintendents and directors of asylums for the care of inebriety and many leading physicians and scientific students in other fields of medicine. Now, after a period of thirty-four years of most active, energetic pioneer work, it goes forward into another society under another name for a larger and more comprehensive study. Its history and records have become part of the great evolutionary movements of science. Six volumes of yearly transactions and twenty-eight annual volumes of the *JOURNAL OF INEBRIETY* have been published

containing the records of its work. It has long been evident that the study of alcohol and other narcotics must be made on a broader and more scientific basis before the diseases associated or following from it could be fully recognized. A society for this purpose has been in existence thirteen years. Its membership has been practically the same as that of our association, hence it was thought best that a union of all our efforts in one central society, which would include alcohol, narcotic drugs, and all the diseases following, would create greater interest and command more attention. The names of both societies failed to enlist many persons interested in the subject. The Society for the Study of Inebriety seemed to limit all inquiries to the disease side. The Medical Temperance Society appeared to have a popular reform element in its work, hence a new society covering the entire field seemed to be indicated. In both the same study of inebriates in hospitals and as diseased will be made, together with the technical inquiry into the nature and action of alcohol and other narcotics. The new century calls for a broader survey of the whole field and a mapping out of new districts and new ranges of inquiry. The new society for the study of alcohol and narcotics appeals to all medical men, and invites every possible grouping of facts from every point of view along scientific lines. The poor, mentally-sick inebriate will be studied prominently; but a larger range of early causes, both exciting and predisposing, will come into view in the broader studies of alcohol. The old society will go on under another name and the *JOURNAL OF INEBRIETY* will appear as before as its organ, and the records of the new work will widen. A historic sketch of both of these societies will appear in the *JOURNAL* in the future issues. And now, having entered upon a new field of progress, we confidently rely on the scientific spirit of the new century to carry on the study above all theories and clear away the many problems gathering about this subject.

At the annual meeting of the American Medical Association for the Study of Inebriety held in Brooklyn March 18th, Dr. T. L. Mason, president, occupied the chair. Dr. Crothers, the secretary, read a report of the work of the society, pointing out the difficulties in securing attendance of members who live at long distances, and particularly of persons who are not connected with institutions, whose interest in the general subject has become more concentrated on the new problems of alcohol. He urged that the prevalence of quack institutions managed by reformed inebriates had thrown a cloud over the work of members of this association. The public did not discriminate between old and reputable physicians managing institutions and the advertising man who claimed to have specifics. In this way much of our association work has failed to attract the attention it deserved. He concluded by urging a reorganization of the society on broader lines, appealing to all classes of scientists. Dr. Mason offered a resolution that a committee be appointed with power to act, and that the *JOURNAL OF INEBRIETY* be continued as the organ of the society. This was carried and the society adjourned.

A TRIBUTE TO THE LATE DR. N. S. DAVIS.

The passing away of this distinguished physician calls new attention to his pioneer work and personal influence in the medical evolutions of the times. Outside of the many eminent qualities he possessed was the very rare combination of the prophetic discernment, of the direction and importance of scientific facts in medicine, and a rare tact and skill in describing it. Prophets and pioneers in the realms of science, as in other departments of thought, are often so imbued with a positiveness of their convictions that they become intolerant of the opposition and hesitation of those who do not understand them. Hence they are often arrogant, and lack tact in making them-

selves understood. Dr. Davis very early recognized the necessity of a national organization of physicians, and, with great tact, good judgment, and persistent effort, he impressed others with the same faith. After years of most strenuous effort a great national society has grown up, and on the very week of his death it perfected its plan of organization and reached an ideality towards which it had been moving for nearly half a century. For over thirty years Dr. Davis had urged the danger of alcohol as a beverage and its poisonous influence on nerve and tissue. His convictions were stated in clear, unmistakable words, but with such tact that they never excited opposition or irritation in the reader. Thirteen years ago he formed the Medical Temperance Society for the special purpose of a scientific study of alcohol and its uses. Year after year his annual addresses delivered before this society were marked by the same clear, emphatic tone and were accompanied with earnest efforts to make known the dangers of the injuries which follow from the use of this drug. The subject widened and the society grew, until thoughtful medical men recognized the reality of the evils which he sought to correct. His last address was read before the society while he was on his death bed, and possessed the same hopeful tone and assurance that had characterized his work from the beginning. At this time the two societies, viz.: the American Medical Temperance Association and the Association for the Study of Inebriety, were united into one, with new facilities to carry on a larger and better work. It thus happened that the two crowning acts of his life were consummated while on his death bed, namely, the perfection of the organization of the American Medical Association and the union and concentration of the two societies for the study of alcohol from its scientific side. Both these events are very significant of great changes and development upon a broader field, with larger promises and expectations. Several obituary notices of Dr. Davis's life have mentioned the fact that his greatest pioneer work was helping to organize

the American Medical Association; and also by calling attention to alcohol and its dangers and organizing a society for its study he will be remembered longer than for any other thing he did. Dr. Davis was a very active man, not only as a practitioner but as a teacher, and was noted for his sterling honesty and marked candor and conservatism in statements of facts and theories. He was a very prominent man among his contemporaries, and exercised a very wide influence for good to all he came in contact with. As a writer on alcoholic questions he devoted himself particularly to the damage which alcohol exercised on the blood, heart, and liver, and spoke always with great clearness and certainty on these topics. While he recognized other phases of the subject, he realized that the profession must be taught on these lines first to secure their sympathy and cooperation. Many of his contributions were published in this journal and widely copied. He clearly understood the need of more exact instruction and a revolution of public sentiment in the profession along this line, and his work will be remembered far down in the centuries which began with Rush and included Turner, Parish, Parker, Mason, Day, and others who have passed away.

THE CHAMPION INEBRIATE REPEATER.

Jane Cakebread, who died last year in England, achieved a reputation of having served more time in jail on short sentences than any other person known. During a period of forty years she had been arrested and sentenced to jail two hundred and eighty-four times. Each sentence was for intoxication, breach of the peace, assaults, and similar crimes, committed under the influence of spirits. The notoriety which her frequent imprisonment produced aroused public opinion in England to recognize the absurdity of attempting to treat intoxication by such methods. Her history was an illustration of the

legal methods in every town and city for the cure of such persons, which, instead of curing, actually intensified and increased the evil it sought to relieve. Jane Cakebread had a distinct personality, which in some measure explained the frequent arrests and short confinements in jails. Dr. Jones has recently made a study of these peculiarities in the April number of the *Journal of Mental Science* that is of much interest. From this it would appear that when under the influence of alcohol Jane had a delirium of violent explosive words. She could not express herself except in the most tempestuous way, to which was added delirious acts that made her a storm center of great excitement for the time. Officers and court dreaded to interfere with her liberty, and would only arrest her when forced by public opinion. In the court room she created such a wild scene that the judges disposed of her in the quickest way. In the jail and workhouse she was equally a terror and a source of disturbance. When she was quiet the record of her conduct and violence in the *Police Gazette* and ordinary daily papers gave her great satisfaction. As a dramatist she had acquired by experience the art of posing with the most startling effects of words and acts, and seemed to enjoy a wild delirium of words that terrorized officers and courts and created a fear in all she came in contact with. She was an inebriate whose drinking began soon after twenty years of age. She was born in a respectable family in one of the farming districts of England, and was for many years a waiting maid, and seemed to have acquired a certain amount of gentility added to a common school education and a fair degree of intelligence. On the death of her mistress, who left her a small sum of money, she drifted into London, and, after serving as a bar-maid, entered upon the life of the street, drinking more or less steadily, and when intoxicated showed a particular exaltation and delirium of the language centers. This increased and continued during her lifetime. Finally her notoriety was so great that she was placed in an insane asylum for the last year of her

life. This woman was a marked type of a class that are recognized in every police court as repeaters of the lowest type. They are merely maniacs with varying symptoms, sometimes delirium of language or suspicion or fear. Often it takes on the form of homicidal violence, probably influenced by some concealed delusion. Many of these persons frequently convicted of assault are alcoholic maniacs with delusions of injury from others and suspicion of suffering from injustice and wrongs. A better knowledge of this subject and more rational treatment will cause such repeaters to disappear. In this country such persons would become demented, and be put away in insane asylums or workhouses or die early from acute disease.

PSYCHOLOGY OF STATEMENTS CONCERNING
INEBRIETY.

The frequent sneer of extravagance over statements and intemperate language used concerning questions of inebriety always reflects on the failures of critics to understand the subject. Physicians, laymen, and the press seem to regard all emphatic expressions of writers on these subjects as unreliable and lacking in truthfulness. This is seen in other directions, particularly in science, where every new discovery is received with doubts and denials. Even explorers of a new continent are discredited at first, and their statements considered extravagant. Why every advanced teacher or writer on this subject should be considered incapable of fairly representing the facts is a mystery. One of the largest class of persons who write on this subject are those who have suffered personally or in their families from the evils following from the use of spirits. The language of such persons is often very intense, and their word descriptions reflect this experience, which they can in no way exaggerate except in the estimation of persons who have not had such experience. Another smaller

class are composed of physicians and reformers and persons who have thoughtfully watched and studied the effects of alcohol in the wrecks of individuals and communities; such persons write with an earnestness and supreme confidence of the accuracy of the facts. In both of these classes their earnest, burning words are not the product of distorted views or exaggerated imaginations, but conceptions of realities described in terms unknown to those who have never realized the meaning of these drug states. The literature of persons who describe their experience has a very deep, psychological meaning, which has never been studied. The supposed exaggerations and intemperate terms are reflections of impressions made on the brain, the accuracy of which cannot be disputed. The student who has followed the movements of the psychological laws and forces which move with unerring certainty becomes emphatic and dogmatic to others without this knowledge. In both of these classes there is a message, the truthfulness of which is prophetic, and can only be stated in the strongest possible terms. The old-time criticisms of the early abolitionists sound childish at this time, and yet they were expressions of intuition and coming events unrealized. It is unwise to sneer and condemn the language of reformers and pioneers whose means of knowledge exceed our own, and the personal condemnation of statements of experience and study is but cheap criticism.

We have received a communication containing the history of twenty-five fatal accidents occurring to automobile wagons. Fifteen persons occupying these wagons were killed outright, five more died two days later, and three died a few weeks after the accident, making twenty-three persons killed. Fourteen persons were injured, some seriously. A careful inquiry showed that in nineteen of these accidents the drivers had used spirits within an hour or more of the disaster. The other six drivers were all moderate drinkers, but it was not ascer-

tained whether they had used spirits preceding the accident. The author of this communication shows very clearly that the management of automobile wagons is far more dangerous for men who drink than the driving of locomotives on steel rails. Inebriates and moderate drinkers are the most incapable of all persons to drive motor wagons. The general palsy and diminished power of control of both the reason and senses are certain to invite disaster in every attempt to guide such wagons. The precaution of railroad companies to have only total abstainers guide their engines will soon extend to the owners and drivers of these new motor wagons. The following incident illustrates this new danger: A recent race between the owners of large wagons, in which a number of gentlemen took part, was suddenly terminated by one of the owners and drivers, who persisted in using spirits. His friends deserted him, and in returning to his home his wagon ran off a bridge and was wrecked. With the increased popularity of these wagons, accidents of this kind will rapidly multiply, and we invite our readers to make notes of disasters of this kind.

Dr. S. S. Thorn says of the alcohol in beer: "It is a narcotic, and *cumulative* in its effects. For instance, mercurials are *cumulative*. A dose of one-sixteenth or one thirty-second of a grain would have no appreciable effect on the system; but a number of these administered consecutively would soon produce salivation and other destructive results. So beer accumulates its effects in the system."

Mr. Wm. E. Johnson has a very interesting paper in the June number of *Chautauquan* on "Railway Temperance Regulations," showing that from seventy-five to one hundred thousand new men employed every year on American railroads were obliged to promise to be total abstainers in their work.

Clinical Notes and Comments.

THE PSYCHIC EFFECTS OF GIVING ALCOHOL.

The following suggestive extract is from a paper read by Dr. Cabot of Boston, Mass., on the "Action of Alcohol on Disease and the Circulation" before the Association of American Physicians, and appearing in the *Medical News* of N. Y.:

"(1) On the mind of the physician and of the patient's family or friends.

"(2) On the mind of the patient himself.

"(1) The virtues of alcohol as a stimulant have been so firmly established in the minds of the laity that both the patient and his friends are apt to be comforted by the knowledge that it is being given. It does not sound exactly like a drug, its taste is generally not disliked, and the cheering impression that something is being done, and done pretty frequently, is diffused among those who are caring for the patient, and may reach the mind of the patient himself.

"By a sort of auto-suggestion, a similar impression is sometimes produced upon the physician as well. It is very hard to sit still and do nothing for the patient, and, when we have no very reasonable belief in the efficacy of a drug, it is a relief to the physician's mind to give something, especially something that is welcomed by the patient and his friends, and something of which the community generally has a high opinion. Then the soothing effect upon the patient, which the narcotic action of alcohol produces, is indirectly soothing to the physician as well, and increases his willingness to prescribe and to continue the so-called "stimulant." In short, alcohol makes physicians, patients, and friends more comfortable.

" (2) The narcotic action of alcohol, its tranquilizing and benumbing effects upon the nervous system, have been very properly insisted on as a therapeutic influence of considerable importance by Cushny and by Meltzer in recent addresses on the use of alcohol in disease. To save the patient from worrying about himself, from brooding on the cause and apprehensions about the future of his disease, is certainly to do him a service. But we cannot, at the same time, praise alcohol for bringing the patient into so passive and vegetative a condition and expect also to take advantage of that active, fighting determination to get well, which many physicians suppose to have a real effect in combating disease. Either the tranquillity or the actively resistant will power of the patient must be sacrificed. Whether either factor has any genuine influence on the course and outcome of disease is entirely a matter of guesswork. We have no definite knowledge in the matter, and all that I mean here to point out is, that if we are to maintain that the narcotic effect of alcohol is beneficial we must give up the idea that the patient's will power is an important factor in his recovery.

" But, although it is generally assumed that alcohol has a benumbing effect, and so a tranquilizing effect upon the patient, it has not been my experience that any such effect is always or even usually to be observed. That very striking neutrality of alcohol, which has been my chief lesson throughout all the other observations which I have made on its action, has impressed me and surprised me afresh in studying its psychic effect. Only in four out of the 69 cases in which I have watched for the tranquilizing effect of alcohol has any such effect been noticeable. In the vast majority of patients, as I talked with them several times each day during a period of about six weeks, no change whatever in the prevailing mood could be determined. The down-hearted patients were not notably more or less down-hearted, the cheerful ones were neither more or less cheerful. One patient in especial, in whom the dose of sixty ounces of champagne per twenty-four

hours was suddenly cut off, showed not the slightest psychical change that I could detect.

"A few typhoid patients seemed to sleep a larger part of the day during the day when alcohol was given them, but it was difficult to be sure that this change would not have taken place spontaneously. In one patient who become more sleepy just after the alcohol was given him the sleepiness continued just the same for the next ten days after the alcohol was withdrawn, in fact until the temperature became normal."

CEREBRAL HEMORRHAGE DUE TO ALCOHOL.

The late Dr. F. S. Pearce of Philadelphia, in a recent paper, says: "It was Dr. Charles E. Dana who made the statement that the average limit for any human body is 3,000 alcoholic intoxications. I am certainly convinced that one or a hundred intoxications are too much for the normal function of the brain and its circulation, and that each time the brain becomes so engorged we have tendency toward cerebral hemorrhage. No physician should doubt this who reads upon the face of a debauchee that grosser sign of a congested facial dermis, the aftermath of a "night off." It is a sad picture to me personally, for I seem to see the microscopic condition going on in the highest structure of the body, the nerve cell, and the resultant malnutrition of the vasomotor system, which in turn permits arteriosclerosis and fatty change in the vessel walls, tending towards the sure approach of apoplexy. I do not wish to moralize or preach a sermon, but simply to give the scientific facts of the case of the surrounding ("epiphenomena") signs of apoplexy. That one person undoubtedly resists the physical and mental effects of acute alcoholism more than another is true; but I can find no statistics to oppose the fact that these same individuals prone to excesses are more invulnerable to arteriosclerosis, inflammation of serous membranes, and liability to autointoxication from disturbed metabolism—in fine,

an increasing vicious pathologic circle with premature senility or early death from apoplexy. How many times have you seen the "healthy" man, described by the laity and quietly presumed to be so by the physician, carried off suddenly by heart failure, so called, cerebral congestion, thrombosis, embolism, or apoplexy? No such man was well, in scientific terms, for months or years preceding his demise.

"I wish to emphasize the points rehearsed above, for it is here alone that degeneration of the nervovascular system may be prevented; after the typical present prodromes, which we all know so well, the danger line has been surely passed. When vertigo, a high blood count of the red cells, catarrhal gastritis, congestive headaches, forgetfulness, hardened arteries are combined, we may or may not save the patient by conscientious statements of the facts to him, although we are exempted from blame if he does not submit to the treatment we will surely recommend and carry out for the just-mentioned symptom complex. As to treatment, here the abandonment of venesection at the present day is to be regretted, for I have seen in my own practice cases in which the patients who were plethoric and presented the signs just rehearsed were greatly relieved upon withdrawing a pint or more of blood, and the apopleptic attack was undoubtedly prevented. Of course all other methods should be enjoined, such as attending to the emunctories, especially the kidneys, and to be on the sharp lookout for insidious nephritis, a malady frequently simulating apoplexy."

PROHIBITION AND THE ALCOHOL QUESTION.

The following editorial in the *Medical Times* of New York is an excellent presentation of the facts:

"The problem of the food value of alcohol does not seem, after all, to have been finally resolved by Prof. Atwater. A German physiologist of high standing, Prof. Kassowitz,

has lately published the details of an experimental investigation which has led him to precisely the opposite conclusion. A certain number of dogs were given definite amounts of food, some with and some without alcohol, and required to take a stated amount of exercise each day in a running machine. These trials, and several others of a like nature, were repeatedly carried out, and it was found that the recorded results were uniformly against the alcohol-fed dogs, both as to the amount of work accomplished and changes in weight. The author is of the opinion that no food material can be used in the body without first being converted into protoplasm. Since alcohol, being a stimulating and poisonous substance, destroys the highly complex and unstable protoplasmic molecule, it cannot at the same time be assimilated by it, consequently it cannot act as food and poison simultaneously. After a comparatively short period alcohol paralyzes the center of innervation of the muscles, and, therefore, by diminishing the amount of muscular action, the secretion of carbonic acid is lessened. The diminished secretion, consequently, means no saving of the tissues of the body, but is a direct result of the poisonous action of alcohol. Kassowitz is convinced that under no circumstances can alcohol act in a nutritive manner. Such is the latest authoritative pronouncement on this subject from the world's scientific center. What do we learn from the facts of human experience? Daily observation shows that all men who drink do not become drunkards. Those who are thus unfortunate are not so because they are weak in will or morals, for men of the highest character have become inebriates. A man is a drunkard because he has a nervous system that is peculiarly susceptible to the poisonous qualities of alcohol. No young man, when he begins the moderate use of alcoholic beverages, knows whether or not he belongs to the class that can drink without danger. He can find this out only by experiment, and after the experiment it is likely to be too late to avert the disastrous results, against which strength of

character and will is no safeguard, any more than it would be against smallpox. Therefore, strict avoidance of alcoholic beverages is the only logical conclusion, if the gravest perils are to be avoided. This position conceded, it follows inevitably that the sale of alcoholic beverages ought to be restrained by law. But it is now declared in certain quarters that prohibition, after being tried in several states for many years, has been found to aggravate the very evil it is designed to cure — besides fostering the additional vice of hypocrisy. In Maine, for instance, the great mass of the male population, we are assured, persist in regarding it as “no crime to take a drink whenever they want to.” Why, then, do they not rise in their might and wipe out the useless and obnoxious statute? The true reason, probably, is given by the *Maine Journal of Medicine and Science*, the official organ of the Maine Academy of Medicine and Science, and the only regular medical journal published in the state, when it says that prohibition *does* prohibit, if there are only zealous and faithful officials to enforce the law. That the law can be enforced was shown, it says, by the late sheriff of Cumberland county, and a notable diminution in the demands on the poor fund was an immediate result. It cites, further, the experience of the city of Quincy, Mass., which for twenty years has been without the open saloon. During that time it has doubled its population, tripled its valuation, and increased its savings bank deposits over fourfold. All this is not so remarkable as the additional fact that, while the population has doubled, the amount required for poor relief has diminished by a notable percentage. This is testimony from an apparently competent witness on the ground, and must be accepted until rebutted by better. It is undeniable that we cannot absolutely prevent illegal liquor-selling any more than we can robbery and murder, or less criminal acts, but this truth does not warrant the commonly repeated assertion that “prohibition does not prohibit” in the sense that it cannot successfully prohibit. The real difficulty undoubtedly is that

the people concerned cannot or will not often enough elect officers who, sworn to enforce the laws, will not perjure themselves. That any community is better off without the free and open sale of liquor needs no argument; and it is, to physicians at least, an established fact that has no relation with the academic question of the consumption of alcohol in the healthy organism or that of its occasional value as a medicine in pathologic states.

It is a little-noticed fact, yet none the less striking, that all this is beginning to be found out even in states which newspaper paragraphers have long been in the habit of classing as hopelessly addicted to the flowing bowl. A large part of Kentucky is at this moment under local prohibitory law, and the *New Orleans Times-Democrat* states that Texas is already on the verge of prohibition. If we compare the population of the wholly or largely "dry" counties in that state with the population of the wholly "wet" counties, we shall find that three-fourths of Texas is actually under prohibition. Finally, as in Mississippi and other states, the Prohibitionists, having carried a majority of the counties, have decided upon appealing to the legislature for a state election which would pass on the liquor question for the entire state. A few years ago prohibition would have been voted down in Texas by an overwhelming majority, but the movement is so strong now that the saloon people are afraid of the election and are working to avoid it. This does not look like that reaction which the advocates of moderate indulgence would fain persuade us has set in and is bound to prevail against the pernicious ascendancy of "Neal Dowism." Rather does it point to a universal popular recognition in the near future of the fact that the liquor-dealing element everywhere is hopelessly in conflict with civic welfare, and must either rule and ruin or be utterly suppressed.

SOME STATISTICS OF THE INFLUENCE OF
ALCOHOL IN PRUSSIA.

Dr. Waldschmidt gives the following in the journal of the State Prussian Statistical Bureau, which is copied by the *Medical Temperance Review*:

“ Taking the figures from the census papers of 1899, found that there were received in this year into the general hospitals 14,386 alcoholics (13,610 male, 776 female), into the lunatic asylums 6,975 (6,259 male, 716 female); altogether, 21,361 (19,869 male, 1,492 female). Of these, 6,514 (6,104 male, 410 female), or 30.4 per cent. (34.6 per cent. male, 37.4 per cent. female), simple alcoholics, and 3,978 (3,755 male, 183 female) with delirium, 438 (379 male, 59 female) drunkards, and 2,098 (1,903 male, 168 female) chronic inebriates. Of the 3,978 with delirium, 2,535 were admitted to the general hospitals, and 1,980 of the 2,098 chronic inebriates. The simple alcoholics come for the most part into the hospital; into the asylum there come almost exclusively the alcoholics with evident mental deterioration, not reckoning those with delirium, of which the greater part enter the hospital. These simple alcoholics are usually discharged as “cured” after a few days, or, at the most, weeks. Only the alcoholics with other definite diseases remain much longer in the hospital. Of these diseases, the most common are those of the lungs (14.9 per cent. of all), accidents (9.8 per cent.), abdominal complaints (7.7 per cent.), and rheumatism (? neuritis) (7 per cent.).

“ In the asylums the alcoholics form 9.6 of all admissions (15.9 male, 2.2 female); 77.6 per cent. suffer from well-marked mental changes. Under the penal law there were 1,987 (1,857 male, 130 female), or 28.5 per cent. Of the male alcoholics, there died 5.2 per cent.; of all males, 6.9 per cent.; of the female alcoholics, 6.2 per cent.; of all women, 7 per cent. Of those with delirium in the asylums there died 7.1 per cent. (from 1895 to 1897, 6.6 per cent.). Delirium tremens was specially

noted as the cause of death in 785 cases (706 male, 79 female) ; in 1898 only in 587.

"The number of those admitted for alcoholism has very much increased during the last ten years; from 1886 to 1888 they averaged 10,594 per annum; from 1895 to 1897, 12,228; and in 1899, 21,361. In the whole of Germany the number rose from 13,067 in the years 1886-88 to 15,347 in the years 1895-97.

"As the hospitals are not intended for the final cure of the drunkard there is need for the inebriate institutions, and, at the very least, for the 14,386 alcoholics received into hospitals."

THE TREATMENT OF INEBRIATES.

The following resolutions were adopted at a meeting held at the residence of Dr. William Oldright, Toronto, April 19, 1904:

1. That it is much to be deplored that up to the present time no provision has been made in this Province, either by the government or by the municipalities, for promoting the treatment of indigent inebriates; that the general custom of committing these unfortunates to jail is neither deterrent nor reformatory; it is degrading and bad economy, and in cases where the inebriety is a disease it is inhuman.

2. That we deplore the fact that the members of the Ontario government have not been able to see their way clear either for the introduction of the proposed bill for the economic treatment of indigent inebriates, or for the adoption in this Province of the probation system for first offenders, either as delinquents or as drunkards — a system that is both economical and reformatory, and which saves from jail stigma and contamination.

3. That, realizing as we do that some action should be taken in this important matter without further delay, we rec-

commend that the necessary steps be taken for the formation of a society for promoting the reformation of inebriates, but that before an appeal is made to the public for financial aid it is recommended that an effort be made to secure to the movement the commendation of prominent citizens.

We, the undersigned, have considered the above resolutions regarding the "Treatment of Inebriates," and we are in hearty sympathy with them; we are willing to coöperate in the movement therein outlined, and would commend it to the earnest consideration of others.

WM. OLDRIGHT,
JAMES MASSIE,
A. M. ROSEBRUGH.

REPORT OF DR. CLOUSTON, ROYAL EDINBURGH
ASYLUM.

During the last thirty years the recovery rate had gone down, but the death rate had increased; the deaths from recurrent disease had risen; senile insanity was increasing; adolescent insanity had also increased out of proportion to the increase of population; general paralysis was greatly increasing, from 205 to 431 per decade in the thirty years; alcoholic insanity went steadily up, this year in no less than 42.3 per cent. of all the men and in 18 per cent. of the women, much the largest proportion ever experienced. Excess in alcohol was assigned as the cause of their insanity. In 1873-7 the percentage of alcoholic cases was only 18.5 among the men and 10.5 among the women admitted. That had now been doubled. Dr. Clouston said it sometimes occurred to him whether one of the after-effects of the nervous lowering which the universal epidemic of influenza of 1890 undoubtedly caused might not have set up the craving for the stimulus of alcohol with a lessened power of resistance to its effects on the brain. Since 1890 far more of the depressed forms of insanity had

been sent in. Another explanation was that more money was probably earned by those who had not sufficient self-control and self-respect to use it rightly. It was a social scandal of a very alarming kind that nearly one-half of the insanity of any district should be more or less due to drink. Finally, Dr. Clouston urged the importance of a rational view of mental diseases. (1) It should be regarded simply as a disease of the brain; (2) it may be mere arrestment of brain growth in early life; (3) it might be an event in the natural process of decay and retrogression; (4) it may be merely the effect of poisons; (5) some brains were from the first sensitive and unstable; (6) heredity; (7) anyone may become unsound in mind if certain causes come into operation.

In 1903 the national drink bill, or money spent in the manufacture and sale of alcoholic liquors, amounted to \$1,600,000,000; the expense for pauperism, crime, insanity, and losses directly growing out of the business was over \$150,000,000. All this grows directly from the delusion of permitting and licensing the free, indiscriminate sale of the alcoholic drug as a beverage in the open market. It is dawning on the minds of thoughtful men everywhere that this is one of the great evils of the present day. Prohibition is in the air and moving over the country like a flashing ray of light. The railroads recognize it, the government mail service are enforcing it, business and commercial interests everywhere know that along this line is safety. A business which destroys the capacity of men and women to live natural temperate lives and renders them unfit for the duties of citizenship is a menace to civilization. The supporters and defenders of the use of spirits as a beverage are the veritable anarchists of the country.

THE PAIN IN RHEUMATIC GOUT.

Chas. P. Heil, M.D., late Professor of Anatomy, Indiana College of Medicine, Indianapolis, Ind., in the *Mobile Medical and Surgical Journal*, states: "Many of the cases of rheumatic

gout which I have treated were of an obstinate and complicated character, and I must state that I myself have been suffering with an attack in the nature of a very severe inflammatory condition, situated in and over the articulations of my wrist, knee, and ankle joints. The pain which I suffered most of the time was indescribable. I placed myself under the care of a physician, who, upon examination, pronounced me also slightly affected with cardiac trouble. I suffered the most excruciating pain for ten days and nights, without alleviation of my sufferings, nor apparent signs of progress for the better. Knowing full well the efficiency and value of *Antikamnia Tablets* in these cases, I took two tablets, and about ten minutes after taking them the pain was relieved, — I perspired slightly and then fell into a gentle sleep. The result was simply magical. I slept eight hours in perfect rest, free from all pain. I continued the two tablets every four hours during my convalescence and until complete recovery."

THE DANGERS OF ACETANILID.

The following editorial is a very timely caution of an evil that has assumed a startling prominence among drug-takers. It should be noted as a danger which can be prevented at present:

There has recently been considerable discussion among statisticians and sanitarians both in this country and in England as to the cause of the increase which has been apparent during the last three or four years in the number of sudden deaths from heart disease. It has been suggested, and with considerable reasonableness, that many of these deaths were due to the increased use of acetanilid by large numbers of the people. There are two chief methods in which acetanilid is obtained by the people. One is in the form of headache powders which every druggist is aware are consumed in enormous quantities by all classes of the people. These powders are extensively

advertised and freely bought over the drug store counter, and are also sold in many large department stores. They all contain acetanilid, a powerful cardiac depressant, which causes destruction of the blood corpuscles and transforms the hemoglobin into methemoglobin. This drug is unquestionably a powerful tissue poison, and, if used at all, — and it is doubtful if it is ever indicated, — should only be taken by the direction and under the observation of a physician. Phenacetin has the same antipyretic and analgesic properties as acetanilid, without its dangers, and should always be prescribed. Phenacetin, however, is much more expensive than acetanilid, and as it is a drug which has been in very general use by physicians during the last few years, and as it closely resembles in appearance and in its general properties acetanilid, it has been discovered that large numbers of druggists in New York, and doubtless elsewhere as well, have been in the habit of substituting the latter, charging for the more expensive drug and dispensing the cheaper. The New York Board of Health purchased through its inspectors 373 samples from as many druggists, asking in each case for phenacetin. On analysis it was discovered that out of the 373 samples 58 only were pure phenacetin, 315 were adulterated with acetanilid, and 32 samples were pure acetanilid. This was at the beginning of 1903, and the facts having been published, and the druggists warned that a second offense would mean prosecution, there was immediately a marked diminution in the amount of acetanilid dispensed, and, oddly enough, the vital statistics for New York for 1903 showed a considerable falling off in the numbers of sudden deaths from heart disease. During the previous two years these deaths had been steadily increasing. We are well aware of the fallacy of such statistics, and do not admit that the relationship between the popular use of acetanilid and sudden death from heart disease has been demonstrated; but we do think that the matter is of sufficient importance to warn physicians, and, through them, their patients, of the undoubted

dangers of acetanilid taken in the form of headache powders or otherwise, and to warn druggists that substitution is a crime carrying with it a heavy penalty for the offender. — *Editorial, St. Paul Medical Journal, March, 1904.*

Dr. French, in a very interesting article published in *Merck's Archives* on the "Antagonism of Strychnine and Alcohol," concludes as follows: "The keynote of strychnine is stimulation, and that of alcohol paralysis; that the two are in their main therapeutic effects directly opposed, and that their conjoint use is an absurdity. Whatever virtues alcohol possesses—and it certainly has some valuable ones—do not come from any effect as a stimulant, and whatever benefits may result from strychnine are not observed when it is used as an adjuvant of alcohol.

The *Todd Electrical Static Machine*, manufactured in Meriden, Conn., is one of those practical machines that wins its own way on the market without the aid of fulsome advertising. Wherever it is used its good qualities are recognized and its value is established. It undoubtedly has many qualities superior to other older machines on the market. Its uses as a stimulant and tonic in nervous diseases is increasing constantly, and no institution is complete without a machine of this kind. We take great pleasure in recommending this machine to all who expect to purchase one.

The New Therapy Bulletin is a practical journal devoted to the study of mechanical vibratory stimulation, and is a new form of treatment which promises to supersede a very large amount of drug-taking. There is no new remedy or means of treatment that promises more at the present time. The *Chattanooga Vibrator* is the name of the instrument, and is one of the most practical that is used in this field. We have found it very valuable. Send for a catalogue.

The great drug firm of *Farbenfabriken of Elberfeld Co.*, of New York city, have brought out a new form or more concentrated preparation of nitrate of strychnine. This seems to be more valuable than ordinary preparations. It is thought that some form may be found possessing less of the stimulating action and more of the tonic qualities. This appears to meet this want.

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The editorial department in the *Review of Reviews* is one of the most interesting cotemporaneous histories of passing events that is published. This in itself is the most distinguishing feature of the journal. We commend it to all our friends.

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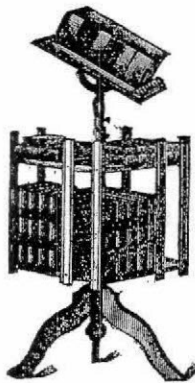
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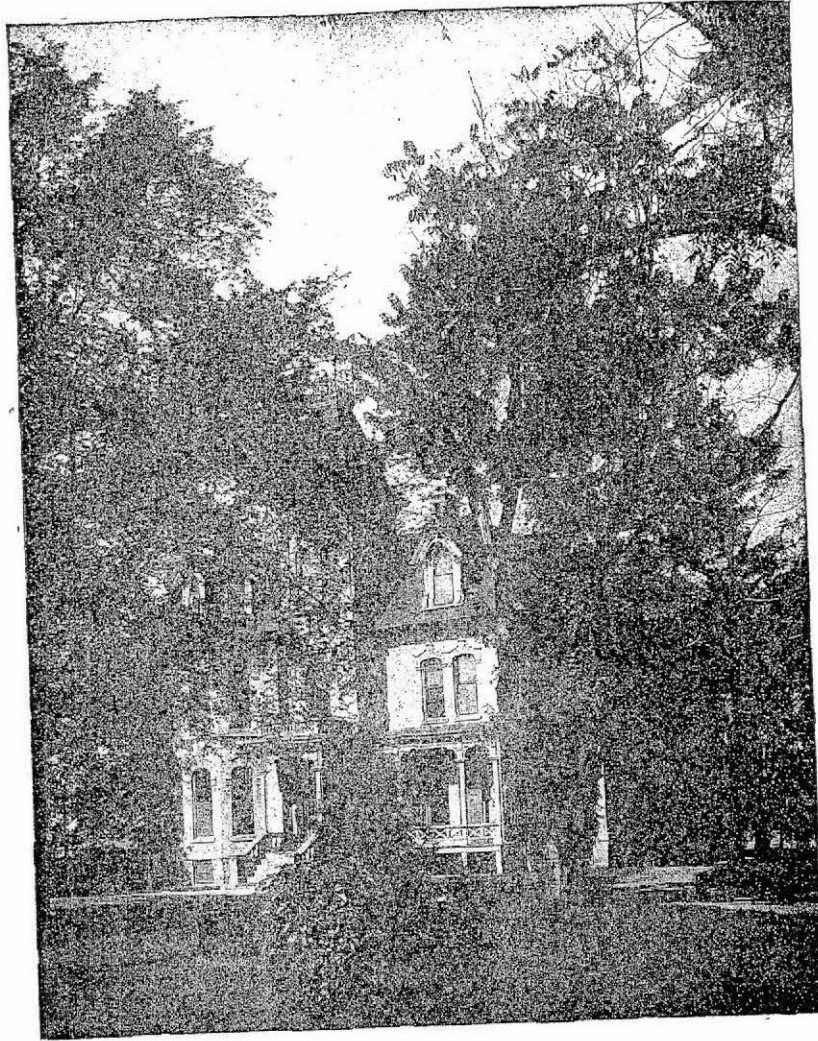
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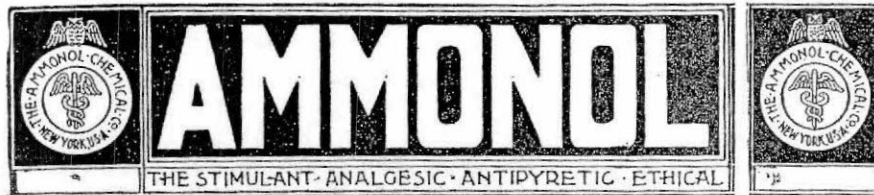
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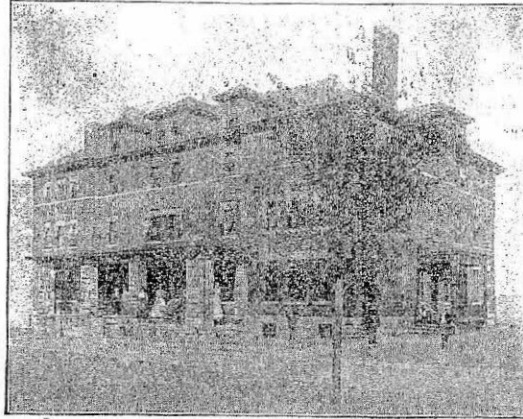
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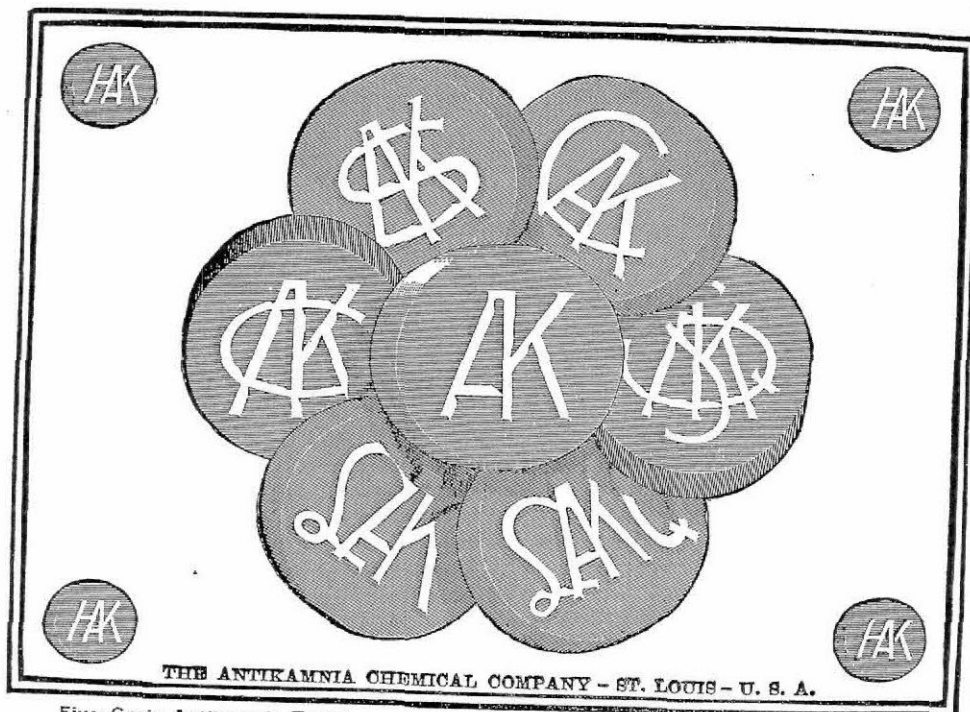
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The Milwaukee Sanitarium at Wauwatosa, a little village in the suburbs of Milwaukee, Wis., is a well conducted, home-like hospital for nervous and mental diseases. A department for alcoholic and drug takers is fitted up with every appliance for successful treatment. The superintendent, Dr. Dewey, is a noted specialist, and can be seen at his Chicago office, 34 Washington St., on Wednesdays of each week.

Oak Grove of Flint, Mich., is a large private hospital for the treatment of all forms of mental and drug addictions. On the grounds are mineral springs of great value, and hydrotherapy as well as electro-therapy are special means of treatment. The superintendent, Dr. Burr, is eminent in the profession, and the hospital has been organized over a quarter of a century.

Dr. Broughton's Sanitarium at Rockford, Ill., makes a specialty of treating opium addictions. His long experience and special study of this class of cases give rare facilities for the treatment of these neurotics.

The Waukesha Springs Sanatorium, located at a little village of this name, under the charge of Dr. Caples, furnishes excellent surroundings, care, and protection for neurotics and drug takers. The mineral waters at this place give additional help in the treatment of cases, and the institution is well managed and an excellent place for skillful treatment.

Fair Oaks at Summit, N. J., is a small hospital for a few selected cases, and presents many ideal conditions for the successful restoration of these cases. The physician, Dr. Gorton, has had many years' experience as a specialist, and manages a most excellent place.

The Oxford Retreat and The Pines describes two pleasantly situated hospitals under one management at Oxford, Ohio. Mental, nervous, and drug cases are received. This institution has been organized many years, and is among the oldest, most thoroughly equipped sanitariums in the middle West. The physician, Dr. Cook, is associated with his son, and both are men of fine reputation and very widely known.

The Richard Gundry Home at Catonsville, in the suburbs of Baltimore, Md., under the charge of Dr. R. F. Gundry, is an excellent sanitarium, with every appointment for the successful care and treatment of nervous and drug cases. Its location and surroundings make it an ideal home for the treatment of this class.

The High Oaks Sanitarium at Lexington, Ky., receives a limited number of mental and nervous cases and is under the care of Dr. Sprague. It is a thoroughly well organized, scientific institution.

Dr. Pettey's Retreat at Memphis, Tenn., receives only drug and spirit takers, and is a well organized, carefully managed home for the best class of cases suffering from these addictions.

Hall-Brook is a private hospital for mental and nervous diseases, under the care of Dr. D. W. MacFarland, Greens Farms, Conn. Its location is unsurpassed for mountain and water scenery. Drug cases are taken and the institution is well patronized.

Dr. Sterns' Sanatorium for nervous diseases, called "The Norways," in the suburbs of Indianapolis, Ind., is a very attractive place for neurotics and drug takers. The surroundings and appliances for thorough scientific care are of the best class, and both the institution and its managers are thoroughly scientific and have the confidence and respect of all medical men.

Dr. Bond's House is a private home for a few persons at Yonkers, N. Y., overlooking the Hudson River. Both the treatment and surroundings are scientific and of excellent character. Special personal care is given to each one, and for persons able to pay there are exceptional advantages in this place.

The Grey Towers at Stamford, Conn., is an attractive sanitarium with beautiful location, overlooking Long Island Sound, receiving mental nervous cases with all forms of drug addiction. This well established home has been before the public for many years under the care of Dr. Barnes, and is doing very excellent work.

The following is a partial list of excellent institutions for the care of inebriates and mental cases, each one of which has special facilities for the successful treatment of such cases:

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- Falkirk, Central Valley, Orange Co., N. Y. J. Ferguson, M.D.
- Westport Sanitarium, Westport, Conn. Dr. F. D. Ruland.
- River Crest, Astoria, L. I., N. Y. J. J. Kindred, M.D.
- Greenmont-on-the-Hudson, Ossining, N. Y. R. L. Parsons, M.D.
- Walnut Lodge Hospital, Hartford, Conn. T. D. Crothers, M.D.
- Mt. Tabor Sanitarium, Portland, Oregon. Dr. H. W. Coe.
- Maplewood, Jacksonville, Ill. F. P. Norbury, M.D., 420 State St.
- The Cincinnati Sanitarium, College Hill Station, K, Cincinnati, O.
Dr. F. W. Langdon.
- Long Island Home, Amityville, L. I., N. Y. Dr. O. J. Wilsey.
- Knickerbocker Hall, College Point, New York City. W. E. Sylvester, M.D.
- Lake Geneva Sanitaria, Lake Geneva, Wis. Dr. W. G. Stearns.
- The Blue Hills Sanitarium, Milton, Mass. J. F. Perry, M.D.
- Dr. Dunham's Home, 1392 Amherst St., Buffalo, N. Y. S. A. Dunham, M.D.
- Dr. Moody's Sanitarium, San Antonio, Texas, 315 Breckenridge Ave. Dr. G. H. Moody.
- Private Home for Nervous Invalids, Kansas City, Mo. J. Punton, M.D.

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