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# THE JOURNAL OF INEBRIETY

PUBLISHED BI-MONTHLY

OFFICIAL ORGAN OF THE AMERICAN MEDICAL SOCIETY FOR THE STUDY OF  
ALCOHOL AND OTHER NARCOTICS. EDITED BY T. D. CROTHERS, M. D.

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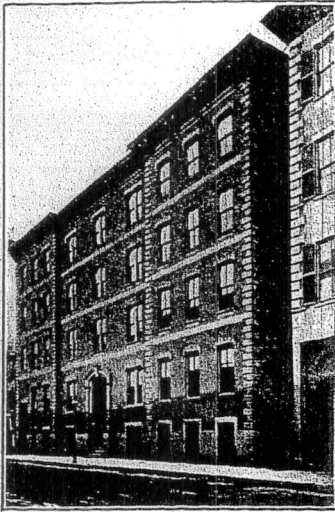
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# The Journal of Inebriety

Published Bi-Monthly

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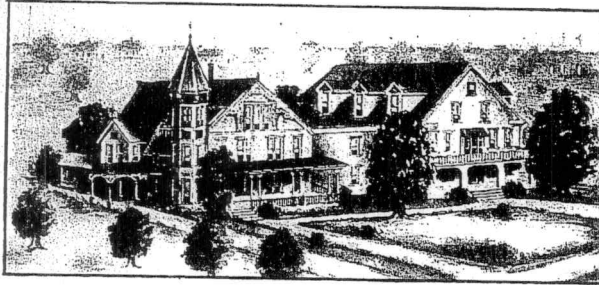
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The special object of this society, is to gather and formulate the facts of the disease of inebriety, and other narcomaniae, and indicate the means of cure and prevention by every remedial means and measure known to science.

The work of this society is to compile and make available the studies by physicians in all parts of the country, and publish them in the Journal of Inebriety, the organ of this society, independent of all previous theories, and from a strictly medical point of view. All regular practitioners of medicine may become members of the society by a majority vote of the Executive Committee, accompanied with an initiation fee of \$5.00. The annual dues are \$3.00, which includes a subscription to the Journal of Inebriety for one year.

Associate members will be required to pay \$3.00 which will include the Journal of Inebriety for one year. Annual and semi-annual meetings will be held, in different cities, as arranged by the Executive Committee.

## Officers of this Society for 1913 :

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NO. 3

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To whom all business communications, relating to subscriptions and advertisements should be addressed.

All exchanges, contributions, reports and matter pertaining to the Journal should be addressed to the Editor, Dr. T. D. Crothers, Hartford, Conn.

## Editorials

### OUR ASSOCIATION.

It was a cold November morning in 1870 when a small group of physicians met in the parlors of the Young Men's Christian Association in New York City, and formally organized a society for the study of inebriety, along purely scientific lines.

Forty-three years have passed, and only one of that little pioneer band is still living, namely Dr. L. D. Mason, our President. During all these long years this society has met annually and semi-annually, and a great many papers have been presented and read, and still the subject is new and scarcely yet touched.

The work at first was treated with contempt as ridiculous, unworthy of notice, then came a period of condemnation, and severe criticism; now there is a half recognition of the possible scientific character of a study of this kind.

During the last ten years the papers read before our Society have roused new interest in the subject and been epoch making in many ways. Many of these papers have had an enormous circulation, been reprinted and translated into other languages, and the real work of our Association is coming into recognition with every advance along scientific lines.

It was a bold step forty-three years ago for a little group of physicians to organize and assert that inebriety was a disease that called for medical study. It was an equally bold step to send out into the field of literature, the Journal of Inebriety in 1876 and ask the medical public to read it and endorse its most advanced position.

The programme of our coming meeting and this copy of the Journal shows the wisdom of this pioneer work, and indicates beyond question the larger field of the study, treatment and prevention of inebriety and alcoholism.

Our Society and its Journal have merely crossed the frontiers of a new country, the flora and fauna of which are yet unknown. We of the present have the clearest convictions that the work of our society and the Journal will be carried far on into the future, with greater success than in the past, and that this new field of border-land neuroses will be occupied and developed into practical science.

#### THE MILAN CONGRESS.

The 14th Biennial Congress Against Alcohol, held at Milan recently, indicated greater interest than ever in this topic. Forty-four countries and thirty-eight governments sent official representatives, and altogether 1,000 delegates were present, representing every prominent anti-alcoholic society in the world.

Thirteen official delegates were credited to this country, and about twenty-five from societies. One of the great topics of the Congress was concerning the wine-making industries of Italy. A Government commission has shown that alcoholism is increasing very rapidly in that country and movements to suppress it will affect the grape industry seriously.

Several papers urged that grapes should not be made into wines, but should be turned into raisins and put to other uses that are not harmful to the people. Much difference of opinion prevailed, concerning the Gottenburg System, and several severe criticisms followed.

The papers by Americans were not noticeable, except as giving a history of the progress in this country.

Several English and French papers contain new matter concerning the degeneration following the use of alcohol. A number of very distinguished persons spoke very enthusiastically of prohibition and its possibilities. The American Delegation extended an invitation to the Congress to meet in America in 1915. This was accepted with enthusiasm. The alcoholic interest at Washington opposed the appropriation of money to pay the expenses of the delegates, and the resolution to ask the Government to invite the Congress here. Their opposition was so strong that the resolution was dropped, and the appropriation was cut down.

This was done in such a bad spirit as to react on the interests that sought to prevent it. This is another unmistakable sign of the

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march of events which cannot be checked, and all scientists who plead for an exact study of the subject feel additional encouragement in the dawn of a new era and the abolition of one of the greatest curses of the ages.

#### EARLY LECTURES ON INEBRIETY.

In the reminiscences of a doctor who died long ago, was found this very significant sentence: "When a medical student in 1806 I was very much impressed with Dr. Rush's lecture on Alcohol in which he described its pernicious effects and special dangers to medical men. This has kept me a temperance man all my life." It was evident from this that lectures were given by Dr. Rush at that early period to medical students. There may have been other lectures given in different colleges of the country on alcohol, accompanied by warnings against its possible dangers as a beverage, but there are no references to them.

Undoubtedly there were many physicians who recognized the danger from alcohol among the teachers of the medical colleges, but owing to prejudices, very little reference was made to it.

In 1862 Valentine Mott, the great surgeon of New York, devoted one of his addresses to alcohol and its baneful effects, condemning it and warning his students concerning its action. His biographer has noted the last few years of his life as a lecturer, he repeatedly warned students against the injury from its use.

Dr. Williard Parker seems to have been the next medical man of any great prominence who gave lectures on alcohol. These were of a popular character.

In the excitement which gathered about the establishment of an institution at Binghamton, there was considerable discussion in medical circles concerning alcohol, and altogether likely many of the views were repeated to students in different colleges.

The late Dr. Joseph Parrish gave two lectures in the University of Pennsylvania on alcohol and drug taking, in 1868. In the 70's Dr. N. S. Davis began to make alcohol a topic of a special lecture at the Rush Medical College, and continued this until his death, always giving one or more lectures every year to the senior class. This was in all probability the first continuous attempt to make the dangers of alcohol the subject of medical instruction.

Several authors wrote, urging that alcohol and inebriety be made a medical study for students, but no one seems to have dared to take up this subject, fearing the ridicule of their contemporaries and the stigmatization as cranks.

In 1890 Dr. Crothers gave a course of four lectures in the Vermont Medical University at Burlington, Vt. The next year he repeated this course in the Albany Medical College. In 1900 the New York School of Clinical Medicine created a chair of spirit and drug neuroses and appointed Dr. Crothers as teacher. For four years he gave courses of four or five lectures each year to small classes of medical men.

In 1912 The Boston College of Physicians and Surgeons created a distinct chair for the study of drink and drug neuroses and Dr. Crothers was appointed the professor. From that time to the present he has made inebriety and alcoholism the subject of eight or ten lectures each year.

This is the first medical study of this subject in a regular college in this country. During the last year new interest in this subject has sprung up. Several societies have organized lecture courses on the medical side of alcoholism and inebriety.

The University of California has announced a distinct course of ten lectures on the various aspects of alcohol and the liquor traffic. This is the beginning of what will be the most popular topics both in medical colleges and to lay audiences. Of course there will be the common mistake of putting forward teachers who have more zeal than knowledge in the discussion of these problems.

The time is ripe and the literature is ample for the scientific discussion of the alcoholic problem in all its phases, and the coming season should see a great number of distinct courses and studies on the scientific side of the alcoholic problem. It is a pleasure to note that the W. C. T. U. has shown great interest in this phase of the subject, having projected a number of courses of semi-scientific character on alcohol.

#### THE FIRST AND ONLY CHILDREN IN FAMILIES LIKELY TO BE INEBRIATES.

Dr. A. A. Brill, Chief of the Neurological Department in the Bronx Hospital and Assistant Lecturer on Psychiatry in Columbia University has recently made a most important contribution to the above subject.

In his work on Psychoanalysis in which he has most graphically translated Freud's epoch-making studies in this field, he has devoted a chapter to "The Only or Favorite Child in Adult Life."

In this he has shown that only one boy or girl in a family is very seriously injured by the extraordinary care and attention which they

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receive from their parents. As a result, a neurotic personality is developed, and an abnormal mentality, which breaks out later into hysteria, inebriety, or other psychoneuroses that destroys the future success of the child.

There are several physiological reasons for this: one is that the boy or girl brought up under the special care of the parents, and never allowed to see other children or play with them, becomes precocious and imitates his elders. He becomes associal, cares only for persons who are older than he is, takes on the airs of men and women, and enjoys their society, rather than that of children of his own age. He becomes confiding, lacks independence and skill which the average boy or girl acquires by association with their equals. He is positive, assertive, and yet literally dependent and credulous, without strength to act from his own initiative.

Again, children are spoiled by their parents who coddle them, gratify all their whims, and never punish or oppose them. Undivided attention and constant watchfulness produce abnormal love and egoism on the part of the children. They become rulers and dominate their parents in every way. Later they are conceited, jealous and envious, and are subject to every influence from without and unable to discern the proper course of conduct.

Dr. Brill in a study of 400 persons of this kind, of which 172 were men and 228 were women, found that 38 per cent. became abnormal, some of them developing the grossest kind of perversions. Eighteen per cent. suffered from various types of insanity. The others developed all sorts of irregularities, many of them drank and became drug takers. Others suffered from phobias and lived abnormal lives, and were failures in business and were degenerates in a very large degree.

Dr. Brill's experience is amply confirmed in the study of drink and drug neurotics. The only son of parents, who has been brought up as an idol and raised to the throne of a home-despot in which he controls parents and surroundings at his will is almost certain to find relief in spirits and drugs from the shocks and disappointments when he comes in conflict with the realities of life.

The petted and too-much loved child and the child who is guarded with extraordinary care is a weakling when thrown on his own resources. If he has wealth, the club furnishes a social home and spirits assuages his disappointment, and this increases until finally he becomes a chronic inebriate. If his fortune holds out he may live a few years in a kind of a dreamland of stupor and increasing debility, but if his money fails he sinks to the lowest levels and dies in a hospital or alms house.

The parents who give extraordinary attention to developing the moral qualities of the child, never allowing him or her to come in contact with anybody who is less favored, are almost certain if they live, to see the child develop into sexual abnormality and perversions of the worst character. They figure in divorce trials and are prominent in circles of dissolute men and women, and seem to have no power of reasoning or control. This, according to Freud, would be traceable to suppression of sexual impulses and perverse conceptions of love and adoration which breaks out in later life into all sorts of abnormalities.

The extraordinary care that parents give to develop a sentiment of total abstinence in an only child and educate him to realize the horrors of drink, very frequently reacts in an incorrigible inebriate or alcoholic. Numerous examples of this kind are traceable in families where the parents are abstainers, but somewhere back in the history there is a drinking ancestor, and the strain of his defect is likely to appear again.

Thus a noted preacher who was an only child was brought up with the most extraordinary care and attention, until he went to college. During this time one of his parents died and the other became incapacitated, and he was forced to battle with the surroundings without any previous training. He declared later: "Notwithstanding my extraordinary temperance education, I drank to stupor, then realized that there was a demon within me, and the desire for the taste and effects of alcohol was that demon, and I have fought it ever since. Today when administering the sacrament, I dared not partake of the wine, and became sick from the smell of it." He is a man of strong impulses, and declares that if he had been brought up as other children and been taught self-restraint in early life his career would have been a greater success.

In a grouping of the histories of a number of chronic inebriates one is surprised to find such a large proportion of them the only children, and to have received extraordinary care and attention in early life. The idolatry of the mother centered about her little boy or girl and her intense anxiety to protect them from every possible storm and strain, is the worst possible thing for the future of the child.

The mistaken notion of parents in having the children develop an equality of social and other relations, to themselves, is fatal in later life. The child loses reverence and respect, and develops exaggerated conceptions of his own condition, and afterwards, when thrown out into the world and buffeted by surroundings and associates, is unable to adjust himself.

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Children should be brought up with children and should acquire experience of disappointment, failure, and losses, to prepare them for the larger field. The only sons or daughters may be developed like hot-house plants, in continued sunshine and moisture, and protection from the north wind's blasts, but their future is very uncertain.

Another fact appears very often in the families of the wealthy, where an only child shares with his parents wines at the table. In some way the anesthesia of spirits added to the abnormality of over-training and over-care and attention, ends in inebriety or alcoholism.

The first children of such parents are usually failures. If there should be an exception, it would be a novelty in the ordinary history.

Dr. Brill states that there are many classical examples of the failures of the first and only children. Many of these children were forced to go out into the world, and became radically changed. Others retained paranoiac conceptions and obsessions, which marred all their later life.

He concludes his very interesting chapter as follows:—

"The only child is a morbid product of our present social economic system. He is usually the offspring of wealthy parents, who having been brought up in luxury, are anxious that their children have the same fate. By their extraordinary attention and love, the child is over-developed and unfitted for the battle. His normal manhood is perverted, and he becomes a neurotic and a weakling."

To this we will add that the single child in any family is in danger of surroundings, and if both parents concentrate their energies to develop his mind or body, outside of the usual lines, he will be a candidate for an inebriate or insane asylum. At all events, they will develop characteristics that will destroy his capacity to adjust himself to the surroundings and break up his point of view and ambitions for later life.

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#### MENTAL CONDITION OF INEBRIATES BEFORE DEATH.

All inebriates and alcoholics are more or less anesthetized before death. Sensation and reason are lowered; there may be a flash of intelligence and appreciation of the surroundings, but it is of short duration. Deliriums and delusions are common, sometimes concealed, at other times apparent. The brain is disorganized. Its circulation is impeded by toxic conditions, and anemias, and congestions are present.

Deliriums centered on demons and repellent objects associated with despair often noted in delirium tremens has been the subject of

sermons, exhortations and appeals by the laity. Death bed scenes of inebriates have literally no significance, other than that of the physical disorganization of the brain at the time.

In pneumonia, a very common condition following excesses of spirits and drugs, there is often a startling consciousness of the situation, but only momentary. The same in Bright's disease. In consumption there is delusional hopefulness. In a certain number of cases there is remorse and despair with suicidal impressions which frequently deepen into coma and death.

Whether the remorse and depression following the use of spirits is more than a lowered and deranged vital force, pressing upon all parts of the body, is unknown.

Thoughts, opinions and expressions should have no significance at this time. Instances are numerous where persons suddenly realize an on-coming dissolution and show a flash of intelligence in brief directions and counsels to the living; but this is so uncertain and vague as to be of no importance.

Occasionally a drug taker will show a spasmodic condition just before death in which some frenzy and morbid impulse will possess the mind. This is often to kill his family and children and have them all go with him to the other world. Where an opportunity occurs and the acts are committed, the brain frenzy disappears in the consciousness of the horrible act he has committed, and he either destroys himself or shows an intense desire to live.

The ordinary consciousness of the surroundings and situation is generally obliterated, and the dominant thought is peace and comfort for himself.

This develops into suicide and the thought that there is no hope for anything better, and that he should hurry on the end at once. These morbid impulses may be very intense at times, and if the opportunity occurs, the patient is very likely to destroy himself.

The remorse from an acute attack of alcoholic excess is simply physical and psychical depression which is easily overcome, and the spasmodic condition and sub-acute delirium following the sudden withdrawal of spirits, is a distinct physical condition, which is amenable to treatment.

There is no reason to believe that the mind of consciousness awakens at the last moment and displays a degree of vigor and clearness not noticed before, although this may happen apparently.

Death-bed scenes of inebriates and alcoholics have been the theme of a number of writers, but really have no meaning except as indications of local and general degenerations.

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The consciousness, of course, is obliterated beyond the point of recall, and the sub-conscious may show some signs of its presence, but that is an uncertain matter.

The statement that a man who drinks for a period of years is literally dead has a physical significance and accuracy that is astonishing. No mental work or display of reason or judgment deserves any consideration from an anesthetized brain and organism. Like an old man, there is a decline and dementia, and a general failure of both mind and body, long before the final dissolution comes on.

### JOHN BARLEYCORN.

Uncle Tom's Cabin crystallized public attention about the evil of slavery, and not only startled the public, but educated them along certain lines that had never been reached before. This was evident from the fact that over 2,000,000 copies were sold.

Helper's *Impending Crisis*, published in the sixties, made a profound impression from its startling statistical array of figures, and these two books brought on the civil war, or at least lighted the match that started the revolution.

During the last few years, many authors have tried to write books on alcohol and opium that would rouse a new interest and provoke a revolution of public sentiment.

*John Barleycorn* is a book of this class. The author attempts to portray the evils from alcohol in the form of an autobiography, in which his own personal experience is made prominent. While he has grouped a great many startling facts and placed the whole subject on a higher plane, he has committed an irreparable blunder in giving his own experience and defending the use of spirits in his personal life.

Acute readers will doubt the mental integrity of an author who boasts of his experience and continues to think that alcohol is a necessity in his life. *John Barleycorn* is one of the most interesting books from a psychological point of view that has appeared in a long time. There is a reflection of the author's peculiar mentality and foggy reasoning, which suggests alcohol and its effects.

Evidently the author is a word painter of more than average skill. It is a very interesting query, what Jack London might have accomplished if he had been an abstainer. The work that he has done, with the fearful handicap of alcohol is remarkable, and what he might attain in the future as a total abstainer is equally interesting to think about.

It is doubtful if *John Barleycorn* will have very much influence in helping on the great alcoholic revolution, but it is clearly evident

that the author might have made John Barleycorn a great power in the literary world, as well as in reform circles. As an autobiography, it will concentrate much attention on other works of the author, and will open a fine field for the pessimistic critic, looking for faults.

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#### DISEASES OF CRIMINALITY.

Dr. Marshall of Rutland, Vermont, recently read a very interesting paper with the above title. He affirmed that however one might differ, there were distinct physical, moral and intellectual characteristics which marked the criminal as diseased, and that the disease of criminality was a reality in a much larger sense than was understood. He brought out very clearly the fact from numerous authorities that criminals of all ages were to a large degree inferiors in physical, moral and mental development.

From various causes, there was retarded brain growth, and feebleness that indicated a distinct class, with bad heredity and weakened mental and moral equilibrium, alcohol was a pronounced exciting cause for still farther degenerations.

He quoted Hale as saying, "Drunkenness and prostitution are not only crimes in themselves, but are a prolific source of three-fourths of the burden of crime borne by society." That the criminal of all grades can be restored and practically made self-supporting and useful citizens is the judgment of a great many authorities, whose experience has sustained their assertions.

He referred to the astonishing fact that nearly 60 per cent. of all criminals were foreign born, indicating how essential emigration laws were to prevent the reception of these defectives. Authorities show that 84 per cent. of all crimes can be traced to alcohol, directly and indirectly. This, he affirmed, was the most positive reason why the medical profession should become active in the study of the alcoholic problem. He declared that drunkenness should be recognized as disease, and when drunkards are convicted of crime should be given a sentence of outdoor service and treated as sick and diseased and be required to work and pay for the support of themselves and family.

He affirmed that the degenerates and weaklings should not be allowed to reproduce their kind, and burden the community with weaker degenerates. Of the conclusions he affirmed that 70 per cent. of criminals are so by instinct or inheritance, possessing physical and moral defects; that many children become criminals from lack of edu-

cation, training and home influence; that alcohol and narcotics are allies in producing and increasing criminality. The legal treatment is a farce and the present methods of indiscriminate reproduction from descendants of this class, is a stupid blunder.

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#### ACCURACY OF FACTS RELATING TO INEBRIETY.

Every observer who records the facts and attempts to ascertain their meaning, soon realizes wide variations and apparently conflicting laws which are not in harmony and evidently require a more exact study from a wider point of view. The dogmatists and specific curers, the statistical students and the systematists who would regulate everything according to certain data which they claim to possess, are confronted with inconsistencies and theories that are impossible of verification and unrecognizable by common observation, and at least are not in harmony with opinions of others. All such persons should be prepared to meet the charge of want of intelligence or candor.

The physician who from a grouping and study of a definite number of cases, and the clergyman, who from a vague statistical study pronounces authoritatively what inebriety is, or is not, and the best methods of treatment, will be open to the same charge and have to abandon his theories as the subject becomes better known. Psychiatrists, and morphologists, systologists and bacteriologists who debate the questions of alcohol and inebriety, each from his own standpoint in an assertive way are not adding much to the evolution of the topic.

The moralists and sociologists are also involved in confusional divergence of explanatory theories, seldom widen the horizon or indicate any real facts that add to actual knowledge of the subject.

The facts of the causes and growth of inebriety and alcoholism go farther back and involve a great variety of studies, which for some time to come must be more or less confusional, but through it all there is a clear foreshadowing of the exact degenerations and the laws which control them, which are preventable and curable beyond any present conceptions.

## Original Papers

### DEGENERATION COMMON TO ALCOHOLISM AND INEBRIETY.\*

T. D. Crothers, M. D., Superintendent, Walnut Lodge Hospital.  
Hartford, Conn.

A few years ago, any attempt to present the scientific study of the degenerations common to alcoholics and inebriates, would have been regarded as empirical. Forty years ago, the first papers I read on the disease of inebriety before medical societies were tolerated, but met with a silent contempt and skepticism. Most of the profession from the leaders down, considered all writings of this character extravagant, foolish, and unscientific.

No one seemed to regard spirit and drug addictions as neuroses or diseases, but on the contrary, as mere lapses and weaknesses of mind and body, which required clerical and other than medical help. The fact that from Hippocrates down many eminent men had written and described the drink neuroses as a disease and urged its study and physical treatment was practically unknown.

Scientific studies and clinical observations brought striking confirmation of the disease theory and indicated that the phenomena of the drink and drug neuroses could not be explained from any other point of view.

Modern laboratory researches of the effects of alcohol on the cell and tissue brought out a wealth of evidence concerning the degenerations and erosive action of this drug, and yet physicians showed timidity and hesitation in the presentation of such facts, because of their conflict with the theories and prejudices of the past.

Why the disease of inebriety has not received the same consideration and study as epidemics and other widespread maladies, and why we should not regard it with the same scientific scrutiny as any other phenomena of disease is unexplainable.

The only possible reason is that alcohol as a beverage and as a drug is still invested with traditions, superstitions and theories, also with commercial interests that center about its manufacture and sale. These are practically prohibitive to critical inquiry and revolutionary studies.

\* Read at a meeting of Alienists and Neurologists held under the auspices of the Chicago Medical Society, June 23-25, 1913.



The object of this paper is to group and compare many of the general facts that are now recognized as outlines of a new territory of medical researches and practice.

The alcoholic and the inebriate are two distinct types of neurotics. The inebriate is a psychoneurotic who drinks at intervals and has distinct free periods of total abstinence during which he appears healthy and normal and acts sanely. The return of the drink paroxysm is marked by complex manias, delirium, dementias and melancholias. The drink attack may come on after regular or irregular intervals, and resembles epilepsy in its sudden, convulsive manifestations and terminations.

The alcoholic is a continuous drinker of wine, beer, spirits, and other forms of alcohol, as luxuries, beverages or medicines, in small quantities daily. He is literally a toxemic from poisons introduced into the body from without and poisons formed by chemical combination within, producing most complex disturbances and degenerations.

The early symptoms are always obscure and often limited to an exalted ego in which the person revels in the thought of his superior ability and conviction that spirits have no injurious effects and that his will power is amply able to control its use.

After a time disturbances of nutrition and circulation appear, vitality is lowered, and efficiency diminished, then comes rheumatism, neuritis, and disturbances of the heart, all of which are attributed to over-work, nerve exhaustion and other causes.

Kraepelin of Heidelberg some years ago made an exhaustive study of the effects of alcohol in small doses on healthy persons. These studies gave the first distinct data and explanation of the obscure early symptoms noted in alcoholics. He found that from one to two drams of alcohol in a healthy person lowered the sensory activity to a measurable degree and that alcohol was never a stimulant, but always an anesthetic, depressant, and cumulative in its action. Other studies in this country and Europe have not only confirmed this but brought out a wealth of facts opposed to all the teachings of the past.

Kraepelin also showed the effects of alcohol on sight, diminishing its capacity as well as obscuring the color sense, also on hearing, and proved that it was lessened; that taste, touch and smell were all more or less impaired. Impressions on the brain through the senses were imperfect, and could not be correlated because of the impaired and weakened functions.

Clinical observations on patients who come to hospitals and

sanatoria show diminished sensory, motor and mental activity that can be measured and stated in exact terms. This condition is practically a palsy, which increases with the continuous use of spirits. The conclusion was that alcohol, even in small doses, was an anesthetic, either for a longer or shorter period. Some illustrations bring out this fact.

A noted astronomer declared that every time he took a glass of wine or beer his work for a few hours after was full of errors, and had to be repeated. He had to give up banquets and dinners at which wine was served, and announced that he had found from personal experience that all use of spirits was injurious.

In one of the large observatories in this country, there is a specific rule that assistants and observers must abstain from spirits, coffee, tea and tobacco. This is a recognition of the action of alcohol and its injurious effects on all work requiring accuracy of the senses and reason.

In the musical world Sousa's band and other orchestras illustrate this same fact in their experience. No member is permitted to drink spirits or even wine or beer, and is required to abstain from tobacco and be abstemious in the use of coffee and tea. The reason given is that these drugs impair hearing and the accuracy of the sense of harmony and melody, as well as lower the muscular control of the fingers and lips.

Familiar examples are becoming more and more prominent in the management of railroads, and the increasing insistency of all officials that operators in the train service be total abstainers. Thus everywhere in practical life the anesthesia of alcohol is recognized and becomes more and more apparent in the mistakes and errors that are traceable to its use. Nutrient degenerations constitute a more or less prominent system in alcoholics.

Alcohol as a dehydrator interferes with protoplasm, destroys its integrity, and deranges the circulation. Vasomotor palsies noted in the face are common. Derangements of the kidneys and digestion with diarrhea, constipation, fermentations, accumulations of gas are also common. With this there is distended stomach, weakened heart's action, high tensioned arteries, which can be noted in the early stages. All these symptoms steadily increase and are marked by low vitality, nervousness and symptoms of fatigue that are unusual. Explanations of over-work, and neurasthenia are given. Then comes bacterial invasions with local inflammations, and traumatism which make a profound impression on the body. Recovery from wounds is slow, and so-called neuralgic pains with great debility follow. At

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this stage drug taking is very likely to develop, both directly and indirectly from thoughtless prescriptions of the physician. In reality, it is toxemias within the body, increased by the toxic poisons from without that become active and predisposing causes of profound degenerations, both local and general.

The inebriate presents many of the same symptoms, only they are intensified and develop into a convulsive obsession for spirits, up to the point of stupor. This morbid impulse to secure narcotic effects is peculiar to alcohol and some drugs. After a time it dies away, then various local inflammations appear, such as gastritis, local irritations of the kidneys marked by excretions of albumin and salts, heart feebleness and muscular fatigue. These symptoms pass away, and a period of abstinence follows, in which there seems to be a full return to previous health and vigor. Then all unexpectedly some complex symptoms appear, which are followed by another drink paroxysm.

Sometimes this period is prolonged for several days and weeks, in which the person drinks to stupor every day, then suddenly the end comes, and with it melancholia, remorse, and profound conviction that he will never drink again. Often local inflammations begin and run a mild course. In this there is distinct physical and mental degeneration. The reason is faulty in some ways, and clear in others. Physical work is done automatically and with a returning vigor many symptoms disappear or are suppressed, so as not to attract any attention.

The drink convulsion is most complex and confusing, noted by exhaustion and mental derangement. The free interval may not exhibit any of these symptoms. The person may do good work along accustomed lines. Many persons realize during this free interval, signs of debility and exhaustion, others do not, but claim to be perfectly well, and show a paretic exaltation and confidence in their perfect health that is suspicious.

The inebriate is potentially a maniac of the epileptoid class, and the paroxysms, while due to a great variety of unknown causes, are very largely influenced by toxemias and faults that are preventable. The drink paroxysms are often followed by most serious diseases of the lungs, kidneys, liver and heart. Consumption and pneumonia are more or less common in inebriates. When the drink craze subsides pneumonia develops and is literally a pneumoparesis and paralysis of the branches of the pneumogastric nerves.

Consumption and inebriety are very closely related. The subsidence of one is followed by the development of the other. In the alcoholic the continuous use of spirits favors the erosion of the lung

tissue and diminishes the protective power of the phagocytes. The breaking down of the lungs in an alcoholic is always fatal. It is not so in the inebriate.

The convulsive use of spirits to the point of stupor for a time has some deterrent effect. When this stops, a fresh onset of the disease follows. There are a great many curious facts not yet studied, concerning the relation of inebriety and tuberculosis. In my book on "A Clinical Treatise on Inebriety," some of these facts are described.

Cirrhosis of the arteries and liver is another degeneration closely allied and associated with inebriety. During and after the paroxysm they are very prominent, but later they diminish in a large measure. There is a great wealth of facts along these lines that have not yet been studied.

The inebriate not infrequently develops paranoiac symptoms during the free interval. He displays fears and phobias; consults physicians, takes drugs and furnishes remarkable examples of recoveries supposed to be due to certain particular remedies.

It is at this time that medical men fall into many errors in both diagnosis and treatment. Not infrequently a young man will discover a new form of brain and nervous disease, and give some very exact studies, which he asserts are new to the literature. Almost every year something of this kind appears. Enthusiastic, credulous men will make confirmatory studies, but in the course of time they soon pass away.

Critical inquiry will show that many of these marvelous instances occur in inebriates, that the symptoms noted were only seen in the free interval and later the drink paroxysm and other symptoms overshadowed the first description, hence they disappeared.

Delirium tremens is not very common in inebriates, and when it occurs, it is so complicated with manias and delusions as to often be mistaken. In the alcoholic, delirium tremens is quite common. This is of a low degenerative type, with partial recoveries, but continuous degeneration.

The alcoholic may have stages of delirium, called tremens many times, and apparently recover. In the treatment most disastrous results have followed, particularly in inebriates. Here the deliriums and delusions are so prominent, that the thoughtless physician gives all his attention to producing sleep. The theory that if this can be accomplished a subsidence of the acute symptoms will follow has resulted in high mortality. Different forms of opium in such cases are particularly dangerous in depressing the heart below the point of recovery.

Hyoscine seems to perpetuate delirium and derangement and fix it in some unknown way. Many cases are noted where hyoscine was given, causing temporary sleep, but leaving the brain clouded for months and years afterwards.

Other cases were noted where opium was given freely, and recovery followed and an addiction to opium developed. Delirium tremens in both the alcoholic and the inebriate marks a stage of degeneration from which very serious troubles, both mental and physical begin. The inebriate may develop into an alcoholic and the former free intervals be obliterated, but an early dissolution and most pronounced disease is certain to follow.

The alcoholic sometimes becomes an inebriate, and there is a suspicious after history of such a person that calls for the most careful study. Most complex forms of mental and nervous diseases always gather about persons of this class, and the exact diagnosis is impossible, except in a very general way.

Cerebral hemorrhage is a common termination in such persons. Traumatism both physical and psychical assume great importance, and usually end fatally. A very important fact that should not be overlooked, one that has a great influence on the after life, is the early use of spirits before and during the adolescent period. Persons who begin to drink about this time are much more seriously affected than those who begin later, and this fact has a very pronounced influence in the prognosis. Heredity is a general factor, present in a very large number of persons. Notwithstanding the denials, statistical studies furnish unmistakable evidence that the largest number of inebriates and alcoholics have an ancestral history of wine and beer drinking, particularly at the table.

Some of these patients continue to use spirits in small quantities up to middle life, then break out in the most complex neuroses and psychoses terminating fatally. Others develop some form of disease earlier and become invalids or hospital patients.

Every exact clinical study brings out this fact that the use of alcohol for any purpose and for any length of time, becomes an active and contributing cause for degenerative diseases of a great variety. Of course, there are great differences in susceptibility. A sturdy German family may have beer on the table from infancy up and in early or middle life, but the degenerations which follow may not be very prominent. There can be no question that vitality is diminished, mortality greater and susceptibility to disease marked. In an American family, where wine is given daily to the children, disease and mor-

tality are very sharply defined, and in early and middle life they are practically invalids of an incurable class.

The stupid error still prevails that the toxic action of alcohol is a transient condition and leaves no impression that is injurious on the organism, also that the continuous use of small quantities of spirits in no way impairs the health and normal activities of the body and mind. This is flatly contradicted by laboratory and clinical studies. Persons who have drunk to great excess, meaning that they have become stupid, delirious and otherwise intoxicated, then recover and assert with great positiveness that they are perfectly well, and have in no way been injured by it, are practically hypnotizing themselves with conclusions that cannot be verified.

Physical and psychical studies reveal shadows and defects both of the mentality and senses that are not always clear to themselves. Such persons have lost the fine appreciation of their relations to others, of their own conceptions and pride of character for truthfulness and honesty. If they continue to drink at long intervals, these shadows become more prominent. There is credulity, skepticism and degrees of faulty judgment. If a brain worker, his product is inferior, if a muscle worker, he lacks much of his former efficiency.

A noted judge who at long intervals drinks at banquets to a marked degree, was found afterwards to be duller and harsher in his judgments and decisions. They were over-ruled. His former high standard of accuracy and clearness had dropped down.

A physician who occasionally drinks to excess is becoming more and more careless of his diagnosis and treatment; he is less politic in his relations to his patients. His appearance is lacking in its former neatness and care. A business man who drinks at intervals shows faults in his judgment; he is more credulous or skeptical, less cool and collected, and complains of conditions that did not disturb him before. These are all facts which a close scrutiny will reveal.

The alcoholic particularly shows marks of decline both physical and mental. He may be able to keep up his work, but there are defects which are called weaknesses. He may have sudden phobias for wealth by any sort of method or political preferment, and want to lead in society and church, and show an ambition that is reckless of results. The inebriate may exhibit equally strange variations and paranoiac notions and changing conceptions of politics, religion, science and business. Frequently the extremists and radicals of new movements are inebriates whose attacks are concealed and not considered prominent by their friends.

In the commercial world these degenerations are recognized.

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Thus the mercantile agencies rate men low who drink continuously or at intervals. This is the result of experience, showing instability of character, conduct and control, and financial weakness that is growing. The bonding companies do the same thing in their refusals to take risks on inebriates or alcoholics. In all this there is an expression of experience, reduced to monetary values and without any sentiment or theory.

In institutions for the care of inebriates the same fact appears in many ways. On admission every patient presents palsies, defects and degenerations which are unexplainable except as due to the anesthesia of spirits.

The persons who are treated are of all others the most skeptical of the damage and injury which they are suffering from. They possess a delusive egoism that they are very little changed and can recover by appeals to the will. The inebriate, during the free interval, is often more clear as to his real condition but lacks control, is unstable and subject to suggestions, both physical and mental. The alcoholic is more profoundly wrecked in mind and body, but this is covered up with the same egoism and delusion.

The quack theories of producing an aversion to alcohol in a brief time and calling this a cure has done irreparable damage, not only to patients, but to the unthinking public. The inebriate will give up the use of alcohol on the subsidence of the paroxysm naturally, but this is not restoration. Any drugs given at this time, or any sort of treatment is often credited for results which they did not produce, but on the contrary protracted and hindered the natural progress of the case towards restoration. The alcoholic, after profound elimination through the skin and bowels, finds relief in drugs of a narcotic character, but this is limited.

Sanatorium treatment, in which every person receives the same medicine at intervals and are treated alike, is empiric and very likely to be followed by results more serious than the original disease. The present empirical treatment has done a great deal to develop an army of incurables which became criminals, paupers and dements. It has also done a great deal to educate the public as to the possibility of physical help and restoration. It has revealed the fact, so long doubted, that both the alcoholic and inebriate are curable in the best sense of that word.

Everywhere it is apparent that the number of these drink and drug neurotics is increasing. Physicians are unable to meet the demand for help, hence hospital clinics and measures and means of every

kind and description are sought and patronized with the hope of securing some results that will be practical.

In my experience of over forty years, I have had the satisfaction of noting a large number of persons permanently restored from physical treatment in sanatorium, also from home and office care. No percentage of recoveries can be given with any reasonable accuracy at present, but personal studies of individuals show that restoration and recovery ought to be the rule and not the exception and farther on, when these neuroses are recognized, they will be preventable and curable the same as any other diseases.

Finally the degenerations preceding and following the alcoholic and inebriate are not incidental or accidental or matters of chance, but follow a uniform, positive growth and development. They begin at a certain point and go in a regular order of progression, which can be studied and understood. No treatment limited to a few days or weeks gives any promise of permanency. Restoration may follow from the subsidence of the peculiar prominent symptoms, but other causes are active, which must be neutralized and broken up before any results will follow.

There is a home and office treatment, which should precede sanatorium care, and not infrequently physicians can use means and measures here most effectively. There are possibilities of home treatment that we do not realize at present, and they are equal possibilities in sanatorium and hospital treatment of permanent restoration and cure, beyond any present conceptions. The stupid theories of vice, depravity and moral weakness as explanations of why men drink have prevented any recognition or study, until these theories were obviously absurd. The man who drinks wine at the table, or beer and spirits, or the man who drinks at intervals to intoxication are all moral defectives, or if not that, are well within the range of rational control and free will, hence have a medical significance. The prevalence of such theories has built up an enormous army of neurotics, and degenerate psychosis, who only come for help and treatment when they have reached terminal stages and are in the incurable classes.

We sit around and observe this army being recruited, developed and trained and grown to the neurotic stage where their disabilities are so evident as not to be mistaken. Then we make great efforts to use medical means, always reserving the theory that it was vice at the beginning.

A large class of inebriates and alcoholics are beyond the province of practical, remedial measures, yet notwithstanding this fact, there

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are degrees of curability and examples that are startling in the possibilities that they reveal.

We ought to recognize the gravity, not only of the neuroses and toxemias in the later stages, but these conditions at the beginning and the possible means of prevention and correction. No physician in general practice can fail to realize the increasing neuroses and degenerations which follow from the use of spirits, and no physician can fail to understand the actual condition both physical and mental which presents itself.

How to remedy it, how to advise, prescribe and plan means of restoration and cure is largely unknown, and yet every physician can do this and can find a field for practice with results as positive as from the treatment of any other disease.

Home and office treatment of this class will be a prominent feature of the practice of the future physician. I repeat the same plan and claims which I urged long ago, that this neglected army of degenerates should be recognized, studied and treated, above all theories and sentiments, and that they can be cured and restored to an extent not dreamed of at present.

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#### ALCOHOLISM AND TUBERCULOSIS.

A work on Alcoholism recently appeared in Bulgaria, and was awarded a prize by the Academy of Science. The author, Dr. G. Baeff, points to the close connection which he holds to exist between alcoholism and tuberculosis. He points to the very high mortality from that disease in Kasanlik, where he lives. This mortality among the Bulgarians is at its highest between the ages of 21 to 30 and again from 50 to 60. In the former period the mortality is due to a predisposition to the disease, in the latter to drunkenness. Amongst the Turks, children of from two to six years old die of tuberculosis owing to the ignorance of the parents and to infection. After 40 years of age tuberculosis is very rare, owing to the habits of temperance and abstinence from alcohol which prevail among the people and the employment in the fields. Among the gypsies, infant mortality from tuberculosis is extremely high, owing to ignorance, etc., just as among the Turks; later from the age of 40 tuberculosis is very rare, for the same reasons as those given for the Turks. Among the Jews, the death rate is quite normal because they are a civilized people, take good food, do not overwork, and take a sufficient amount of rest from labor.

—Alliance News.

### SOME SCIENTIFIC FACTS CONCERNING ALCOHOL.

By G. Frank Daniel, M. D., University of California.

Through many ages nature has been elaborating a substance which has come to effect human progress most profoundly. This substance we today call alcohol. Although the existence of alcohol was surmised almost four centuries before the Christian Era, yet practically twelve centuries intervened before its extraction, and ten centuries more elapsed before its nature and the biological significance of its origin was fully made out.

To appreciate the conditions confronting them, who attacked problems of the sort, in the infancy of science, we should look back to those ages in which natural phenomena called forth extravagant explanations, a day when apparatus and laboratories were unknown, and, above all, a time when the scientific momentum, which is ours, because they labored, was yet unborn. Under such conditions the work on alcohol was begun.

#### Alcohol Early Detected in Wine.

Two important observations were early made concerning wine. The first of these was that wine, unlike water, if thrown into the fire emits a flame. When questioned as to the cause of the phenomena, Aristotle answered that the flame was due to an exhalation contained in the wine. Later, Pliny related that the wine from Falernus Ager blazed up at the contact of a flame, a wine as Berthelot remarks, evidently rich in inflammable exhalation.

Some men of that period knew that sea water vaporized and condensed was drinkable, we might expect that it was but a step to the extraction of the inflammable exhalation. But a long step it proved to be; an attempt at condensation was in fact made at that time, with the result that wine upon evaporation became water.

It was not until the 4th century of the Christian Era that an adequate distilling apparatus was perfected, and this, although used in the distilling of various substances, seems not to have been employed for the production of alcohol. Not until the writings of Marcus Graecus, in fact (12th or 13th century) do we get unmistakable evidence of the distillation of alcohol—the distillate obtained being called "aqua ardens."

An explicit account of the process in distillation and a description of the characteristics of the alcohol thus obtained, occur in a Latin manuscript published about 1428—but which, according to Berthelot, contained older excerpts. In this the preparation of alcohol is described as follows:

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Take good old wine, any color, distill it over a slow fire (in a still and an alambic closely joined) the product of distillation is called "aqua ardens."

To "aqua ardens" are ascribed the following characteristics, which we today associate with alcohol. Moisten a cloth in it and light it. It will produce a great flame; when it has gone out, the cloth will remain intact. If you put your finger in this aqua (ardens) and light it it will burn like a candle without causing injury. If you put a lighted candle in it, the candle will not be extinguished. Thus from the time of Aristotle to the period immediately following that of Marcus Graecus, there elapsed an interval of considerably more than a thousand years in which, through extended efforts, the exhalation of wine was eventually obtained. As time passed, methods were devised by which aqua ardens was procured in greater concentration. It should be stated, however, that the word "alcohol" as applying to present day alcohols was not used until the 16th century, and further that alcohol in the purity in which it is now obtained is a product of the centuries just past.

The second of the early discoveries made in the study of wine, was that of a stimulating effect on man. An interpretation of this effect in later years greatly influences the use of alcohol. Prominent in this interpretation stands the name of Arnaldo De Villaneuva. In his work entitled "The Conservation of Youth" (1309) after speaking of the delicacy of the nature of the spirit of wine, and enumerating the various maladies cured by it, he adds that the spirit of wine should be called "eau de vie," for it prolongs life.

From the time of Arnaldo De Villaneuva to the present there has been growing a counter belief in the minds of many that the prolongation of life is not one of the characteristics to be associated with "eau de vie." Indeed, some believe that "eau de vie" curtails rather than prolongs life, and some there are who go so far as to maintain that "eau de vie" should be called "eau de mort." But this is aside from the subject; it is of interest, however, to note that out of the opinion expressed by Arnaldo de Villaneuva, probably grew the prevailing belief in Europe, in the efficacy of the daily use of brandy, and to the latter may be attributed the custom of mint julep or so-called old age drink prevalent in parts of the south.

#### Alcohol Discovered in Other Substances Than Wine.

Man, seeking ways of producing alcohol from substances other than wine, early made the important observation that fermentation and the production of alcoholic liquids go hand in hand. This discov-

ery, as time passed, became common knowledge, with the result that fermented liquids from different sources came to be looked upon as characteristic national drinks,—thus in France wine from grapes, in Jamaica rum from cane, in Russia vodka from rye, in Japan saki from rice, in Germany beer from barley, and in America whiskey from Indian corn.

But some substances long used in the formation of alcohol, unlike the juice of grapes, are themselves unfermentable. Some of these we shall consider more in detail.

Common or cane sugar, although of itself incapable of undergoing alcoholic fermentation, by the action of a ferment invertase, takes up a molecule of water, splitting into glucose and fructose, both of which are fermentable. Thus cane sugar  $C_{12}H_{22}O_{11} \times H_2O$ , becomes  $C_6H_{12}O_6$  (glucose) and  $C_6H_{12}O_6$  (fructose). From the fermentation of glucose and fructose alcohol results.

The starch of cereal grains when converted into fermentable sugar likewise becomes an effective source for alcohol fermentation. It has long been known that a starch paste, to which malt or malt extract containing diastase has been added, becomes transformed into a sugar maltose. Now maltose itself, is not subject to alcoholic fermentation, and so it must be acted upon by another ferment, maltase. This converts the maltose into dextrose and glucose, the latter of which we have seen to be produced a case of cane sugar.

In 1837 Cahours employed potatoes as a source for alcoholic fermentation. The starch of potatoes is insoluble in cold water, but upon heating it in the presence of dilute sulphuric acid, the starch is converted into fermentable sugar. In this process in addition to the ethyl alcohol produced a considerable amount of one of the higher alcohols, amyl alcohol, was discovered.

Two years earlier than the discovery of amyl alcohol, another alcohol was obtained. This was produced, not by fermentation, but by the destructive distillation of wood, and was therefore called wood or methyl alcohol.

This alcohol is obtained by distilling the wood in iron retorts at a high temperature, at (about 500 degrees C). The vapor thus driven off when condensed are found to contain in addition to a large percentage of methyl or wood spirits, acetone, acetic acid, and so forth. Upon being freed from these foreign substances, methyl alcohol is obtained in purity.

#### Concentration and Purification of Alcohol.

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relatively large amount of water and in addition numerous foreign substances. To remove these was the task set for succeeding workers. It was found that a percentage of aqua ardens could be perceptibly raised if the alcohol collected could be redistilled. If the process of redistillation be repeated a number of times, a concentration approximating 90 to 95 per cent. was possible.

In the present day, commercial manufacturers of alcohol, the apparatus has been perfected that by a single distillation an equally high percentage is obtainable. By neither of these methods however, is alcohol rendered anhydrous, or free from water. But alcohol of a relatively high percentage placed in contact with a chemical, such as caustic lime of baryta having a strong affinity for water, and then redistilled may be rendered practically free from water.

The foreign substances present in the alcohol were found to be principally glycerine, succinic acid and higher alcohol, traces of several of the latter, such, for example, as propyl, butyl and amyl alcohol, being found to ethyl alcohol.

To separate amyl alcohol from ethyl it is necessary to employ a physical property which in the different alcohols is perceptibly different, that is, the boiling points. While ethyl boils at 78.4 degrees, propyl at 97 degrees, and butyl at 107 degrees, amyl does not reach the point of ebullition until it is elevated to a temperature of 132 degrees C.

It would therefore appear that the separation of amyl alcohol from ethyl would be easily affected by raising the temperature of the mixture to 78.4 C, and thus driving off the ethyl alcohol. This is in fact the method used, but it is found that while the first part of the distillate is largely ethyl, later amyl is often given off at a temperature far below its boiling point.

In a word, a single distillation is by no means sufficient to separate the two. By a process known as fractional distillation, it has been found (Roscoe and Schorlemmer) that when a temperature of 80 to 90 degrees C is employed, 88.1 per cent. of ethyl alcohol is distilled off, and that 11.9 per cent. of amyl also passes over. In the case when the temperature is raised from 131 degrees to 132 degrees C two per cent. of ethyl is still obtained and 99.8 per cent. of amyl.

Since the boiling points of propyl and butyl alcohol approximate more nearly than that of ethyl, it is practically impossible, even by repeated fractional distillation, to remove all traces of these.

The alcohols with a higher boiling point are also found to differ from ethyl alcohol in another respect, that is, in their chemical forms

or molecular weights. The molecular weights of ethyl alcohol taken as a standard is 46; that of propyl 60; that of butyl, 74; and that of amyl, 88. It is thus seen that in both molecular weight and boiling point, alcohols of fermentation fall into a regular series of ascending from ethyl to amyl. In addition to the above alcohols of fermentation is wood or mythl alcohol which reaches its boiling point at only 66 degrees C or 65 degrees C, and has a molecular weight of 32.

The molecular weight and boiling points found for the primary alcohol named may be briefly summarized as follows:

Alcohol	Molecular Weight	Boiling Point
Methyl . . . . .	32	66.0° C.
Ethyl . . . . .	46	78.4° C.
Propyl. . . . .	60	97.0° C.
Butyl . . . . .	74	117.0° C.
Amyl . . . . .	88	132.0° C.

#### The Biological Significance of Fermentation.

While the production of alcohol has long been associated in the minds of all peoples with the process of fermentation, yet the exact nature of the process was unknown until the significant work of Pasteur appeared. Pasteur in his work on fermentation, as in all his work, was unwilling to accept blindly an interpretation of the meaning of the process until he had examined in detail and elucidated step by step the actual occurrences taking place.

By taking the juice of the grape, he observed, as had often been observed before, that upon leaving it for a time at a warm temperature, bubbles of gas arose. This gas was evidently the result of a chemical process going on within the mixture.

But to Pasteur is due the credit of showing for the first time that within the mass of grape juice the thousands of living organisms (which Latour, Schwann and others had already seen) were busily engaged in the process of digesting a part of the sugar contained in the juice. Pasteur believes that these living organisms, by taking oxygen from the sugar, caused the splitting up of the sugar into two substances. One of these he had seen arising as bubbles of gas—carbon dioxide—the other remained in the mixture, gradually increasing in strength as more and more was produced. The latter substance Aristotle had spoken of as the exhalation of wine. Marcus Graecus de-

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nominated it aqua ardens. We call it alcohol. The organisms which thus produce alcohol are the yeasts, many kinds of which are now known.

The Pasteur fermentation was life without air. That is, the yeasts living in a liquid medium in order to secure sufficient oxygen procured it from the sugar, thus, as we have said, producing from the latter CO<sub>2</sub>, and alcohol. The production of alcohol hence resulted as a product or metabolism in the body of a living organism.

It has been more recently shown, however, that the active cause of fermentation is to be found, not in the yeast itself, but in a ferment (or enzyme) produced by the yeast cell. This ferment Buchner has succeeded in freeing from the cell, so that it is now possible to produce alcoholic fermentation without the presence of the living yeast.

But this discovery does not detract from the work of Pasteur, to whom is due the great credit of definitely showing the importance of living organisms, the yeasts, in the production of alcohol, since without the yeast cell the ferment would not be produced.

The nature of the experiments by which Pasteur demonstrated the importance of the yeast is of interest. In the first place he showed that grape juice filtered and kept from contact with the air is not subject to alcoholic fermentation. In the second place, he demonstrated that grape juice sterilized by heat is, if similarly protected, unfermentable. In the third place he showed that if the yeasts caught on the filter used in the first series of experiments be added to the sterile juice of the second series, fermentation ensued.

Pasteur was asked the origin of the yeasts which make the alcohol in wine. The question was answered by an experiment.

Taking the grapes and completely removing from them the fuzz or bloom, he extracted the juice free from contact with the air. No fermentation followed, consequently no alcohol resulted. From this it was learned that the yeast necessary for the production of the alcohol of wine live in nature in the air and are found in abundance on the outside of the grape. If the grapes be crushed the sweet juices serve as food for the yeast plants. These when well fed grow rapidly, and, by a simple process of budding, produce myriads of yeast plants. These, like their parents, give rise to ferments which break down the sugar into CO<sub>2</sub> and alcohol.

It was later found that although these yeasts may increase greatly in numbers, a strong percentage of alcohol is impossible in nature. This is due to the singular fact that when the strength of alcohol increases, perceptibly the organisms forming it are unable to

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thrive in their own product. Hence they increase more slowly. When a strength of 12 per cent. of alcohol is reached reproduction is manifestly checked and at 14 per cent. all cell activities cease.

To increase the strength and purity of the alcohol thus formed in nature, man, as we have seen, has resorted to the processes of distillation and rectification by which alcohols practically free from impurities may be obtained in concentration.

(Contributed and extracted from the "Popular Science Monthly," 1913.)

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In a recent paper in The London Lancet, on "Alcohol as a Factor in Disease" the author contends that there is a vice element in all these cases, which could be controlled by parental and educational training. He assumes that this is a new fact, and speaks with great positiveness. He is evidently a man of some learning, from the list of titles appended to his name, and as such his paper will probably be read and accepted by many persons. A half a century ago his views would have been very warmly endorsed, but today they sound like the far-off tones of a sadly belated thinker and writer. Such men will continue to repeat theories and traditions which they have received in their early life, but the world will go on just the same. Scientific studies are constantly revealing new fields of facts and a new generation of workers is pressing forward and occupying them. The opinions and theories of today are forgotten and replaced by wider conceptions of tomorrow.

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The editor of the Vindicator, one of the great prohibition papers of the country, makes the following scientific statement, that should be recognized by every writer:

"Arguments for the abolition of the liquor traffic are strong enough without any bolstering by misrepresentations of any sort. The subject is grave enough to call for accuracy of statements in every particular. The truth is strong enough, and will stand by itself, regardless of what is said to the contrary."

In propaganda work of this kind, the facts are numerous, and the conclusions are unmistakable without argument or elaboration. They stand for themselves. That they be accurate in every degree is all that is necessary.

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**MORPHINE IN GENERAL PRACTICE.**

By C. J. Douglas, M. D., Superintendent Douglas Sanatorium,  
Boston, Mass.

The prevention of disease is an important part of a physician's duty. Our work in prophylaxis forms one of the noble and brilliant chapters in modern medical achievement, and one of which every physician is justly proud. And yet, paradoxical as it may seem, there is one disease of the gravest character which medical men are not only failing to prevent, but are often doing much to spread and multiply.

I refer to morphinism. I do not, of course, mean to say that the medical profession as a whole has any part or lot in the spread of the morphine addiction. Most physicians are careful, intelligent and conscientious in the administration of morphine. But there are many individuals in the professions who, through carelessness or a failure to appreciate its dangers, are recklessly prescribing this drug, with the result that morphinism is often acquired, and their patients become helpless slaves to this addiction. While morphine has a legitimate place in our materia medica, and is a valuable remedy when properly prescribed, yet our best physicians are increasingly cautious in its use, and never employ it, except as a last resort.

It is humiliating to admit that the widespread prevalence of morphinism is largely due to too careless prescribing by physicians. These prescriptions are often made by well-meaning men, but they seem to forget or ignore the dangers and limitations of this drug.

**Reasons for Prescribing Morphine.**

There are several reasons why morphine is so often employed as a universal panacea, and is given to patients suffering from ailments of the most diverse character. Most diseases are accompanied by pain or some sort of distress, and morphine will more promptly and surely relieve pain than any other remedy. To thus overcome at once the most prominent and annoying symptom is highly gratifying to the patient and his friends. With the sympathetic family standing about and urging the doctor to "do something," it is a great temptation to exhibit a few doses of morphine, thus temporarily relieving the patient's distress and winning the applause of all concerned.

If it stopped here it would not be so bad, but often it does not. The physician knows that probably the pain will return as soon as the effect of the morphine has gone. He cannot visit the patient sev-

eral times a day, especially if he lives at a distance. He may therefore say, "Here are some morphine pills. Take one when you need it for pain."

This makes the patient at once a self-prescriber of morphine, and has given him a good start on the toboggan-slide of morphinism. After he has taken it daily for a sufficient length of time, he discovers that it is more essential to his comfort than it was at first, although the original disease may have disappeared. He finds that stopping the use of the drug produces great discomfort, and he also finds that another dose of morphine immediately relieves it. He may hope that after a few more doses, he will be able to stop it, but the more he takes the more he has to. And thus floundering in this quicksand he gets in deeper and deeper, until finally he realizes that he is hopelessly entangled, and that all possibility of self-help is out of the question.

### Victims in the Mire.

A respectable country practitioner sent me a patient with this note: "The bearer is a very nervous man and I have been obliged to give him some morphine. Now he objects to giving it up. What can you do for him?" I found it to be a well-developed case of morphinism caused by his family physician, as he admits in this ingenuous note. This is not the worst case I might cite, and the patient made a good recovery, but it fairly illustrates how morphinism is often produced. Such prescribing results from ignorance or thoughtlessness or indolence. Such a physician may become a chronic menace to his community. The indiscriminate prescriber of morphine should be prohibited from practicing medicine. It would seem to be almost justifiable to lock him up for the protection of the public.

Every physician should know that a patient cannot take morphine daily for any length of time without reaching a condition in which the abandonment of the drug will not only be "objected to," but will be impossible.

Every physician should know that morphine is not a proper remedy for ordinary "nervous" symptoms.

Every physician should know that morphine is not a good hypnotic.

There are other remedies less harmful and more effective for the purpose of promoting sleep. In ninety-nine cases of insomnia out of a hundred its use is unwarranted if not contraindicated.

Every physician should know that he cannot place morphine in the hands of a patient so that he may use it at will, without the gravest danger of producing a morphine addict.

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### Dope Fiend Physicians.

Another difficulty complicates the situation. Many physicians are themselves addicted to the morphine habit, and the results are they usually have great faith in the drug as a remedy for all ills—at least their prescriptions would indicate such faith. The personal equation often modifies prescriptions in a peculiar way.

Each physician is inclined to recommend his own habits. If he is a smoker he recommends smoke. If he is a vegetarian, he recommends vegetables. If he uses alcohol, to excess, the one thing, in his judgment, that most of his patients require is drink. If he uses morphine, you will find that drug in most of his prescriptions, and he will gradually build up a colony of morphine addicts among his patients. Morphine warps the judgment and consequently the opinion of a physician who uses it becomes less valuable in proportion to the length of the addiction and the amount of drug taken. It is not surprising, therefore, that their prescriptions are peculiar.

Recognizing morphine as a valuable remedy when properly employed, how can it be exhibited so as to avoid the danger of an addiction? I will make one suggestion which will go far toward accomplishing this result.

### How to Guard Against Trouble.

Dispense all morphine personally, never employing a written prescription, as it may be refilled, even if otherwise ordered. Never allow the patient to know that he is getting opium or any of its derivatives, giving all such preparations in a disguised form. The object is to prevent the patient from becoming a self-prescriber. This is equally important if the patient be a physician. No sick doctor should prescribe for anyone, and he is doubly disqualified for prescribing for himself. It is as dangerous for a physician to prescribe morphine for himself as for a layman to do so. The many cases of morphinism among medical men bear ample testimony to this fact.

### Tribute to the Profession.

It is more eminently true today than ever before that the medical profession is the guardian and protector of the public health. During recent years, physicians have made brilliant discoveries tending to prevent disease, and in some cases making it almost impossible for the disease to recur. By these discoveries they have so promoted general hygiene and sanitary living that they have added ten years to the average span of human life.

All this altruistic work on the part of physicians has resulted in reducing their own incomes. This was plainly inevitable. So markedly is this the case that there are five thousand fewer physicians in

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practice today in the United States than there were eight years ago.

What other profession has thus labored for the good of mankind, knowing that the success of its work meant the crippling of its own means of support? Others may give time and energy for the public good, when success will bring substantial rewards. But who, except physicians are expected to devote their talents and education to the impairment of their own revenue for the sake of the welfare of others?

Who but physicians cheerfully commit financial suicide in order to give physical health and length of days to their fellowmen?

With this noble record for our inspiration no physician should be willing to have it said that through carelessness or needless ignorance anyone has been injured by him. Let us hope that in the future physicians who find it necessary to administer morphine will do so with greater care, and will keep in mind the serious dangers and pronounced limitations of this habit-forming drug. For of all the drugs that enslave there is none mightier than this.

\*A paper read before the American Medical Society for the Study of Alcohol and other Narcotics, Washington, D. C., December 11, 1912.

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### OUR MEETING PLACE.

The Rittenhouse Hotel, at Philadelphia, Penna., where the 43d annual meeting of our Society will be held, deserves a mention as an exceptionally fine place. Its location, free from noise and dust, with all the appointments of a palatial home, commends it most heartily to our friends.

Our meeting held there a few years ago was very satisfactory to everyone, and the impression left on our minds was that this was an ideal gathering place for conferences on scientific subjects.

The favors we received, which have not been forgotten, placed us all under deep obligation to the managers. See "Ad." page III

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A murder was committed in a secluded spot on the banks of a river. A man passing on the highway in sight of the spot swore positively that he saw a man trying to wash the stains out of a bloody shirt at that time.

At the trial it was proven that this star witness had taken two glasses of spirits a short time before he started home, and that what he really saw was a tramp washing out a red flannel shirt. The murder had been committed at a different place, and the impression of the witness was from alcoholic confusion of both sight and reason.

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## Book Reviews

### THE MODERN TREATMENT OF NERVOUS AND MENTAL DISEASES, BY AMERICAN AND BRITISH AUTHORS.

Edited by William A. White, M. D., and S. M. Jelliffe, M. D.

Vol. II, Lea & Febiger, Publishers, Philadelphia, Pa., 1913.

The second volume of this great work is equally, if not more, practical, than the first. Seventeen different authors have presented a variety of topics in a more or less exhaustive way. The reader will be interested in Chapter XLV, where toxemias and dangerous trades are presented at some length, and the various methods of treatment are outlined.

Other chapters give suggestive studies that are far more valuable in the possibilities which they outline, than in the exact descriptions of methods of today.

Some of the authors have limited their studies to the literature of certain text-books and experience in special hospitals. Others are evidently not very familiar with the exact details of the treatment they describe.

On the whole, this volume is a very valuable resume of the practice of today, and will be welcomed very warmly by active physicians.

The publishers have, as usual, presented a very complete work, typographically, and it is clearly evident that the effort to group the best modern treatment of diseases of the mind and nervous system has been eminently successful, and this book will go down into the future as a distinct contribution to the literature of medicine.

### SAJOUR'S ANALYTIC CYCLOPEDIA OF PRACTICAL MEDICINE.

By Charles E. de M. Sajour, M. D., LL. D., and others.

Seventh Edition. Vol. III. F. A. Davis Co, Publishers,

Philadelphia, Pa., 1913.

In many respects this is the most valuable of the volumes of this remarkable set of works. Several topics are discussed in a very exhaustive way, that are particularly valuable to our readers. Thus, chloral hydrate, chloroform, cocaine, cocainomania, coffee, caffeine and other topics. Cannabis Indica is another exhaustively treated



article. Catalepsy and Narcolepsy, by Dr. Williams, and Cerebral Hemorrhage, by Dr. Browning, are very excellent groupings of facts of great value, from the conciseness in which they are stated and their accessibility and ease of reference. The reader is impressed with the fact that the distinguished author and editor has attained an encyclopediac ideal of arranging the facts, according to their value and interest, and has avoided the weakness of padding so commonly seen in other works, the editors of which have had less practical experience.

The book is a model of typographical perfection, and altogether we commend it as one of the best medical reference books that a physician can possibly have on his table.

#### MENDEL'S PRINCIPLES OF HEREDITY.

By W. Bateson, M. A., F. R. S. Fellow of St. John's College, Director of the John Ines Horticultural Institute, etc., etc.  
Cambridge and University Press, New York.

G. P. Putnam & Sons, 1913.

The recent studies in biology and psychology have brought into prominence the principles of heredity that were promoted 10 years ago by Mendel. The author was a prelate in a monastery, and made extensive researches in the growth of peas, changing their colors and forms, also in the breeding of pigeons. These studies seem to indicate definite laws of heredity. His papers were not published, only some conclusions appeared in print, and these were contradicted.

Now, after a long period, his researches have come into prominence, and have been found to represent exact conditions, and to have been a real discovery of the greatest practical importance. The editor, Dr. Bateson, combines in this book Mendel's studies and conclusions, to which he has added his own and other studies, which give prominence to what practically is a new discovery, and shows that it is confirmed by a great variety of experiences among stock breeders, and particularly among studies of the human family that have scarcely begun yet. We publish in another part of this Journal a very good summary of some of the leading facts of Mendel's theories.

This will show its practical value. The book is a volume of over 400 pages and contains an immense amount of suggestive facts which are in outline yet. To the student of drink and drug neuroses this is a very helpful volume and will enable him to add immensely to the subject by studies of persons who come under his care. We commend it most heartily. The price of the work is \$3.50.

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The HIBBERT JOURNAL for July brings the usual supply of intellectual riches. Eleven original articles and a dozen or more critical surveys of books and topics are very stimulating to every reader. In this issue a number of American writers appear with very vigorous articles. The popularity of this journal is the most helpful sign of the growth of intellectual readers and thinkers in America.

Many of the articles are revolutionary, according to the popular opinions of the day, but all are written in such a judicial, broad spirit, that the reader is charmed rather than startled.

Sherman, French & Co. of Boston are the publishers.

The POPULAR SCIENCE MONTHLY shows a very marked evolutionary tendency in the increasing number of papers concerning the great topics of the day. Many of them are very exhaustive studies of the latest conclusions of authorities. Several of them are on psychomedical questions which are evidently very highly appreciated.

Write to the Science Press, Garrison, N. Y., for a copy.

The AMERICAN ISSUE is the organ of the Anti-Saloon League and is a vigorous, aggressive journal, well edited and distinctly partisan, and while sharp and decisive is broad and general in its treatment of the great problem. It has a very large subscription list and appeals to its readers in the most enthusiastic way.

The publication office is at Westerville, Ohio.

The VINDICATOR is a great prohibition weekly. It has inherited the prestige of several very prominent papers in the years gone by, and is supposed to be a modern descendant of a long line of very wise writers and leaders. In many respects it sustains this reputation. Its editor is a strong, virile writer, who is positive and emphatic in his statements and has a long list of very ardent admirers. The paper is unique and distinct in many ways, and ranks among the really great journals in this field.

It is published at Franklin, Penna.

There are many other journals in this field with both a local and general reputation. They are all doing great work and making sacrifices to do it, which is a part of pioneer labor. The Union Signal, the organ of the W. C. T. U., has a national reputation confined to its society, and is really one of the strongest educational journals promoting the principles of the W. C. T. U. If the research worker and

reader would keep in touch with the great undercurrents that are gathering in the homes, towns, cities and states of this country, he should read some of these journals. They speak of a movement that is irresistible in the slow onward march. They speak of the thousands of men and women who are slowly being trained to know the significance of the alcoholic problem and its rank as a preventable disease, which a little farther on will be recognized. The good tidings which each of these papers bring are taking root everywhere. Today the stone which the builders rejected in the past, will surely become the great central corner of the edifice of tomorrow, and the better age that is just before us.

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#### SOME PROHIBITION PAPERS.

A little bi-monthly called Catholics and Prohibition, edited by the Rev. George Zurcher of Manilla, New York should not be overlooked in the periodical literature of the drink question. This little journal evidently is a power, and appeals in a modest way to many persons by its clear, graphic statements of facts. We commend it most heartily.

The Amethyst is a monthly publication and official temperance organ for the Presbyterian Church. Its purpose is to appeal to the members of this church to make the temperance question and its applications a part of their religio-sociological duties. In this way they have succeeded beyond measure. With a circulation running up into the hundreds of thousands, the eight-page pamphlet brings a very interesting grouping of facts and statements helpful to the society and to its readers. Such publications do a great deal of good in a quiet way. Wherever they are circulated, there is a distinct elevation of public sentiment, and a more rational view of one of the great topics of modern times. We welcome this publication and believe that it is preaching more effectual sermons and doing more good than many other more pretentious agencies. It is published at Pittsburgh, Penna.

The American Advance is an independent weekly journal, an organ of the prohibition party, that has taken high rank among journals. It is published in Chicago, and is aggressive, progressive, and an evolutionary journal, pressing the great questions for the suppression of the saloon and the stamping out of the drink problem. The modern temperance paper, of which this is the very best type, recognizes the medical side of the problem and gives great prominence to

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the conclusions of science and their practical application. This feature of the Journal commends it to a large number of persons and gives it an educational value which cannot be over-estimated. It is published by the American Advance Company.

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Col. L. M. Maus, Deputy Surgeon General of the United States Army, has recently written a most entertaining book, entitled *An Army Officer on Leave in Japan*. It describes his experiences in Manila, Dewey's great battle, and the stirring events that occurred at that time, then goes over to Japan, and gives a very entertaining account of the people, their appearance, and the country. The doctor is evidently a close observer, and has written a book that is very instructive, as well as readable. We commend it most heartily to our readers. The publishers are A. C. McClure Co. of Chicago, Ill.

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#### BULLETIN ON DRUG HABITS.

Farmers' Bulletin No. 393, which has recently been issued by the U. S. Department of Agriculture, deals with the dispensation of the habit-forming drugs, especially as sold in soothing syrups, asthma cures, and other proprietary medicines advertised as harmless. Photographs of the original packages of some of the more dangerous of these drugs, are included in the report, which is said to be the first of a series to be published on this subject by the Department of Agriculture.

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#### LEVIATHAN.

##### A Story of the American Opium Evil.

The authoress, Miss Jeannette Marks, attempts to portray causes and conditions from which the opium evil springs in this country, in the form of a story which is well told. Miss Marks is an authoress who has won fame in other fields by her clear, graphic pen pictures, and this new effort will attract a great deal of attention.

There is a painstaking adherence to facts, which gives the volume an accuracy and power that is very pleasing. The purpose, to arouse a new interest in opium addicts, and show how to make an escape from its grasp, will be very helpful to every reader.

This book should have a very large sale as one of the real useful, helpful stories that can bring light to many a dark household.

Geo. H. Doran Co. of New York are the publishers.

## Abstracts

### DEFECTS OF CHARACTER AS CAUSES IN ADDICTIONS.

The following excerpt from Dr. Petty's work on Narcotic Drug Diseases is worthy of note.

Among the mental and moral conditions predisposing to the formation of narcotic drug addiction, we might mention lack of conviction, low ideals, moral cowardice, self-centered life, softness, over-indulgence by parents, indifference to the obligations common to all humanity, living for the gratification of the present moment, low and inadequate views as to the meaning, or obligations, of life, over-confident and inordinate ambition.

Instability of character with deficient convictions are important in any one, and expose such a one to many dangers as he passes through life. The man with positive traits of character, fixed habits, strong convictions as to what is right and wrong, and who has a keen sense of the obligations to humanity, will, by the mere possession of these opinions and convictions, be protected from many of the snares and pitfalls that inevitably await those who are less fixed in their habits and convictions.

If the purposes and conduct of those who take up the use of narcotic as a dissipation, be analyzed, it will be found that selfishness lies at the center of most of their actions; in fact, their lives are self-centered. Everything points to something for themselves. They live for the gratification of the present moment, almost exclusively.

Persons of this type have so little moral purpose, so little kindness, and so little care for anything but themselves, that they are unwilling to suffer even for one moment. If the slightest ailment occurs, they consider it the most important thing in life, and as it affects them, it appears to them to be a mountain, and must be relieved at once at all hazards. This exalted estimation of their own personality leads them into many errors, as well as many dangers.

If it happens that they are attacked by a painful ailment of any kind, their urgent insistence upon immediate relief at all hazards leads almost inevitably to drug slavery.

Opiates have a very seductive effect on such persons. They are usually out of harmony with themselves and everything surrounding

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them. The effects of opium relieve this discordant condition and bring them somewhat into harmony with their environments, and to them this is a most delightful experience. They are, therefore, very prone to fall a victim to narcotic drugs.

Dr. Gay of Boston in a recent letter to the daily press makes the following startling statement: "Hitherto, physicians have considered the results more than the causes and means of prevention. It is high time now for the tax payers of Massachusetts to recognize the defects in her people, as seen in the fact that it requires seven million annually to care for her defective, delinquent and criminal classes. These include the insane, feeble-minded, epileptic, inebriate, paupers and criminals.

Thousands of these unfortunate people have become public charges. Many are of no use to themselves or any one, but are simply burdens of an overtaxed commonwealth. Among the chief causes of these deplorable affairs are alcohol, the social diseases, and heredity. The abuse of alcohol directly or indirectly does more to fill our prisons, insane hospitals, alms houses, and other institutions, than all other causes combined."

This opinion is stated as a fact by a commission appointed by the legislature to consider and report on this subject. Upon the best of authority it is clear that a large proportion of chronic alcoholics are the victims of one or both of the social diseases. This fact is recognized by the medical profession with greater frequency. So far the only effective method is by segregation in asylums, schools, prisons, colonies and homes. There is a great, unknown field stretching out from this point, yet to be occupied.

#### AMERICAN COURT DECISIONS AND THE LIQUOR TRAFFIC.

It is not necessary for the sake of justifying the State legislation now under consideration, to array the appalling statistics of misery, pauperism, and crime which have their origin in the use or abuse of ardent spirits.—U. S. Supreme Court, *Mugler vs. Kansas*, Vo. 8, U. S. 123, U. S., 295.

No one possesses an inalienable or constitutional right to keep a saloon for the sale of intoxicating liquors.—*The State vs. Gerhardt*, 145, Ind., 439, at p. 462.

#### ADDICTIONS.

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If the public safety or the public morals require the discontinuance of any manufacture or traffic, the hand of the Legislature cannot be stayed from providing for its discontinuance by any incidental inconvenience which individuals or corporations may suffer.—*Beer Co. vs. Mass.*, 97, U. S., 32.

It is said that "what a man shall drink equally with what he shall eat, is not properly matter for legislation." There is in this position an assumption of a fact which does not exist that when liquors are taken in excess the injuries are confined to the party offending. The injury, it is true, first falls upon him in his health, which the habit undermines; in his morals, which it weakens, and in the self-abasement, which it creates. But as it leads to neglect of business and waste of property and general demoralization, it affects those who are immediately connected with and dependent upon him.—*Crowley vs. Christensen*, 137, U. S., 86.

That it (the liquor traffic) produces from four-fifths to nine-tenths of all the crime committed is the united testimony of those judges, prison-keepers, sheriffs, and others engaged in the administration of the criminal law who have investigated the subject.—*Indiana Supreme Court*, 1855.

It (the prohibitory law) seeks to promote the general welfare by prohibiting an excessive vice which is doing more to disqualify men for self-government than all other influences combined.—*Our House, No. 2, vs. The State*, 4, *Freeman (Iowa)*, 172.

That the right to sell liquors is not an inherent right of a citizen of the United States is beyond cavil.—*Adams vs. Cronier*, 69, *Pac. Rep.*, 594.

We presume no one would have the hardihood to contend that the retail sale of intoxicating drinks does not tend, in a large degree, to demoralize the community, to foster vice, produce crime and beggary, want and misery.—*Prohibition vs. City of Chicago*, 68, *Ill.*, 44.

There is no statistical or economical proposition better established nor one to which a more general assent is given by reading and

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intelligent minds than this: That the use of intoxicating liquors as a drink is the cause of more want, pauperism, suffering, crime, and public expense than any other cause, or perhaps it should be said, than all other causes combined. Every State applies the most stringent legal power to lotteries, gambling, keeping gambling houses and implements, and to debauchery and obscenity, and no one questions the right and justice of it; and yet how small is the weight of woe produced by all these united, when compared with that which is created by the use of intoxicating drinks alone.—Iowa Supreme Court, Lantz vs. State, 2, Iowa, 164.

Liquor in its nature is dangerous to the morals, good order, health, and safety of the people, and is not to be placed on the same footing with the ordinary commodities of life. We do not suppose there is a more potent factor in keeping up the necessity for asylums, penitentiaries and jails, and in producing pauperism and immorality throughout the entire country than liquor.—State ex rel. George vs. Acker, 26, L. R. A., 351, 352.

**MORTALITY FROM ALCOHOL ACCORDING TO INSURANCE STATISTICS.**

Miss Cora F. Stoddard, Secretary of the Scientific Temperance Federation in Boston, Mass., has made a very striking compilation of the tables prepared by the Prudential Insurance Company. These tables are based on the records of 103,434 deaths of men over 15 years of age in the Company's Industrial experience, covering a period of three years.

These tables point out the deaths due to various diseases out of the total number, particularly according to the occupation. Thus in 3,443 clerks, 36.7 died from tuberculosis; 7.9 died from heart disease. The number of persons who died from drink is interesting, when compared with the occupations. The company divided the saloon keepers and bar-tenders in a class by themselves. Among the deaths from alcoholism seven occupations were listed, and these ran as follows:

Bartenders .....	6.7 per cent.
Saloon-keepers .....	4.4 per cent.
Glass Workers .....	1.9 per cent.
Plumbers .....	1.9 per cent.
Masons .....	1.9 per cent.
Printers .....	1.6 per cent.
Cigar Makers .....	1.5 per cent.

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The painters seem to follow closely on this list, and from that on down to carpenters and farmers at the foot of the list with a rate of .3 per cent. This showed that alcohol was one of the special dangers, particularly to the tradesmen handling it. Thus the men who handled alcoholic drinks had the largest percentage of deaths from alcohol. This one company in three years lost \$1,522,000.00 on 1522 persons who died from alcohol, estimating each man's life worth \$1,000.00. If this company's statistics are applicable to general mortality statistics all over the country, the figures reach startling proportions and make it one of the most serious diseases known. The startling fact of occupation predisposing to early death has been recognized by companies for a long time. Some of them have refused to take an insurance out on persons who deal with spirits. Others take the risk, only insist that the insured person be credited as moderate drinkers, or total abstainers.

All the companies have recognized a very close relation between certain occupations and drinking, but are unable to draw lines that are practical.

Thus glass-blowers, plumbers, printers and cigar-makers have an unusual high rate of mortality, and tuberculosis seems to be a very prominent cause of death. Back of that is the somewhat obscure history of drinking, but there are many reasons for believing that alcohol has contributed the largest factor of mortality.

A study of these statistics shows that liquor selling occupations greatly hasten deaths from tuberculosis and nearly all persons in this business died before 60, so that old age was never reached by this class. These statistics throw a lurid sidelight on what undoubtedly exists to a very great extent, but so far has escaped the attention of statisticians and boards of health.

The chairman of an Entertainment Committee of the \_\_\_\_\_ Medical Society protested against serving wines and beers at the annual dinners. He was over-ruled by the committee. At the dinner he was invited to say grace. This he did in the following way: "Accept our heartfelt thanks, O Lord, for the blessings and mercies bestowed upon us; and forgive our ignorance and stupidity in partaking of spirits and wines, the effects of which we are all painfully conscious of. Pardon our blind following of customs of the past and the vicious example we are setting for our associates. Guide us and help us out of our weakness; for Christ's sake. Amen.

It is needless to add that the next dinner was served without wines.

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## DRUGS INDUCING PSYCHOSIS.

Under this title an article appearing in White's Modern Method of Treatment of Mental and Nervous Diseases has attracted some attention, and several correspondents have made inquiries concerning it. To persons familiar with this subject the article provokes comments and questions.

The unusual prominence which the author gives to so-called special treatments, and his reference to authorities of some time past and his silence concerning recent studies and recent books, suggest a limited acquaintance with the subject. The bibliography appended to the article confirms this. This should not naturally attract undue attention, other than a very preliminary and early study of the subject.

The June number of the Vermont State Board of Health Report contains a very interesting table of medico-legal cases examined at the laboratory of hygiene during the months of January, February and March. This Journal is issued by the Health Board and is devoted entirely to hygiene and sanitary questions pertaining to the state. Disputed questions of every kind are referred to the laboratory for final decision. Cases of deaths that are suspicious, where the causes were unknown are referred by the States' attorney to the Laboratory of the Health Board, to determine the causes. In thirty-seven cases so referred during the three months, the report indicated that seven of them were directly due to alcohol.

Eleven were due to arsenic, presumably taken with suicidal intent, others were from pneumonia and various inflammatory conditions, which undoubtedly were connected with alcohol. Four cases were pending and had not yet been determined when the report was written. There is something somewhat startling in this large proportion of deaths directly due to alcohol. Evidently others were due to the same cause, but were not so prominent.

The English papers find much cause for humor in the effort of Mr. Roosevelt to prove that he is a temperance man. His declarations that he did not drink whiskey or beer, and only on rare occasions drank wine, and the support that he had from his numerous friends, seems to them like a huge joke. One paper says that he could never be a candidate again, particularly if he wanted to support the prohibition party. Another paper declares that his statements of moderate drinking have a familiar sound in every circle of society. The tremendous effort necessary to establish a reputation of a moderate drinker, is an ominous sign for the temperance work.

THE AMERICAN SOCIETY FOR THE STUDY OF  
ALCOHOL AND OTHER NARCOTICS

Will hold its 43d annual meeting in the parlors of the Rittenhouse Hotel, Philadelphia, Penna., Dec. 3d and 4th, 1913.

The first session will be Wednesday afternoon, Dec. 3d, at 2 o'clock. This Society was organized in 1870, and was the first, and is now the oldest medical association in the world for the study of alcohol and the diseases which follow from its use, from a purely medical and scientific standpoint.

The Journal of Inebriety, first published in 1876, is the organ of this society, and is edited by Dr. T. D. Crothers, Hartford, Conn.

PROGRAM OF PAPERS.

Dec. 3, 2.00 P. M.

"ALCOHOLIC PSYCHOSIS." By F. C. Tyson, M. D.,  
Assistant Supt. Bangor Hospital, Bangor, Maine.

"INFLUENCE ON LONGEVITY OF SO-CALLED  
MODERATE DRINKING." By E. L. Fiske, M. D.,  
Med. Director Postal Life Insurance Co., N. Y. City.

"PHYSIOLOGICAL AND PSYCHOLOGICAL MO-  
TIVES IN INEBRIETY." By Prof. T. W. Patrick,  
State University of Iowa, Iowa City.

"HABIT-FORMING DRUGS AND THEIR RELA-  
TIONS TO PHYSICIANS." By B. C. Keister,  
M. D., Supt. Keister Home Sanatorium, Roanoke, Va.

"INEBRIATE DIATHESIS AND PSYCHO-NEU-  
ROTIC THRALLS OF ALCOHOL." By C. H.  
Hughes, M. D., Editor Alienist and Neurologist, St.  
Louis, Mo.

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"INJURIOUS EFFECTS FROM THE MODERATE  
USE OF ALCOHOL." By Col. L. M. Maus, Medi-  
cal Corps, United States Army, Governor's Island, N. Y.

Dec. 3, 8.00 P. M.

PRESIDENT'S ADDRESS: "The Attitude of the  
Learned Profession Toward the Alcoholic Problem." L.  
D. Mason, M. D., President, Brooklyn, New York.

"PROPHYLACTIC AND CAUSATIVE MEASURES  
AGAINST ALCOHOL." By Alfred Gordon, M. D.,  
Late Ass't. Prof., Jefferson Medical College, Phila., Pa.

"SOME FACTS ABOUT MORPHINISM." By Ernest  
S. Bishop, M. D., 422 West End Ave., New York City.

"INSTITUTIONAL TREATMENT OF DRUG AD-  
DICTIONS." By C. J. Douglas, M. D., Supt. The  
Douglas Sanatorium, Boston, Mass.

"ACUTE ALCOHOLIC INTOXICATION A DIRECT  
CAUSE OF EPILEPSY." By Matthew Woods,  
M. D., Specialist in Nervous Diseases, Philadelphia, Pa.

"ALCOHOLISM IN RELATION TO PULMONARY  
CONSUMPTION." By T. J. Mays, M. D., Specialist  
in Tuberculosis, Philadelphia, Pa.

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Dec. 4, 10.00 A. M.

"INEBRIETY IN GREECE IN ANCIENT TIMES."  
By A. Rose, M. D., Specialist, New York City.

"ALCOHOLISM AS A FACTOR IN DISEASE,  
STUDIED IN HOSPITALS." By DeLancy Car-  
ter, M. D., Specialist, New York City.

"THE MEDICO-SOCIOLOGIC ASPECTS OF ALCOHOLISM." By H. A. Cotton, M. D., Medical Director of the State Hospital, Trenton, N. J.

"SOME STATISTICS REGARDING THE TREATMENT OF ALCOHOLICS." By A. R. Moulton, M. D., First Ass't., Penn. Hospital for Insane, Phila. Pa.

"SOME SOCIOLOGICAL ASPECTS OF THE PSYCHOLOGY OF INEBRIETY." By Tom A. Williams, M. D., Specialist, Washington, D. C.

"PSYCHICAL TREATMENT OF INEBRIATES." By John D. Quackenbos, M. D., late Prof. of Psychology at Columbia University, New York City.

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Dec. 4, 2.00 P. M.

"SOME CONCLUSIONS FROM THE MEDICAL CARE AND TREATMENT OF INEBRIATES IN THE OLDEST HOSPITAL IN THE WORLD." By V. A. Ellsworth, M. D., Supt. Washingtonian Home, Boston, Mass.

"PUBLIC CARE AND TREATMENT OF INEBRIATES IN NEW YORK." By Charles Samson, Esq., Executive Sec'y of the Board of Inebriety, N. Y. City.

"STATE CARE OF INEBRIATES IN IOWA." By George Donohoe, M. D., Supt. State Hospital for Inebriates, Knoxville, Iowa.

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"THE TREATMENT AND CURE OF INEBRIATES BY THE STATE." By I. H. Neff, M. D., Supt. Foxborough State Asylum, Foxborough, Mass.

"TREATMENT OF INEBRIATES IN PRIVATE ASYLUMS." By T. D. Crothers, M. D., Walnut Lodge Hospital, Hartford, Conn.

"INEBRIATES AND DRUG TAKERS, WHAT CAN WE DO FOR THEM IN HOSPITALS AND COLONIES?" By J. J. Kindred, M. D., Pres: River Crest Sanatorium, Astoria, New York.

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Dec. 4, 8.00 P. M.

"THE INFLUENCE OF EARLY LIFE IN ITS RELATIONSHIP TO NARCOTIC PREDISPOSITIONS." By Henry Beates, Jr., M. D., Phila., Pa.

"STATE CONTROL AND INSPECTION OF PUBLIC AND PRIVATE INSTITUTIONS." By G. H. Benton, M. D., Supt. Sterling-Worth Sanitarium, Dania, Florida.

"THE BEST AND WORST TO BE SAID OF ALCOHOL." By J. Madison Taylor, M. D., Editor of the Monthly Cyclopedia, Phila., Pa.

Several other papers have been promised, the titles of which have not been received. They will appear later in the corrected program.

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HEADQUARTERS.

The Rittenhouse Hotel, one of the most elegant of Philadelphia's famous hostelries, has been chosen as the Headquar-

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ters of our meeting, and it is hoped that our members and friends will make this their stopping place while attending the sessions of the Society.

A table of the rates, both American and European, may be found on page 111 of the Advertising Section, and we earnestly urge all those who expect to attend to write to the management in advance and secure the apartments that they may require, so that no disappointments will be in order when they arrive.

### PRIZE ESSAY

Under the auspices of The American Society for the Study of Alcohol and Other Narcotics, Dr. L. D. Mason of Brooklyn, N. Y., Vice Pres. of the society, offers a prize of \$150.00 for the best essay on the following topic: "The Biological and Physiological Relations of Alcohol to Life."

The essay must be the result of original research which shall confirm or disprove the present theories of the inherited effects of alcoholic degenerations and indicate how far the defects of parents are transmitted to the children.

Such work may be carried on in man or animals, and the results may be illustrated by drawings or photographs and must be typewritten and sent to the office of the Secretary before July, 1914.

This offer is open to students in all countries, and each essay should be accompanied by a motto and a sealed envelope containing the same, with the author's name and address.

A committee of award of which Dr. W. S. Hall, Prof. of Physiology in the Northwestern University, Chicago, Ill., is the Chairman.

All inquiries should be addressed to Dr. T. D. Crothers, Hartford, Conn., Sec'y.

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## Directory of Sanitariums.

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### KENSETT.

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### WALNUT LODGE HOSPITAL,

Address Thomas D. Crothers, M. D.,  
Hartford, Conn.  
See "AD" page 11.

### DR. WOOLEY'S SANITARIUM,

Atlanta, Ga.  
See "AD" page VII.

### DR. BROUGHTON'S SANITARIUM,

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### HINSDALE SANITARIUM,

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See "AD" page X.

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See page X.

### NORWAY'S,

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See page IV.

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See "AD" page 11.

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See "AD" Back Cover Page.

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See "AD" page VII.

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The work of this society is to compile and make available the studies by physicians in all parts of the country, and publish them in the Journal of Inebriety, the organ of this society, independent of all previous theories, and from a strictly medical point of view. All regular practitioners of medicine may become members of the society by a majority vote of the Executive Committee, accompanied with an initiation fee of \$5.00. The annual dues are \$3.00, which includes a subscription to the Journal of Inebriety for one year.

Associate members will be required to pay \$3.00 which will include the Journal of Inebriety for one year. Annual and semi-annual meetings will be held, in different cities, as arranged by the Executive Committee.

## Officers of this Society for 1913 :

Hon. Pres. H. O. Marcy, M.D., LL.D., Boston, Mass.

Hon. Pres. W. S. Hall, M.D., Ph.D., Chicago, Ill.

Pres. L. D. Mason, M.D., Brooklyn, N. Y.

Vice Pres. T. Alex. MacNicholl, M.D., New York City.

Vice Pres. Alfred Gordon, M.D., Philadelphia, Pa.

Secretary, G. H. Benton, M.D., Diana, Florida.

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The following are some of the valuable books on the literature of inebriety and alcoholism that deserve special mention, as containing the latest and most authoritative facts in this field.

Copies can be had by addressing the publishers or from the Therapeutic Publishing Company.

**Alcohol on the Human Body**, by Sir Victor Horsley, published by Macmillan & Co., New York City. Price \$1.50. **A Clinical Treatise on Inebriety**, by T. D. Crothers, M. D., published by The Harvey Publishing Co., Cincinnati, O. Price \$3.00. **Inebriety and Narcomania, Its Pathology and Treatment**, by Dr. Norman Kerr, published by P. Blakeson & Co. Price \$3.00. **The Psychology of Alcohol**, by Rev. Dr. Geo. B. Cutten, published by Chas. Scribner & Sons. Price \$2.00. **Morphine and Narcomania**, by Dr. T. D. Crothers, published by W. B. Saunders & Co. Price \$2.00. **Narcotic Drug Diseases and Allied Ailments**, by Dr. Geo. E. Petty, published by F. A. Davis & Co. Price \$3.00. **The Morphine Habit**, by Dr. Oscar Jennings, published by Wm. Wood & Co. Price \$1.50. **Inebriety, Its Source and Treatment**, by Dr. Palmer, published by F. H. Revell & Co., New York City. Price \$1.00. **Drug Habits and Their Treatment**, by Dr. T. D. Crothers, published by G. P. Englehard Co., Chicago, Ill. Price \$1.00. **Studies in the Psychology of Intemperance**, by Dr. G. E. Partridge, published by Sturgis & Walton Co., New York City. Price \$1.00. **Pathological Inebriety, Its Causes and Treatment**, by J. Astley Cooper, M. D., London, Bailliere, Tindall & Cox, publishers. Price \$1.50.

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