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er tending to destruction instead of preservation and ask ourselves if so-called modern civilization is not rather paving the way for the disappearance of our peoples as of the former races at one time dominant. It is to our profession, now the high priests of science, the world looks for preservation from former calamities and the making possible the millennial dream of a new and richer life on our globe. Huxley once said to me in his characteristic satiric vein, and you must remember he was a graduated physician: "You doctors remind me of a great and lusty giant armed with the big stick filled with enthusiasm to destroy disease, striking about him most vigorous blows, but he injures his friends quite as much as his enemies, for alas he is blind!"

This can not be said today of the profession. The large percentage of the physical enemies of mankind are now known factors of the problems of life. In illustration, tuberculosis, diphtheria, typhoid, malaria, and yellow fever, cholera, dysentery, diarrhea. In the same spirit so-called medicaments or remedies are being studied and much in the same general way as foods, drinks, etc. Prompted by this spirit this society had its birth. It was established for the study of alcohol and narcotics, governed and guided by no preconceived ideas or prejudices; seeking only scientific truth. Here we perceive the master spirit of its founder, the late Dr. N. S. Davis, who at once recognized the difficulties of the work; confessedly one of the most obscure subjects of modern medi-

cine. It must be recognized that partisanship was and still is strong. On the one hand men and women seeing the curse of alcoholism would banish it and its uses from judicial consideration; on the other hand a large body of most intelligent men is trained in the experience of generations and their own educated tastes, to believe a moderate use of vinous beverages is beneficial, both in health and disease. By both these classes, this society has been looked upon in suspicion and at times held up to ridicule, one class claiming the problem already solved; the taking of alcohol in any of its forms is evil and an evil only; the other that the members of this organization are not worthy of consideration more than any other class of prejudiced partisans. Personally, I acknowledge my lack of fitness to preside over this body of intelligent workers in the new field of science. Lack, since no original work of mine has added material fact of value. In a sense, I have been a prejudiced observer, since I was most conscientiously taught to believe that alcohol in various forms was if not the important, a remedy in a very considerable class of most dangerous diseases. In common with many other students, I early began to question the real evidence of benefit derived from the uses of alcoholic liquors, and now am led to believe that the sins of commission in my early practice greatly exceeded that of omission in the later years. To this conclusion I have been guided by my own experience, aided by that

of a large number of our most intelligent unprejudiced observers. Lacking positive scientific data of my own to present to you, I take the greatest possible pleasure in collating from other sources, data, which I believe to be creditable upon this most important subject.

In common with every well thinking intelligent man, it may be admitted without discussion that the excessive use of alcohol as a beverage works injury to the race and injury only. In the much mooted question of its value as a food product we desire to take no part, since its most ardent advocates admit that, at the best, it is of very limited value, and that other articles can be selected which serve a far more useful and safe purpose.

Dr. T. D. Crothers, in writing upon the value of alcohol, states, January, 1907: "In a general way it may be stated that the physiological action of alcohol on the body is practically unknown. Theories of its value as a food, as a nutrient, and as a force producer, and its usefulness as a beverage, when examined are found to be unverified or untrue. Evidence of its value in health and in moderation rests on theory and superstition, and is not sustained by appeals to fact."

The question of its value as a medicine is by no means settled. Men eminent in science, and fully competent to decide, express doubt, or deny its value altogether. Leading physicians and teachers of medicine prescribe less and less spirits, and the extent of its use in disease is becoming more limited every year.

Dr. R. C. Cabot of Boston, writing upon alcoholic stimulations in continued fevers, ten years ago, stated in the opening of his lecture: "There are many who regard the existence of one of these febrile diseases as of itself a sufficient reason for giving alcoholic stimulants. For example, in Wood and Fitz's Practice of Medicine it is laid down that 'Alcohol in some form should be used in every case of typhoid from the beginning, unless there be some very strong reason for refusing it, as where there is a distinct herclity towards drunkenness.' Many who might not agree to this course in typhoid believe in using alcohol in every case of pneumonia, whatever its nature, and in all severe septic and pyemic processes, I should suppose that the majority of good practitioners in this vicinity would prescribe alcohol as a matter of routine. From this point of view the diagnosis once established, the exhibition of alcoholic stimulants is a matter of course."

Dr. Cabot published in 1893 a most valuable paper, "Studies on the Action of Alcohol in Disease, Especially Upon the Circulation." He premises by saying: "I have done all possible to prevent personal bias from influencing my opinion."* That I have succeeded, at least to some extent, is evidenced, I think, by the fact that my results have not come out at all as I expected and indeed hoped that they would.

"In order to counteract so far as

*Boston Medical and Surgical Journal, Dec. 7, 1897.
** Medical News, July 25, 1909.

possible the bad effects of my preudices, I have recorded each of my observations on separate slips of paper without allowing myself to refer to the chart in which they were later recorded. As I could not retain in memory the records of the individual patients, and did not allow myself to be reminded of them by looking at the chart, I was thus unable to influence the readings in the direction of my expectations, as I previously found it very tempting to do.

"In the study of the effects of alcohol on temperature, appetite, sleep, etc., I have circumvented my bias by getting nurses, who had no idea of what I had in mind, to record the data for me on blanks provided for the purpose.

"I have said that there was a dearth of experimental evidence regarding the action of alcohol in diseased persons, but this lack is much more striking in certain directions than in others. Certain points have, I think, been pretty well cleared up, while others are still obscure. Hence it may not be out of place to sum up what may be regarded as relatively settled, in order that the unexplored regions may be made more evident by contrast.

"About the food value and the digestive action of alcohol, about its effect on temperature, respiration, the secretions and the susceptibility of the lower animals to infection, there is a good deal that we may consider settled. On the other hand, there are very few experiments upon its action on the circulation of the sick, or upon the protective powers

of the human blood against infection."

"In states of profound intoxication, belonging practically to the class of collapse there may be a very marked lowering of temperature. Therapeutic doses of alcohol given to sound men seemed to produce a slight lowering, amounting, according to the experiments of Binz's pupils, to about .7 degrees F. In sick people the decrease was about the same. The temperature of the skin is greater than that of the rectum, a fact which seems to indicate that the lowering of the rectal temperature and presumably of that of the internal organs in general is due to the dilatation of cutaneous vessels.

The most recent and careful researches on this much-disputed point seem to show that in fresh healthy men the power of voluntary muscular movement is increased about 7 per cent. for the first one-half hour, after which there is decrease to a point about 5 per cent. below the normal.

By diminishing the sense of fatigue, alcohol undoubtedly enables men to push themselves for a short time beyond the limit which nature would otherwise have imposed upon them through fatigue.

It must have forced itself upon the notice of anyone who has watched the effects of alcohol in fever cases, that such patients will stand an extraordinary amount of the drug without any signs of intoxication.

That sick persons are not intoxicated even by enormous doses of

alcohol gives us no evidence whatever that it is doing good, nor on the other hand, is it a reason for believing that it does harm. It is an interesting but a wholly neutral fact, so far as the therapeutic value of alcohol is concerned, and is important chiefly as a warning to those who tend to argue directly from the known effects of the drug in health to its supposed effects in disease."

I have quoted this freely from Dr. Cabot's paper, since I consider it a most important contribution upon this subject, and although the results given are for the most part negative, they are none the less valuable.

Dr. Reid Hunt has very recently published the results of a long series of research studies upon experimental alcoholism and he summarizes as follows:—

"It is believed that these experiments afford clear experimental evidence for the view that extremely moderate amounts of alcohol may cause distinct changes in certain physiological functions, and that these changes may, under certain circumstances, be injurious to the body. The results also afford further evidence that in some respects the action of alcohol as a food is different from that of carbohydrates, and finally that in all probability certain physiological processes in 'moderate drinkers' are distinctly different from those in abstainers."

From an address by Dr. T. A. MacNicholl of New York I quote: "A physiological principle which is universally accepted by physiologists is that enunciated by Prof. W.

S. Hall of the Northwestern University, Chicago: Not only will the poisonous excretions of any living organism poison the organism which produces it, but it will also have a poisonous action upon any organism of a higher rank. The poisonous excretion of the alcoholic yeast is poisonous not only to the yeast but also to all animals."

"Massart and Border, Metchnikoff and Sims, Woodhead have proved that alcohol, even in very dilute solution, prevents the white blood corpuscles from attacking invading germs, thus depriving the system of the co-operation of these important defenders, and reducing the powers of resisting disease."

"We were taught by a generation of physicians, now rapidly passing away, that alcohol was the sheet anchor in pneumonia and the cure-all in disease, but more exact methods of examination with the aid of instruments of precision have exploded these notions and placed alcohol where men and women who were wise before their time had placed it, in the role of narcotic poisons."

"The laboring man hears beer called liquid bread, and spends his money freely for it, not only because he likes it, but because he thinks it strengthens him and helps him to do his work. He knows that physicians have given beer and wine and whiskey to the sick to strengthen and sustain them; and he reasons that what is food for the sick must also be beneficial to those in health. He has never heard of the large class

of physicians who make little or no use of alcohol in their practice.

"So also with mothers in the home. They know that some physicians give alcoholic liquors in consumption, in fevers, in pneumonia and other ills, and because of this, these mothers keep the whiskey, or brandy, or 'parent medicine' bottle on hand, and resort to it in every little weakness which may afflict the family. Glibly will women talk of how good a whiskey sling is for a cold, and rock-and-eye and *Pyrima* are familiar 'dopes' in many a household, where the beverage use of the lightest liquor would not be tolerated.

"There is another point in regard to alcohol and tuberculosis. I wish to emphasize, and that is the idea that alcohol is a remedy or even a specific remedy for consumption. There has never been a greater mistake made. Alcohol has never cured and never will cure tuberculosis. It will either prevent or retard recovery. It is like a two-edged weapon; on one side it poisons the system, and on the other side it ruins the stomach and thus prevents this organ from properly digesting the necessary food. Truly pathetic are the results of this erroneous doctrine in the families of the poor, where instead of procuring good nourishment for the invalid liquor has been bought in far too large quantities, so that often there was not enough money left for food for the sufferer nor for the other members of the family." S. A. Knopf, M.D., New York, Honorary Vice-President of the British Congress on

Tuberculosis. Dr. Knopf in his prize essay on "Tuberculosis and How to Combat It," says in several places: "Avoid all alcoholic beverages." He says also, "Alcohol should never be given to children, even in the smallest quantities." (Yet Dr. Knopf expressly states that he is not a Prohibitionist.)

"In my specialty, the treatment of pulmonary diseases, I rarely prescribe alcohol in any form, and in the sanatorium with which I have been connected it is the exception where alcohol in any form is prescribed. I have advised against its use where such has been the custom, believing that as a rule alcoholic liquors do more harm than good in the treatment of this disease." Prof. Vincent T. Powell, M.D., Harvard Medical School, Boston, Mass. Dr. Howditch wishes it understood that he opposes alcohol in the treatment of consumption.

"It is difficult for many people to adapt themselves to a methodical plan of life long enough to establish a permanent cure in consumption. I have known many a young fellow with only a slight trouble in his lungs to die in the Adirondacks more from the effect of whiskey than from the disease itself." Dr. Henry P. Loomis of New York City, in a lecture on consumption.

It was formerly thought that alcohol was in some way antagonistic to tuberculosis, but the observations of late years indicate clearly that the reverse is the case, and that chronic drinkers are much more liable to both acute and pulmonary tuberculosis. It is probably

altogether a question of altered tissue soil, the alcohol lowering the vitality and enabling the bacilli more readily to develop and grow.

Prof. Segrain of Paris on "Alcoholism and Tuberculosis," said that the use of alcohol predisposes the human system to tuberculosis and also prevents the cure of it. Alcoholism intensifies the effect of disease which creates those conditions which are best fitted for the ravages of tuberculosis. Since the triumph over alcoholism, he continued, is approximately a triumph over tuberculosis, the real individual and social treatment for tuberculosis consists in the strictest abstinence from alcoholic liquors.

There is and ever has been much difference of opinion upon the quality of alcoholic beverages, and on this account a great difference of physiologic or pathologic effect. In illustration, in Switzerland the temperance laws have increased the amount of alcohol actually consumed, and yet there has been less intoxication and crime.

The increase of consumption of alcohol under this temperance law is due to turning the drinking habits of the people in the direction of light wines and beers. It appears that some twenty-five or thirty years ago this drinking of "hard drinks," both in industrial towns and among the farming population, had attained alarming proportions. What we should call in America "rotgut," distilled in Germany from potatoes, was becoming the staple drink, and the local control was extremely lax. Prohibition in any shape was not to

be thought of. As the Swiss people legislate for themselves by the initiative and referendum, something had to be studied out by which they would be, as it were, enjoined into better habits. Whatever is enacted in Switzerland represents exactly the will of all the people. Now, wine, beer, and cider are important Swiss industries, and the bill brought forward, after much study, by enacting remission of taxation on these industries, secured the vote of those interested.

The public opinion against spirits was not strong enough for prohibition methods and inducements were held out with success to the cunning and practical Swiss business mind. The result of the operation of the monopoly has been that the total quantity of alcohol sold has declined nearly one-half (40 per cent.) since the nationalization of the traffic in spirits. Still the consumption of wine, beer and cider has been so increased that in actual alcohol the amount consumed per head of the population is larger than before.

The whole world's great advance away from the custom of the grandfathers, in the matter of drink, is such that it seems possible that the shrewd Swiss strategy of first confining the drinking to light beverages and then gradually diminishing indulgence in those may be another Swiss contribution to modern civilization to be widely adopted in other lands.

The public are receptive to this line of teaching. I read a short paper two years ago before this association entitled, "Table Wines,"

in which I advocated the substitution of fruit juices in variety as preferable to wine from the standpoint of flavor, and pleasure of taste as well as temperance and health. It chanced to meet with such popular favor that it ran the rounds of the public press in both this country and Europe.

If one is wedded to his cup and from the downward course, there is no salvation, let him profit by the teaching of Dr. H. W. Wiley, chief chemist of the Agricultural Department, Washington. Dr. Wiley gave the following definition: "Whiskey is a distillate from the fermented mash of malt, and it contains all the congenetic products formed with ethyl alcohol during the fermentation that are volatile at the ordinary temperatures of distillation. Most of the whiskey sold at retail," he said, "should not even be called 'blended' whiskey, for it is the antithesis of straight whiskey. It should, therefore, be called 'crooked' whiskey, for it is an imitation. It is nothing whatever except neutral spirits, colored and flavored. I think that a drink like this is a poison, pure and simple. It coagulates the protoplasm in the cells and brings on old age.

"As long as a man can keep his cells limpid and keep his protoplasm limpid he will never grow old. Alcohol absolutely coagulates the protoplasm the moment it touches it, but the alcohol that is in whiskey or brandy or rum is so mingled by nature's operations that it is an entirely different proposition. There is all the difference in

the world between a drink of straight alcohol and a drink of good whiskey, brandy or rum.

"I made an experiment which was more convincing than I had expected. I took a twelve-year-old whiskey that was mellow and rich and fragrant, and I put it in a still and distilled half of it over, and I was careful to lose nothing, and I poured it back in the bottle, and had chemically the same thing as before I redistilled it, but that whiskey was not fit to drink. A divorce had taken place, and it would take another twelve years to make another marriage.

"Raw whiskies are not fit to drink. They are not 'married.' It takes them at least four years and better, eight years in the wood. Meanwhile leakage and storage increase the expense, and at the end of eight years that whiskey is worth many times over what it was when it was first distilled. On the other hand spirits are never as good as the day they were made. The minute you put spirits in a barrel they begin to degenerate." Dr. Wiley said that the manufacture of good and bad, straight and crooked whiskey differed from the start. In the first place the spirit makers use the poorest grade of corn that they can find on the market. The whiskey manufacturer buys the best corn and the highest grade of rye that money will bring. Dr. Wiley said that alcohol bears about the same relation to whiskey that starch does to flour and that distilled water does to mineral water. No amount of chemical skill can convert starch into flour

nor neutral spirits into whiskey. The result is bound to be nothing but an imitation, dangerous to health.

Prof. R. H. Chittenden emphasizes temperance in other directions as well as the abstaining from alcoholic liquors. "Intemperance in the diet holds in it as much danger as intemperance in any other thing. Care and discretion in eating gives as its reward longevity and good health to an old age, while there is great danger in over eating. Professor Chittenden then pointed out various instances of the abstemious lives of men who have lived to a good old age. These will be found to have followed a simple diet throughout their lives."

In this connection it is well to emphasize the intemperate life which is demanded in the modern high pressure system of business.

A word of warning is nowhere more needed.

It is also indirectly of importance, since the reaction from this strenuous life often leads to the conscientious use of alcohol, conditions which greatly increase its deleterious effect.

It is well known that liquor dealers as a rule demand of their clerks total abstinence. From the following quotation it would appear that in these very individuals we may find material assistance. Copying from our own example as medical men, striving to destroy the trade upon which we thrive.

As for the movement among liquor dealers themselves to reform and regulate the abuse of their own

trade, let us quote briefly from The Journal of their recent national convention, "The White Ribbon Movement, the Blue Ribbon Movement, the Prohibition Movement and the Anti-Saloon League Movement." "We, or are protests upon the part of good men and women against two of the greatest evils connected with our civilization and unfortunately for us, connected with our trade. We refer to drunkenness and to those saloons which are conducted in a disreputable manner or else in such a way as to demoralize, rather than to elevate those who patronize them and we, the delegates to this convention of the wine and spirit trade, desire to express in no uncertain tones our entire sympathy with the efforts that have been, or may be, put forth to exterminate these evils and our willingness to lend cooperation and assistance by every means in our power.

We are convinced that this can only be accomplished by extending the helping hand of encouragement to the man who conducts his saloon in accordance with the demands of public sentiment, and by a swift cancellation of the licenses of all who violate law and public sentiment.

We believe that it should be made a crime for men to become intoxicated. We hold that no man has a right to deliberately overthrow his reason and render himself a dangerous factor in society, and, therefore, we would gladly welcome the passage of laws providing severe penalties for such offenses and a firm, rigid enforcement without regard to

the wealth or influence of the offender."

Sir Victor Horsley, of London, at the meeting of the British Medical Association last August in Toronto, said: "You are probably aware of the attitude of the medical profession towards alcohol on this side of the water. Only a fortnight ago your French-speaking medical practitioners passed a very strong resolution on the subject, and you know that inquiry among the profession in Toronto resulted in the same conclusion; namely, that the medical profession, as a whole, has a hostile rather than a friendly feeling towards the drug which we call alcohol."

"Here I would like to say that the profession at home has the same hostile attitude on the whole towards alcohol that you have merely as a beverage, but I mean that they have found what alcohol's real value is as a drug. My opinion at any rate is that it is practically nil."

"When I was a student, alcohol was the traditional remedy in surgery for post-operative conditions; it was the traditional remedy for blood poisoning, septicæmia and pyæmia following operations, and it was the traditional remedy for infectious diseases like pneumonia. What is the practice now? That in all these cases alcohol is being no longer used."

"Forty years ago the seven great hospitals of London spent annually about \$10,000 for alcoholic liquors, and about \$15,000 for milk. Now alcohol and milk have changed places and the larger sum is expended for

milk and the smaller for alcohol. In the Infirmary at Salisbury twenty-five years ago \$1,500 was spent annually on alcoholic liquors. Last year the cost was only \$35.

These changes are due to increased knowledge of the nature and effects of alcohol.

"The change in the attitude of the medical profession towards alcohol is really due to Lord Lister. Antiseptic surgery rendered alcohol unnecessary."

"As regards post-operative conditions during the last twenty years we have had a whole armamentarium of drugs which serve our purposes far better in getting rid of shock than alcohol which has a long-continued depressing effect. Therefore, it is not surprising that on the surgical side of the medical profession alcohol has practically disappeared."

Professor Woodhead said: "We have heard from Sir Victor Horsley what the influence of the medical men must necessarily be, first of all because of his knowledge of what alcohol is doing; and, secondly, because any medical man who is worth his salt, is looking not merely at the immediate illness or indisposition of his patient. He is taking a much wider outlook, and is thinking ahead, as he alone can, of the welfare not only of his immediate patients, but of the welfare of all."

Sir Victor had spoken of the change which has come over the surgical branch of the medical profession as regards the use of alcohol. Now, although it is not perhaps so potent, I believe that an

equally strong change of opinion has taken place in connection with the medical branch, and that men who at one time looked upon alcohol as their sheet-anchor in the treatment of the various specific infective febrile diseases are now satisfied that alcohol exercises an absolutely deleterious effect upon the resisting power of the patient in many of these diseases.

I was very fortunately circumstanced as a medical student and a house physician, in having a very thoughtful, patient, observant man as my chief, Dr. Moorhead, of Edinburgh and I remember on one occasion, about 1877 or 1878, Dr. Moorhead was talking about the treatment of pneumonia, and he said: "If I can get a patient who has had no alcohol, I have very seldom any doubt as to the result of the attack of pneumonia, and I find that it is not as a Therapeutic Agent" in which he said: "If during the last quarter of a century I have prescribed almost no alcohol in the treatment of disease, it is because I have found very little reason for its use, and it seemed to me that my patients got on better without it."

It will be remembered that last year Sir Frederick Treves, King Edward's surgeon, made a strong address against the use of alcoholics as beverage or medicine.

The use of alcohol in the service of the United States Army and Navy is a question still under discussion. I can hardly do better than quote briefly from the very valuable paper of Dr. P. A. Lovering,

Medical Inspector of the United States Navy.

After a service of over thirty years in all parts of the world, under the varying conditions of peace and war, I am convinced that the use of spirituous drink should be discouraged and limited as far as possible, and yet I recognize that laws to prohibit their sale in toto cannot be enforced and, as a rule, have proved of doubtful value. During my naval service the necessity for temperance has increased very greatly. As the huge floating machines of war have grown in force, they require more intelligent and skilful handling to keep them effective. There is no place on a man-of-war for one whose brains are dulled and whose hands are remiss from drinking. Even those filling very subordinate positions may readily hazard the safety of the ship and the lives of the crew by thoughtlessly leaving a valve open or an uncovered light near explosives.

I have taken for comparison the English and the German navies, as their reports are fuller and the personnel is essentially of the same race as our navy.

In the German navy, with an average force of 31,000 men, there were in three and one-half years sixteen cases of alcoholism admitted to the sick list, less than five a year.

In the English navy in the last three years there were 251 admissions for alcoholism, an average of 84 a year, and the average strength of the navy was 104,000 men.

The ratio of admission in the three

navies is: United States navy, 605 per 1,000 men; English navy, 77 per 1,000 men; German navy, 14 per 1,000 men.

There are nearly ten times as many admissions for alcoholism in the United States navy as in the English navy, and nearly 50 times as many as in the German navy. Our navy makes a very poor showing in comparison with those of England and Germany.

In conclusion, I would say that in our navy, after a trial of prohibition for over forty years, we still have a personnel which very generally uses stimulants. In spite of the persistent efforts of sincere workers, the number of total abstainers is comparatively small, the general sentiment in favor of temperance is very lukewarm and the feeling toward intemperance is indignant.

In the same journal is a valuable editorial upon alcohol in the navy with the pertinent suggestion that the naval officer himself owes to those under his command the moral duty of exemplary teaching.

"If officers themselves are not temperate examples, we have in this alone a serious handicap to any temperance regulations for those below them. Objections might easily be made to giving up the use of wines and liquors on account of the alleged necessity for entertaining in foreign ports, etc., but if the absence of liquor was a government regulation the officers themselves could not be blamed and the parties higher up could stand it. It would probably have as a compensation a consider-

able economy in the mess bills, and it is going a long way to urge that there is any necessity on their own account for even moderate drinking by naval officers. How many disasters and how much money lost are due to drinking habits of American naval officers no one could positively say, but that there have been such disasters and losses in navies no one can deny, and there is an ever-present possibility of such in the existing state of affairs."

Last year I read a paper before this Society upon "The Influence of Intemperance in Railroad Accidents."

Railroad accidents have increased out of all due proportion during the last year, and this side of the railroad question is now so prominent in the public mind that every traveler is unduly impressed with the sense of danger. From every standpoint this unfortunate condition is productive of enormous harm to the body politic.

The Interstate Commerce Commission for the year ending June 30, 1906, showed a great increase in the total death toll of both passengers and employees over the previous year. A total of 4295 passengers and employees were killed during the year and 11,185 passengers were injured. Of course there are many reasons which go to explain this truly frightful mortality. Almost without exception the roads have been over-worked by the demands of both passenger and freight service. The last winter especially has been one of exceptional cold and storm. Psychologically, railroad men of all orders are most exposed to the

drink habit. The nerve and brain strain with irregularities of living predispose to exhaustion insomnia and all its train of associate dyspepsias, neuralgias. Alcohol in any form offers them a most seductive narcotic. Railroad surgeons will find here a most important field of study for the correction of many evils incident to the service. Since dependent upon a clear brain and a strong arm are the lives of the great army of our travelling public.

Some time since a gentleman of high social standing brought me his only son, begging me to use my influence and advice that he should not use tobacco. The son said: "I'll not smoke if father won't." It is almost needless for me to say that they are both now using tobacco very freely. The lesson is to us as leaders to set the example. A thing which is considered to be in vogue soon loses its prestige in the lower classes. Let me for a moment suppose that in self-sacrificing spirit all university men and all society people should join the clerical profession and physicians in declaiming it not to be in good taste to use alcoholic beverages. It would be hard to determine the limitation of such influence.

Work kills far less often than worry. Genuine application of man's best energies in the solution of any one of life's problems is the plain duty. This should be as the searchlight, focused for the time upon the object, all other subjects being rele-

gated to the surrounding darkness. This should not, however, be construed to include the rush of the over-nervous activity as seen in the high-keyed business men, or the insane round of fashion's follies pursued by the society woman of the day.

This intemperance also has its penalties, as seen in the hopeless procession of neurasthenia and the ever increasing resulting disability and death following in the train. Here the word of warning in no uncertain tone should be issued by our profession.

"And he took unto himself seven ether devils" may be said of such a profligate, for medicamenta of various sorts will surely follow. Alcohol, opium, the seeming endless variety of the coal tar series, cocaine, etc.

And the last estate of the victim was worse than the first. The melioral horizon is ever darkened by these clouds of disaster constantly contrasted with the might-have-been.

Some time since at the close of a lecture the president of the organization and myself were urged to accept a social drink of whiskey. We drank their health as I thought, in a tactful way, touching with them my glass of water when I overheard two of the younger men, standing aside, one saying to the other: "God, Tom, he is an aristocrat; he wants wine." Therefore let me say in closing the words of the great apostle: "I am willing to be all things to all men, that I may save some."

ALCOHOL AS TAUGHT IN THE CURRICULUM OF OUR MEDICAL SCHOOLS.*

By Dr. L. D. Mason, Brooklyn, N. Y.

Dr. Mason stated he did not present the address as a scientific contribution, nor as having any historical value, except in a moderate degree; but as simply *suggestive* would certainly if no *suggestion* were acted upon—stimulate scientific research in regard to alcohol—and mark an epoch in the history of medicine and thus indirectly produce a radical change in civic and social conditions and medical practice.

The relation of alcohol to education was of such importance that it demanded a place for consideration in our medical schools—in all the departments of medicine as then taught and in which it could be appropriately considered.

The attitude of the medical profession in the past—and to some extent in the present—was based on false theories concerning the nature and properties of alcohol—resulting in erroneous conclusions, bad practice, and serious results.

The medical profession is or should be the supreme and final court of appeal in all matters relating to medical science, and which all questions pertaining to hygiene and dietetics, medico-legal and medico-sociologic conditions are necessarily included.

The medical profession is the jury

by whom this great therapeutic and medico-sociologic problem is to be solved.

There is no one drug in the pharmacopeia or used in the practice of medicine so important or so much in evidence as alcohol, or it may be added, so little understood.

Its importance is enhanced when we assert that it is a *disaster* as well as a *habit* producing agent and that it holds a *false* and therefore unsafe place in the practice of *medicine*. Its consideration enters into all the departments of medicine. There is not a single branch as taught in our schools that can safely exclude it.

The medical schools hold not alone an unbroken capacity to the medical profession and medical student, but indirectly to the general public through the medical profession and press.

The medical profession, to a certain extent, as modifiers, regulators and controllers of the medico-sociologic problems of the day are responsible to the coming generation whose destiny is cast in the mold of the present, and as a profession today as are assisting in fashioning that mold from the physical standpoint.

There is no topic so much under discussion at the present time as the relation of alcohol to social, political and economic conditions—and to

medical practice—and the latter is in the heat and certain of the strife.

The medical profession cannot refuse to remain quiet, indifferent spectators, but must become active participants on one side or the other, and this remark applies also to the medical schools.

The change of medical opinion as to alcoholic medication from an almost universal use—to a greater or less limitation in its use—was gradual, as Sir Victor Horsley states:

"The craze was traceable not to any sudden change of opinion, but to a process of evolution by which the medical profession had come to recognize the real value of alcohol as a drug."

The change was also largely individual. The leaders were the older, experienced medical men who in professional skill and attainments, social, moral and intellectual standing were without peers in their profession. This statement applies not only to the United States, but also to Great Britain and her possessions and the countries of civilized Europe.

Modern medical conclusions accentuate this statement, none more so than the meeting of the British Medical Association, session of 1906, at which at the so-called "Temperature Breakfast" those who presided and spoke were the highest social and professional representatives of the medical profession there assembled.

It was our duty in the past, and is at present, and will be as an organization, to act as instructors, investigators, and specialists, in mat-

ters pertaining to "alcohol and other narcotics."

To expose error, false theories, to unlearn as well as to learn, the medical professional as to the true relation of alcohol to medication.

Insensibly yet professionally a little heaven is leavening the whole lump.

The medical schools should do and should have done what we have done and are doing. It is their province to teach and to lead correctly. Medical practice is as a rule but a reflection of the teaching of the medical schools.

As the medical student is the embryo practitioner, we naturally ask to what extent is alcohol taught or included in the curriculum of the medical schools.

A circular to the above effect was sent to about 75 leading schools of the United States, including army and navy, and one Canadian school. Twenty-four replies were received.

A consensus of opinion and practice as to the replies is as follows:—

1. Ten of the above replies were full and satisfactory.
2. All included the study of alcohol in the college course.
3. The army and navy, and as a rule post-graduate schools, did not consider the subject.
4. All had alcohol in connection with and the relation to the various departments of medicine.
5. All without exception are opposed to a special or separate course of lectures on alcohol, or adding to an already over-burdened course and given "under importance" to the subject.

*The following is a synopsis of the annual address delivered before the society at Atlantic City, June 7, 1907.

6. All differ as to the relative importance of the subject, as compared with the other branches of medicine as taught in the schools. Some are more thorough in laboratory work and experimental therapeutics and instruction concerning alcohol than others.

7. As a rule, each professor teaches the subject from his own individual standpoint; no concert of action, or uniformity of opinion.

8. The larger and leading colleges are far in advance of the smaller schools, especially in laboratory and research work and experimental therapeutics, probably because they have greater facilities for demonstration, a more extended session, and therefore a fuller and more complete course.

Conclusions drawn are these:—

1. That the average medical student is far in advance of the average medical practitioner of the past or of the present who has not had his advantages or made for himself a special study of the nature and properties of alcohol and its relation to alcoholic medication.

2. That this knowledge is limited to the graduates of the medical schools in which such instruction is given.

3. That the responsibility of shaping the views of the medical practitioner of the future, as to alcoholic medication, rest largely, if not entirely, with the medical schools in their relation to the medical student.

Finally, in conclusion, the "American Society for the Study of Alcohol and Other Narcotics" desires to recognize the favorable attitude of the medical schools, to instruction concerning alcohol in relation to medical practice, not only as practically endorsing the work of this society along educational lines in this particular, but also the vast importance of their position toward not only the medical profession, but also indirectly to the civic and social problems of the day necessarily involved in its consideration.

We also desire greatly that these medical educators, on this specialty, do not confine their instruction to the class room alone, but outside of as well as under institutional conditions. They give to us in society, in conventions, or through medical literature, the result of their investigations, and especially original research, and with us to still further advocate instruction in the medical schools concerning alcohol in its relation to the practice of medicine.

THE INFLUENCE OF ALCOHOL UPON THE BODILY DEFENSES AGAINST DISEASE.

By David Paulson, M.D.

Supl. Hinsdale (Ill.) Sanitarium.

One by one solid, substantial, scientific facts are being forged into links in the long chain of convincing evidence that the sum total effect of alcohol is far more disastrous to the human body than it is beneficial.

Years ago it was shown by actual tests measured by a dynamometer that the use of alcohol, instead of increasing muscular strength as had been supposed, actually lessened it.

Then came Krapelin's inconceivable experiments demonstrating that as small a quantity as one-third of an ounce of alcohol produced depressing physical effects which were capable of demonstration by instruments of precision. These results, obtained from a careful study of the influence of alcohol on the muscles, brain and nerves naturally suggested similar effects upon nutrition and also upon the various protective defenses of the body against disease.

Years ago, Boix, after conducting an extensive series of observations, concluded that the sclerotic changes that were formerly attributed to alcohol directly were in reality largely due to the absorption of an increased amount of various toxins resulting from the increased gastrointestinal disturbances induced by the use of alcohol.

Reid Hunt has recently reported that he found when alcohol was given to rabbits the ethereal sulphates instead of being one to two per cent. were increased to thirty or thirty-five per cent. of the total sulphates.

Accumulating evidence compels us to believe that many of the common chronic diseases, including pernicious anemia and possibly to a certain extent even cancer, are markedly influenced by, if not to a large extent actually due to the constant absorption of excessive quantities of gastro-intestinal toxins.

As at present as never before the searchlight of modern science is being focused upon the tissues themselves, there is revealed to us the tremendous importance of nutritional processes. As Starling expresses it, digestion only furnishes the nutritive bullion from which intracellular digestion must make the real currency for the use of the tissues.

This intracellular digestion is closely identified with those bodily defenses against toxins and bacteria. In view of this some recent investigations made by Reid Hunt of the Public Health and Marine Hospital Service of the United States become of intense interest.

These experiments revealed modifications in the bodily physiological processes from repeated doses of alcohol given in too small quantities to produce the least indications of intoxication. Over considerable periods of time alcohol in gradually increasing amounts was added to cats fed to mice, then the amount of acetonitrile necessary to kill these mice was ascertained, and the interesting observation was constantly noted that it only required about one-half the amount of acetonitrile to kill the mice which had received these moderate quantities of alcohol with their food as was necessary to kill the mice which had been fed on oats free from alcohol. When little larger amounts of alcohol were given to the mice it only required one-third the dose of the drug necessary to kill as compared to those which had not received alcohol. That this effect was not due to any lack of nutrition was made evident from an experiment in which mice were only fed a limited amount of food for a certain period of time, and when the nitrile was injected they recovered from four times the dose which caused death in the alcohol-fed mice.

Guinea pigs were subjected to the same experiment and it was likewise found that alcohol in so small quantities as to produce no noticeable physical effects whatsoever, nevertheless increased their sensibility to acetonitrile just as it did in the mice.

Many have been led to believe that small quantities of alcohol were regarded by the body as a food in just the same sense as sugar and

fats, but Reid Hunt found that when mice were fed oats soaked in a solution of dextrose, instead of showing the decrease of resistance to acetonitrile that was noted in the alcohol-fed mice they were actually able to tolerate increased quantities of the drug.

These experiments are too recent to justify us in drawing definite conclusions, but they certainly at least suggest, in the words of the experimenter:

"It is believed that these experiments afford clear experimental evidence for the view that extremely moderate amounts of alcohol may cause distinct changes in certain physiological functions and that these changes may, under certain circumstances, be injurious to the body. The results also afford further evidence that in some respects the action of alcohol as a food is different from that of carbohydrates, and finally that in all probability certain physiological processes in 'moderate drinkers' are distinctly different from those in abstainers."

It would seem that no experiment could demonstrate more conclusively the demoralizing influence of alcohol upon the defensive agents of the body in acute infectious diseases than the investigations made by George Rubin, pathologist, Rush Medical College, and reported in the *Journal of Infectious Diseases*, May 30, 1904. He studied the influence of alcohol ether and chloroform upon animals who had been subjected to various experimental infections.

Into a rabbit having a leucocyte

count of 8,600 was injected hyperdynamically 1 c. c. of fresh streptococcus culture; the next day the leucocyte count was 15,400; the following day 23,300. This rabbit made a good recovery.

At the same time another rabbit of practically similar weight, having a leucocyte count of 8800, was given 4 c. c. 95 per cent alcohol and then 1 c. c. of streptococcus culture; the next day the leucocyte count instead of increasing had fallen to 7000 and the following day it was 7900. Ten days after inoculation this rabbit died in a cachectic state.

Another rabbit with a leucocyte count of 10,500 was given 1-1-3 c. c. pneumococcus culture; the next day its leucocyte count had risen to 11,400, the following day it increased to 18,600. This rabbit recovered without any serious trouble.

At the same time there was injected into another rabbit whose leucocyte count was 14,000, 3 c. c. of alcohol and 1 c. c. of pneumococcus culture. This rabbit lived only twenty-two hours and immediately after death its leucocyte count had dropped to 1,000.

I have only selected a few of the many cases of this interesting set of experiments which Rubin reports, but in every case the narcotized animals died, and in those cases where the control animal died they always survived their fellows a certain length of time and gave evidence of resistance to infection in a higher leucocyte count and by other physical signs.

Rubin obtained the same result when ether form or ether was used.

These experiments admirably confirm the belief that has been entertained by a rapidly increasing number of the leading men in the profession, that alcohol instead of assisting the patient who was suffering with some serious infectious disease really served to destroy his only chance for recovery. And one cannot but cherish the unpleasant suspicions that thousands of pneumonia patients to whom have been administered liberal doses of alcohol have as a consequence joined the silent majority as the poor rabbits did, because they did not have sufficient resistance to deliver them from not only the infection but also the toxic effects of the alcohol.

After Rubin had noted the depressing effects of alcohol of leucocytosis, he occasionally observed some cases where the animals died with a fairly high leucocyte count, and the idea suggested itself to his mind that perhaps the alcohol also lessened the ability of the leucocytes to pick up the germs. So carmine was injected into the peritoneal cavity of a rabbit, and twenty-four hours later upon examination of some peritoneal exudate it was found that 14 per cent of the leucocytes contained carmine particles, some of them having as many as 8 or 10 particles. At the same time a similar rabbit was narcotized with alcohol and a similar amount of carmine was injected. Twenty-four hours later only 6 per cent of the leucocytes had taken up any carmine particles.

These results led Rubin to investigate the number of leucocytes in a

series of sixty confirmed drunkards, and he found it to average 5300 instead of the normal of 7500. He also found that the periodical drunkards in this list had 1400 more than the steady drunkards.

This interesting investigation suggests that alcohol not only cripples the leucocytes but also the leucocyte-producing organs.

An editorial in the *Journal of the American Medical Association*, in commenting upon these experiments states:

"With many physicians alcohol has always been the standby in septic conditions. Patients with septicemia are filled with whiskey, despite the depressant effect of large doses of alcohol, as if the alcohol was expected to either kill the bacteria in the circulation or at least to neutralize their toxins. . . .

No one will question the greater mortality of pneumonia in alcoholics as compared with that in normal individuals, and pus infections usually procure with excessive violence in patients with delirium tremens; in general, chronic alcoholism to lower decidedly resistance to infectious diseases. It is therefore quite reasonable to question the idea that acute alcoholic intoxication will protect against these same infections."

Snel has shown that alcohol will even suspend immunity that has developed against a specific microbe, and Metchnikoff mentions an investigator who succeeded in killing by cholera infection guinea pigs who had been highly immunized against this disease, by merely giving before the inoculation a preliminary

injection of small quantities of tincture of opium. This retarded the phagocytic action sufficiently to make the animals lose their immunity and render them an easy prey to the vibronic infection.

Metchnikoff offers the following comments upon the influence of alcohol on immunity against infection:

"Although the phagocytes belong to the most resistant elements of our body, yet it is not safe to count on their insensibility towards poisons. We have seen how they are harmed even by small doses of opium. . . . It is well known that persons who indulge too freely in alcohol show far less resistance to infectious diseases, especially to croupous pneumonia, than abstemious individuals. The vaccinations against the hydrophobia carried out on persons bitten by mad animals are almost always successful; but those cases in which the treatment does not stop the outbreak of the disease are most frequently observed in individuals addicted to alcoholism.

"In pursuance of this observation, Delcarré, of the Pasteur Institute in Lille, has undertaken a series of experiments, which have proved to him that the absorption of alcohol is without a doubt a grave obstacle to the immunization against hydrophobia. At the same time he found that rabbits to which he administered alcohol in the course of immunization against anthrax died of this disease, whilst the control animals, which were given no alcohol, could be vaccinated without any difficulty

"About has confirmed these experiments by proving that animals, if subjected to the influence of alcohol, became more sensitive to the harmful effects of several microbes, such as streptococci, staphylococci and bacterium coli. Later on, Laitinen carried out a great number of experiments from the same point of view and with similar results. Our interest centres mainly in his experiments on the vaccination against anthrax. To a number of rabbits alcohol was administered for several days in succession; they were then injected subcutaneously with a small dose of the first vaccine of anthrax. Six animals thus treated died after a more or less prolonged illness; all of these contained anthrax bacilli in their blood and organs. Of four control rabbits which received the the same dose of the same vaccine, but to which no alcohol had been administered, only one died, whilst the other three enjoyed perfect health. Several other experiments furnished similar results.

"Alcohol therefore suppresses the natural immunity of rabbits towards the first vaccine of anthrax. This impairment of their resistance was manifested by the inactivity of their white blood cells; thus the bacilli were permitted to multiply without being checked by a sufficiently strong phagocytic reaction. . . . Besides its deleterious influence

on the nervous system and other important parts of our body, alcohol therefore has a harmful action on the phagocytes, the agents of natural defense against infective microbes. . . .

"As a logical consequence of the experiments on the weakening of immunity under the influence of alcohol, it has been suggested to eschew this substance in the treatment of infectious diseases. Without wishing to enter into a discussion of this question . . . we must strongly insist on the danger of alcoholism with regard to the resistance against pathogenic microbes."

In view of these unquestionable facts which have been developed by the most painstaking experiments, is it not self-evident that the physician who depends upon alcohol in the sick-room leans upon a broken reed? It is clear that the body regards alcohol not as an aid in its struggle for existence but as a dangerous foe. As the body is compelled to fight this enemy its opsonic index may be temporarily increased, and there may be other similar indications of the struggle thus provoked just as there is when it is compelled to wage a warfare against any other toxins. But such evidence will never lead the observing student of Nature and her operations to blindly conclude that they represent anything other than a definite resistance to a toxic agent.

THE MODERN SCIENTIFIC CONSIDERATION OF ALCOHOLIC AND OTHER NARCOTIC HABITUDES AND THEIR TREATMENT.*

By G. H. Renton, M.D., Chester, West Virginia.

It is with a feeling of extreme regret that we are compelled to note that on the part of a large element of the great and noble medical profession, the absolute absence of any rational consideration for a class of patients who present either as primary diseased conditions or as complications of other diseased conditions a very serious aspect and who represent by far the largest per cent. of all cases which are treated by the profession.

I refer to that class of patients who use alcohol and other narcotic drugs to excess. I shall make no reference here as to what amount of such drugs may constitute an excess, as the personal equation of different individuals varies so materially in regard as to the degree of effect produced by the same amount of drug consumed, and it is controversies of this kind, useless to themselves as argument frequently leads only to confusion, which distract the attention of worthy physicians from the consideration of these classes of patients, much to their prejudice.

There are also numerous other reasons more or less accountable for

this absence of consideration on the part of the profession for the narcotic addict, the eversion stimulated by disgust from the objectionable symptoms of the habitue engenders a lack of interest. The wrangling and useless arguments of scientists over disputable points in reputation to dosage and use of certain narcotic drugs as well as an attempt to prove that these drugs known to be protoplasmatic poisons may or may not possess food values, etc., all of which tends to confusion and assists in the mental rejection of other demonstrable facts of importance, the biased aspect assumed as the result of a gross misunderstanding of the personality of the habitue and a lack of knowledge of the immediate connection of the psychological phenomena with somatic functions, together with many other major and minor causes through the influence of which have deterred the physician from a close study of the personality of the habit former.

Current nomenclature in relation to descriptions of the conditions expressed in inebriates both by the medical profession and the laity has been extensive and is so misleading that in the mind of a vast majority of intelligent people

erroneous impressions and ideas are prevalent which result not only in confusion but many times in an out and out misunderstanding of the actual conditions prevailing in the ego of individuals who become inebriated by drug narcotics. Only recently an intelligent physician remarked to me that he could not convince himself that drunkenness was a disease. After a little explanation he readily admitted that drunkards, or all of them which he had occasion to examine, presented more or less diseased conditions, and that while many of these diseased conditions were directly traceable to the inimical action of alcohol since addiction, some of them gave evidence of having been either congenital or acquired prior to addiction. It is a well known fact that hereditary neuroses may give expression in a variety of conditions influenced by environment. Therefore if instead of saying abruptly that drunkenness is a disease, we affirm that drunkenness or inebriety by drug narcotics is an expression of morbid conditions, I think it may be more easy of mental digestion and excite a lesser feeling of opposition.

Again, only recently a leading medical journal by one of its editorial writers asserts in bold front type that "Alcohol is not the cause of alcoholism. This is the conclusion to be drawn from some of the recent discussions on this much vexed subject," etc., and all through the two-page editorial this writer, from the choice of nomenclature, creates false impressions. The article

was freely quoted from by at least one of the widely circulated lay publications which exploited the article under the head of Science and Invention. Now if alcoholism is not the direct and absolute result of the use of alcohol, then much of our medical literature, text books and dictionaries need much reorganizing. The fault appears that the editorial writer intended to discuss inebriety but called it alcoholism. Therefore the general but misleading expression of thirst in explanation of the desire for liquid narcotics has established in the mind of people that this so-called thirst is a demand on the part of body for fluids, and that as the victim resorts to fluids containing narcotics it signifies natural vicious tendencies on the part of the inebriate, now when it is made apparent that this so-called thirst is not thirst at all, but a desire for narcosis and with all in reality is only a morbid mental phenomena, then much of the confusion, misunderstanding and absence of consideration for the inebriate will disappear.

From the well known multiplicity of long established causes prevalent almost from time immemorial every nation and every people have become extensive habitual users of narcotic drugs, different races or communities selecting some particular narcotic to which they may become more especially habituated influenced largely through environment and otherwise from the hereditary or acquired physical status expressed by a nation or people, as both individually and nationally dif-

* Read at the annual meeting of the Association at Atlanta, Ga.

ferent narcotics seem to appeal to and furnish a particular degree of satisfaction commensurate with the different physical and nervous status expressed by a people, as is suggested by the fact of the extensive use of absinthe among the especially neurotic inhabitants of the French nation, also the selection of cocaine almost invariably, expresses a special choice on the part of the sexual pervers, which indicates that cocaine narcosis more fully meets the demands of their perverted conditions, while the acute brain worker most usually resorts first to morphia, but as the habit continues and upon the failure of the morphia in the same or larger doses to produce the same degree of desired effect, they may add the use of one or more of the other narcotics.

This, therefore, suggests to the careful observer an individual personality of the habit former; which investigation shows to be the natural result of established causes; with which you all are familiar; and of which heredity, environment, education, etc., are leading factors.

This individual personality of the habit former if properly recognized means much both to physician and patient in the ultimate results of treatment, and a thoroughly close study of the personal and family history of the patient. The aetiology of all diseased conditions, if such existed prior to addiction, as well as the pathological findings present subsequent to addiction which necessarily influence the personality of the habit former, are the first premises on which to base the considera-

tion of this class of patients. Remembering, of course, that many habits were mental, moral or physical degenerates before acquiring narcotic habits, consequently the more need of careful conscientious consideration on the part of the medical profession for these unfortunate which are so prevalent in every element of society.

It is unnecessary before this body to repeat the etiological bearings and pathological factors which enter into the production of these diseased and perverted psychic and somatic conditions as your daily study and long experience with these classes of cases have long since established in your minds the natural consequential relations of cause and effect. But among a large element of the medical profession who have not given special study or attention to mental and nervous diseased conditions, and who, because of their failure during their college life or during subsequent researches to separate with the scarp the human soul from its somatic habitation as so many grams of concrete matter; have therefore missed much of the true relationship and force of psychic influence and power over somatic functions, and who have regarded moral obliquity as an expression of premediated vicious tendencies instead of carefully considering the possibilities that much of the moral obliquity expressed in humanity in general may be symptomatic of distorted psychic functions through defective and degenerated brain cells and nerve centres, influenced by environment, by education both direct-

ly to and through the influences of vicious and criminal practices, as well as from the lack of education against habits and other influences which tend toward moral obliquities, also the modern dollar mania, speed manias, and the mania of self aggrandizement, and the mental palsies and insanities resulting from the absorption of toxins and alexins generated in the system as the result of infectious diseases and from the accumulation of bacterial products, and the numerous hereditary defects and degenerations; or from any other causes which tend to lower the standard of the physical and psychical integrity of the individual.

An old adage asserts "that perfect manhood is represented by a perfectly commensurate mental, moral and physical development," and yet among the eighty millions of people in our own country how scarcely do we find this commensurate development, and to what cause or causes may we attribute the unfortunate prevalent conditions?

In answer to this question comes to my mind another question, viz.: Shall vice and vicious tendencies be considered as vicious accomplishments or are they symptoms of psychic and somatic pathology?

If vice is a vicious accomplishment only, then legal therapeutics with detention and punishment are applicable, but if vice and vicious tendencies are a symptomatic expression of psychic and somatic pathology then the necessary and advantage of much careful consideration and study on the part of the medical profession is apparent; en-

abling us to arrive at the proper conclusions and select a rational line of treatment for the restoration of these classes of cases to normal, physical and psychic functions.

Starting with the hereditary equalization of defective and degenerated organic and nerve functions; which endows the individual with unequal advantages and militate against the defence lines of the reserve forces of the body, then subjecting these patients to the influence of environment such as usually surrounds neurotics and neurasthenics and one will find a most fertile hotbed in which to germinate the seed of psychic and somatic diseases.

Customs, whether moral or vicious are more or less contagious, and habit includes a more or less involuntary tendency and when strengthened by frequent repetition offers more resistance many times than reason, duty or expediency, thus the influence of environment may be the only element necessary, if long continued, to engender a start toward narcotic habits. The psychic impression created in the mind of the unwary by the expressed joy and good feeling of a toper over his cups is sufficient to outbalance the warning of impending danger so forcibly expressed in the degenerated condition of the toper, and thus the unsuspecting or egotistical youths are induced to make trial for themselves resulting soon or eventually, according to the personal equation of the individual, in a morbid desire for mild or profound narcosis. This desire for alcoholic narcotics is called thirst; erroneously however,

as this so-called thirst is only a morbid degree of a purely mental phenomenon, and is more arduous in its demands than hunger, while this psychic force of this morbid mental phenomena by outbalancing the normal reasoning faculties degenerates man first to the equivalent of a child, then a beast and eventually renders him abulic, sexual and a profligate.

Thus we see that habitual drug narcosis or inebriety, results in moral insanities and is therefore a psychic as well as a somatic disease.

The etiology and pathology of these diseased conditions express the widest degrees of variations as well as the greatest divergence of complications present and these complex conditions associated with the personal equation of each individual patient demands the employment of extensive and varied remedial measures even as applied to a single patient.

I am impressed that the lack of proper consideration on the part of the medical profession primarily toward these classes of cases, and the selection of a too stereotyped and restricted range of therapeutical measures employed, largely due to our seemingly natural tendency to adhere to or select from our remedial measures so-called specifics for the relief and cure of these patients that there are no specifics for the cure of Inebriety, it is not the result of a specific infection, but is a diseased condition which presents a

vastly varied pathological aspect with numerous and equally varied complications, and that this diseased condition presents a psychic as well as a somatic pathology; consequently rational treatment would suggest that the selection of such remedial measures should be made from the entire range of the full therapeutical gamut as the conditions of each individual patient demand.

Therefore drug-therapy, electro-therapy, balneo-therapy (including thermo and hydro-therapy) mechanical vibratory stimulation and massage and with all and above all psycho-therapy, may advantageously enter into the treatment of these cases in anticipation of the best and most permanent results.

In conclusion I wish to express not only the advantage and value of psycho-therapy as a remedial measure, but its necessity, both implied and expressed is daily becoming more and more apparent as a rational therapeutical measure.

Psycho-therapy has been used in the treatment of these patients by both reputable practitioners and charlatans both intentionally and unconsciously with more or less beneficial results. Why not then with a scientific understanding of the use and application of psycho-therapy in connection with all the other remedial measures, should it not prove most essentially beneficial, as with its use we are combating psychic pathology with psychic therapeutics.

THE INFLUENCE OF ALCOHOL ON THE OPSONIC POWER OF THE BLOOD.

By Chas. E. Stewart, M.D.,

Professor Theory and Practice of Medicine, American Medical Missionary College.

That the *viz medicatrix natura* is our chief aid in our efforts against disease is recognized by every successful practitioner of medicine, and anything that will help us to secure this condition in its fullest degree will be gladly welcomed and given first place in our therapeutical armamentarium. We are well aware that many diseases are self limited and if left alone will run their course and finally a normal condition of health obtain; in fact, not infrequently as far as the disease from which the patient suffered is concerned, his health is above par. If such an expression is permissible, for there has been established a condition of immunity which makes the patient much less susceptible to the disease than before he contracted it. Thus we see that the body has within itself certain resources which can be called upon to assist in securing and maintaining a healthy condition.

In the majority of acute diseases these resources are sufficient, and in those cases in which they are not, it is probably due to the fact that the vital forces of the body were at such a low ebb at the time of the onset of the disease, or have become so during its course, that the tissues are incapable of producing the necessary protective substances. That the body has somewhere within its

confines the ability under favorable conditions to produce protective substances which render the organism capable of combating diseased conditions has been recognized for a great many years, but it has only been within a comparatively short time that any exact information concerning this interesting fact has been obtained.

In endeavoring to become familiar with these agencies which have to do with the restoration and maintenance of health, the blood naturally suggests itself as being the chief medium through which these agencies act. "The blood is the life," and is the medium in which the life-giving principles of the food we eat and the air we breathe are conveyed to every part of our bodies, and in turn it assists in the removal of the wastes incident to the oxidation which is constantly taking place. In addition to these important functions it also acts as the chief healing and protective tissue of the body.

Since the discovery that bacteria in many instances cause disease, some very important facts have been demonstrated whereby the blood has been shown to play an important rôle as the chief natural defense in protecting the body against disease. It has been clearly demonstrated by Metchnikoff and many others that

the leucocytes of the blood play an important part in ridding the organism of bacteria which so frequently gain entrance. The fact that in most infectious disorders there is an increase in the number of leucocytes, and that in many instances the specific bacteria have been found in large numbers in the leucocytes, naturally gave rise to the theory that the leucocytes were the principal agents concerned in protecting the body against disease by their phagocytic action.

Twenty years ago Nuttall and Pfliuger demonstrated that the blood contained some substance which was capable of destroying some forms of bacteria.

In 1895 Leclief and Denys were the first to call attention to the influence exerted by blood serum on the phagocytic action of the leucocytes. By their experiments they demonstrated that the blood-serum contained some principle which acted upon the bacteria in such a way as to render them more susceptible of being acted upon by the leucocytes, thereby materially increasing phagocytosis.

In 1897 Mennens demonstrated that the immunity conferred upon certain animals when inoculated with immunizing sera or bacteria depended upon a modification of their serum in such a manner that as a result a more liberal phagocytosis was brought about without any special activity on the part of the leucocytes. That there are several substances in the blood which induce bacteria in such a way as to destroy them or render them capable

of destruction by the leucocytes has been amply demonstrated. The name agglutinin has been given to the substance formed in the blood as a result of bacterial invasion and capable of causing an agglutination of the bacteria producing the infection. The term paralysis has also been used to designate the same principle. Such a principle is found in the blood in cases of typhoid fever, and is the basis for the Widal test which is rendering such valuable service in the diagnosis of this disease. Substances which combine with the bacteria and accomplish their destruction, and designated as bacteriolysin, are found in the blood as a result of bacterial invasion.

Still other substances are found which seem to have a special affinity for the bacterics, combining chemically with them so that they are much more readily taken up by the leucocytes. To these substances the term bacteriotropic has been applied.

In 1903 Wright and Douglas, of London, England, used the word opsonin (from the Latin *opsone*: "I cook for the table," "I prepare pabulum for") to indicate certain bacteriotropic substances formed in the blood which act upon bacteria in such a way as to render them subject to ingestion by the leucocytes. They have also worked out a practical laboratory technic by means of which the opsonins can be measured with a considerable degree of accuracy, thereby making it possible to approximately estimate one's ability to resist bacterial invasion.

In order to determine the opsonic

power of a patient's serum as compared with a normal individual (the opsonic index), Wright and Douglas have made this comparatively easy. Without entering into the details of the technic it may be briefly described as follows: equal volumes of an emulsion of bacteria to be used in salt solution; washed white corpuscles, and the serum to be tested are measured in a long capillary pipette, these are thoroughly mixed, then drawn into the pipette, the end sealed in a flame, and then placed in an incubator for fifteen minutes at 37 degrees C. The pipette is then removed from the incubator, the seal broken and a drop of the mixture placed on a clean slide, and a smear made. Which is then fixed and stained. The slide is then placed under an oil immersion lens and the number of bacteria found in from 100 to 200 polymorphonuclear neutrophils are estimated, and from this the average per leucocyte is obtained. Another estimation is made in the same manner except that the serum from a normal individual is used. The ratio of the first average to that for the normal serum constitutes the "opsonic index."

Since the practicability of obtaining the "opsonic index" with a considerable degree of accuracy has been so clearly and cleverly demonstrated, numerous investigators have been busily engaged in trying to prove or disprove Wright's claim that "we have, in the power of raising the anti-bacterial power of the blood with respect to any invading microbe, out of all comparison the most valuable asset in medicine."

Since the opsonins of the blood play such an important part in assisting the leucocytes to rid the body of bacteria, it will be readily inferred that any substance which, when introduced into the body, is capable of modifying this index, will either increase or decrease its vital resistance and, in so doing, will be a factor in combating or inviting disease.

To those substances which when introduced into the organism increase the elaboration of protective substances the term vaccine has been given. In many instances these vaccines are derived from bacterial protoplasm.

Wright and Douglas have discovered that by the administration of bacterial vaccines, in many instances the patient's opsonic index can be raised, and as long as the index can be kept at a normal point or above, the prospects for ultimate recovery are good. However, the converse is true that any substance, whether bacterial vaccine or drug, that is introduced into the organism, lowers the opsonic index and by so doing lowers vital resistance, thereby inviting bacterial invasion, lessens the chances for recovery. Professor Wright further states that "there exists in normal blood, and there exists in a larger quantity in the serum of the successfully inoculated patient, an element which enters into chemical combination with the staphylococci, the tubercle bacillus, or other microorganisms in such a manner as to prepare it for phagocytosis. We have demonstrated that phagocytosis cannot take place, apart from the action ex-

erted by the specific opsonin upon the micro-organism." Just how these opsonins are produced is not known, but when we find a patient's specific opsonic power persistently low, we are justified in concluding that he is not improving, and we realize that more opsonic power is needed in order to render the invading germs favorable for ingestion by the leucocytes. In most cases of bacterial invasion an increase in the number of leucocytes is greatly to be desired, but an increase in the opsonic power of the blood is still more important; for, as Professor Wright has said, "we have demonstrated that phagocytosis cannot take place, apart from the action exerted by the specific opsonin upon the micro-organism."

Therefore a patient suffering from some acute infectious disorder, such as lobar pneumonia, in whose blood there is a good degree of leucocytosis and whose specific opsonic power remains normal or above, can safely be considered as making satisfactory progress toward recovery, and any measure which will encourage and maintain such conditions should be considered eminently satisfactory; and conversely, any measure which will more or less permanently lower the specific opsonic power of the blood, must be considered as inimical to the welfare of the patient and should be abandoned at once.

Without entering into details, we have in these few paragraphs endeavored to outline the fundamental principles pertaining to the determination of the opsonic index and the practical value of this knowledge as

applied in the treatment and prevention of disease.

A few weeks ago it was the good fortune of the writer to meet Professors Wright and Douglas and to become somewhat familiar with their work in St. Mary's Hospital, and we must say that if the results to be obtained from the practical application of this theory are commensurate with the enthusiasm over the results already obtained, especially by Wright and Douglas, there has dawned a new era in the treatment of disease and in prophylaxis which is unsurpassed by any previous line of therapeutics, and we are in full accord with the statement of Professor Wright already quoted to the effect that "we have, in the power of raising the anti-bacterial power of the blood with respect to any invading microbe, out of all comparison the most valuable asset in medicine."

During a lecture by Professor Wright, in considering the agencies which modify phagocytosis, among others he mentioned alcohol, and stated that the leucocytes were "anti-tense" because, when freed from blood serum and then soaked in alcohol, phagocytosis is increased. This statement greatly surprised me, for from practical experience with diseases such as tuberculosis and pneumonia, where phagocytosis plays such an important part in ridding the body of bacteria, I had discovered that when alcohol was withdrawn and measures instituted to encourage leucocytosis, and improve the general vital resistance, such as the cold air treatment, tonic hygienic measures and plenty of sun-

shine, marked improvement was noted. I recalled the statement of Professor Wright, that "phagocytosis cannot take place apart from the action exerted by the specific opsonin upon the micro-organism," and concluded that in all probability the evil effects of alcohol were due to its lowering the opsonic power of the blood.

In order to determine the facts with reference to this the medical literature was carefully searched, but nothing was found pertaining to the influence of alcohol upon the opsonic power of the blood in the living organism. A series of experiments were at once instituted for the purpose of ascertaining, if possible, what influence the administration of alcohol has upon the opsonic power of the blood in healthy individuals, and while in the short time which has elapsed since they were started, only a comparatively few have been performed, the results obtained so far are quite uniform, and we believe justify us in making this preliminary report, with the hope that it may be a means of encouraging others to pursue the work further in this direction, and if possible help to demonstrate the truth with reference to the influence of alcohol upon the *vis medicatrix naturae*.

Rubin (The Influence of Alcohol and Chloroform on Phagocytosis in Vitro, Jour. A. M. A., Vol. XLVIII, No. 17, P. 1432, Apr. 27-07), in his study of the effect of alcohol in vitro, employed the following technique: "Suspensions of various bacteria, especially staphylococci, pneumococci and streptococci are added to def-

brinated dog blood containing alcohol or chloroform in varying proportion, the tubes are then carefully corked and placed in an incubator at 37 degrees C for 30 to 40 minutes. Then smears are made and the bacteria in the leucocytes counted and averaged. In every case control experiments were made with mixtures of normal blood and bacteria. The accompanying table illustrates the results obtained when alcohol was added in varying proportions.

Degree of dilution with alcohol	Bacterium	Control	Alcohol
No. 1 1 to 1000	Staphylococcus	45	5.5
No. 2 1 to 500	Staphylococcus	27	14
No. 3 1 to 200	Streptococcus	11	3
No. 4 1 to 100	Streptococcus	11	1
No. 5 1 to 50	"	26	4
No. 6 1 to 20	"	9	0

From these experiments it will be seen that one part of alcohol to fifty of serum suspends phagocytosis in vitro completely, and even in such dilutions as one part of alcohol to 500 of serum phagocytic action is reduced 44 per cent.

Our own investigations have been confined to the action of small amounts of alcohol administered internally to persons whose normal opsonic power was .75 or above and who were previously total abstainers, and to the influence of alcohol on phagocytosis in vitro:

INFLUENCE OF ALCOHOL, INTERNALLY ON THE OPSONIC POWER OF THE BLOOD.

Normal indices	Indices after 2 ozs. of port wine
No. 1 H. P. T. B. 113	T. B. 85
Strepto 109	Strepto 67
No. 2 L. K. T. B. 130	T. B. 79
Strepto 135	Strepto 41
No. 3 A. W. N. T. B. 121	T. B. 39
Strepto 125	Strepto 76
No. 4 G. D. T. B. 117	T. B. 96
Strepto 98	Strepto 78

It is an easy matter to overcome the symptoms of drug usage, whether by rapid or slow methods, is in this connection unimportant. Unfortunately, a great many physicians regard the drug habit as freed, from immediate symptoms of its usage and free from its use altogether for a few days or weeks or months, as the case may be, as a "cured" individual. We hear and we read a great deal of the remarkable cures effected in a few days by this, that or the other rapid method; in fact I have heard the assertion made that the drug habit is "cured" whenever he is freed from its usage consistently and habitually if only for a few days, (moreover made upon the floor of the A. M. A. meeting by a gentleman from Cleveland who is reputed to be making an exclusive study of the cure and treatment of such cases.) I venture to dispute the validity of such a doctrine now, as I did then. In a few instances—small in comparison with the total number—persons once freed from drug and alcohol slavery remain forever free. Sometimes, even, this freedom is gained in a few days or a day or an hour. But on this ground to set up the doctrine of "cure" is, in my opinion, quite unjustifiable and its teaching worse than that. It is wholly wrong and pernicious. If we are to regard habitual drug and alcohol inebriates as "cured" when the habit is for a few days broken and the system relieved of more or less of its immediate effects, then we have nothing further to discuss. The question would then be solved and the case

cured as would be a case of pneumonia or malaria or multiple acute arthritis. But, gentlemen, have we the right to assume addition to this or that drug to be in any way comparable to such diseases? Is it not much nearer the truth to look upon the "habit" as a revelation of something much deeper-lying, much more difficult to overcome? And herein lies the relationship of the first principle advanced—namely, that we should look upon drug addiction as the expression of a more or less continuous vice, or at least, vicious tendency. A study of the etiology of any large number of habitual alcohol and drug users reveals several things of great import in this connection.

We find a comparatively small percentage of individuals who have grafted the "habit" upon a purely physical malady, associated with pain. In the very beginning, it was a medical measure which prompted the administration of the drug to relieve distress. With each recurrence of pain, there was a repetition of this relief measure until the physician made the fundamental error of giving the patient a prescription, placing the drug in the hands of the patient for his own use. Right here I wish to voice the sentiment, that no doctor has any shadow of right to do such a thing, save and solely in a fatal malady, and then only when the patient is in *extrema*. Matters are worse still where sleeplessness is in play. Opium and its derivatives have unquestionably an important place in therapy, correctly and definitely used and with well-

defined purpose, but with the sole exception above noted, I can find naught but censure for the physician who allows the control of the situation to pass out of his own hands. In a considerable number of instances of this class, a respectable per cent. ceases the use of the drug with the cessation of the indications provoking its primary employment; a rather larger per cent. reverts to its re-use upon the slightest distress; and a still greater per cent. stays with it for the false stimulation it gives. The latter are those who finally fall into this inquiry. A second and bigger category comprises those who first flinchingly help themselves to the stuff to tide them over the storm and stress periods of existence "to keep themselves in harness." In other words, these individuals find it difficult to keep up with the race, to stand the pace which life all about them has assumed or is assuming. They feel themselves unfit and losing their grasp on things. As a matter of fact, they never did have any noteworthy grasp, they never were among the fit and strong. As a matter of fact, despite a small measure of success in this or that or the other business or profession, they had all their lives or nearly all, been clinging to fictitious helps; been seeking relief for every little mental or physical distress; been always pandering to their own emotions and desires. These individuals—and there are vast numbers of them—are fundamentally hysteroid and paranoid. In other words, they present a psychic warping—are mild mental de-

fectives to begin with. No one who has dealt with large numbers of habitual drug takers, but has been impressed with this hysteroid-paranoid aspect of many of them. Even when very many of them come voluntarily for treatment and have been temporarily freed, they constantly demand the one or other thing, now beer or whiskey, now coca-cola—which is about as bad as the original drug—always something that amounts to the fixed notion that this is necessary to them, quite akin to the fixed delusion of the paranoid or the stable form of hysteria. In these cases the drug addiction is merely a phase of an underlying psychosis or at least a psycho-neurosis. We therefore, reasonably speak of the "drug-neurotic."

A third and, I fear, an increasing category of drug devotees is presented by the morally decrepid. This large class uses alcohol and the drugs—nearly cocaine—wholly for the sensations they produce. They are weak and sensual to begin with; tendencies found mainly, almost wholly in cities and in the worst districts of the big cities, devoting themselves to excesses of every character. They are true moral delinquents and form a big civic problem, open to no solution of a few days of medical treatment. In them devotion to drink and drug usage is a disease, no doubt, but it is a disease of chronic type—an expression of continuous vice or vicious tendency—as much a paranoia as the ordinary type of this common psychosis. They take to this form of excess exactly as

they take to any other immoral practice.

And now let me revert to the subject of this paper. When shall we regard the drug neurotic as cured? Look at any one or all of the three classes mentioned above—first, those who have grafted the habit upon physical condition associated with pain, or sleeplessness, or both. Second—those who are battling unit against the mass of real or fancied ills of life, the hysterio-paranoiacs; and third—the morally decrepid or the morally paranoiac, to whom excess is almost natural.

The first category comprises those who react best to treatment. A few with relative ease are really cured. In every case of this kind it is essential to remove the physical basis upon which the "habit" be its nature what it will, has been superimposed. If this basis be left behind, reversion is almost sure to follow, be it in days, weeks, months or years. In the second or third classes, and they are numerically the greatest, we deal with a vastly more difficult problem. It is not here a question of a few days or even weeks of treatment. It is vastly more apt to be a question of years of systematic effort, with a big per cent. of failures at that.

Before closing, I wish to clearly state that we all cure, really cure, a certain per cent. of our drug neurotics, by the one or the other

method. But, by comparison with the total number of drug users in this country, how small is the per cent. of the devotees to the habit who actually come into our care. They represent the bulk and do a large share in teaching their habits to others. We cannot reach them. It will and does require earnest, prohibitive laws to accomplish this. While every case of drug addiction presents an individual problem, the whole question is rapidly assuming commanding civic importance, in fact has already demanded civic solution. The individual physician can do a good work in a small way, the Sanatoria can and do their work in a somewhat larger way, but it will require civic authority to solve this question in the end. When this government of States and the Union wakens to the fact that its people is rapidly being undermined in its mental and moral health by drug usage, vastly more than in its physical health by organic diseases, then my query will be answered. Until then I cannot grow optimistic. True, a beginning has been made in some States, but it is only a beginning. Meantime, I am merely replying in my own poor way to the man and to the institutions of the "quick cure" variety, who proclaim wonderful success in a day or a week. I am not deciding when the drug neurotic is to be regarded as cured. That is left largely to yourselves.

ERRONEOUS TEACHING A PROTEST AND WARNING.*

By *George E. Pelley, M.D., Memphis, Tenn.*

Some twenty or more years ago cocaine was brought forth as an antidote to morphine and was loudly praised as a cure for the morphine addiction. This resulted, not only in the drug being indiscreetly used in the treatment of the addiction, but hundreds upon hundreds of those who were addicted to the use of opiates were led by this teaching to combine cocaine with the morphine they were using with the belief that it would materially lessen the harmful effects of morphine, it indeed it did not enable them to give up that drug altogether. This teaching proved to be erroneous and the many thousands who followed it found themselves far more wretched and hopeless than when using morphine alone.

those who followed the false teachings in regard to cocaine. The addition of hyoscine to their daily portions, instead of enabling them to discontinue the use of the opiate has simply added another burden more grievous than the one from which they sought release and they now come for treatment as slaves to the morphine-hyoscine addiction.

The last candidate for this impossible office is Veronal, introduced into this country by Merck & Company. However excellent this new drug may be as an hypnotic, it will certainly prove disappointing as a preventive and cure for morphinism. It is to be regretted that so reliable a pharmaceutical house as Merck & Company could be led to make any such claim for it.

During the last five years hyoscine has been advocated by a number of medical writers as an antidote for morphine and as a specific cure for the morphine addiction. The eager longing of those enslaved by narcotic drugs for release from slavery—a desire with which they are not usually credited—has led thousands of these helpless victims to grasp at this straw with the hope that it would enable them to bridge the chasm between slavery and freedom, but these are being more grievously disappointed than were

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selves in the confidence of the profession to such a degree that any statement they make in regard to the physiological effect or therapeutic use of a remedy is accepted with almost as much confidence as if the statement were found in the works of one of our standard authors. Among the houses who have thus established themselves I would mention Parke, Davis & Co., Merck & Co., E. R. Squibb & Son, Abbott Alkathoidal Co., and H. K. Mulford. These firms have sought this relation with the profession; and as they keep physiological chemists of high standing in their employ, they should not make or assist in making a claim for any of their products which they have not fully verified. We believe that these and other reputable houses do usually conform to this rule, but, in one instance at least, undue zeal in the introduction of a product has led one of them to depart from this reasonable and safe rule.

A short time since I received from Merck & Co., a circular letter, which was evidently given wide circulation, calling attention to Dionin in coughs, etc. Enclosed with this letter was a reprint of an article by Dr. Wolfram of Erfurt (Ger.), entitled Veronal and Morphine, from which I take the following extract: "Shortly after the introduction of veronal, I observed that the very disagreeable after-effects following an injection of morphine may be obviated by first giving a dose of veronal. Since then I have repeatedly been able to confirm this observation. If a dose of veronal is

given by mouth half an hour before the injection of morphine, the disagreeable symptoms noted will not appear, with the exception of intestinal peristalsis, which occasionally persists. The relation of veronal to morphine is as 0.5 Gm. to 0.03 Gm.; that is, a dose of 0.5 Gm. (8 grm.) of veronal will antagonize the after-effects of 0.03 Gm. (1-2 grm.) of morphine. During the course of two years I have been able to prove this fact over and over again, with very intelligent patients, as well as in experiments on myself. The anodyne action of morphine is in no wise diminished. While, ordinarily, morphine sleep may be delayed for three to four hours, a quiet sleep will set in very soon if veronal is given beforehand. I had two patients who required from 90 to 120 grm. of morphine yearly. According to directions every injection of morphine was preceded by a dose of veronal, and up to the present these patients have not acquired the morphine habit. Since veronal is thus able to prevent morphinism, I believe veronal is probably also destined to play a role in the withdrawal of morphine in the case of habitues." I know nothing of Dr. Wolfram, but as Merck & Company send a reprint of his article broadcast over the country they assume responsibility for its erroneous and dangerous teachings. I have used veronal quite frequently for several years and consider it an ideal hypnotic, but I have been totally unable to verify the statement that it overcomes the harmful after-effects of morphine or in any way tends to

prevent the formation of the morphine addiction. Since reading Dr. Wolfram's article I have had occasion in several instances to administer a few doses of morphine to patients who have recently been taken off that drug. With the idea of testing the power of veronal to overcome the tendency to the formation of the habit, as claimed by Dr. Wolfram, I preceded each dose of morphine by a dose of veronal; but in every case, upon discontinuing both drugs the reactionary symptoms and the demand for a continuation of the morphine were equally as great as it is in such cases when no veronal has been given.

Suspension of peristalsis and constipation were not marked in the cases in which the veronal preceded the morphine as it usually is when morphine alone is given.

The fact that morphine checks secretion and arrests peristalsis, thus locking up the products of waste in the system, is the chief reason that prolonged use of that drug results in an addiction. The autoxemia thus induced is the essential pathology of morphinism. Since veronal does not overcome or even lessen this effect of morphine, it cannot "prevent morphinism," or to any extent lessen the danger thereof. The fact that Dr. Wolfram

says he has "two patients who have required from 90 to 120 grm. of morphine yearly" who have not formed the morphine habit, leads one who can read between the lines to the conclusion that the doctor does not form correct conclusion on this subject and that he underestimates the effects of these drugs upon those to whom he administers them. If these patients have not formed the habit, why has the doctor found it necessary to continue the administration of this drug so long? What business has a doctor experimenting on himself with half-grain doses of morphine?

We must protest against the action of Merck & Company in spreading this unfounded claim for one of their products broadcast throughout the country and warn the profession that such teaching cannot be followed without danger. Too many people are already experimenting on themselves with morphine, and falling a victim to its seductive influences without having the false hope held out to them that if they will only precede each dose of morphine by a dose of the "antidote" veronal they will be in no danger of forming the morphine habit. The promulgation of such manifestly false doctrine is inexcusable.

THE PATHOLOGY OF MORPHINE ADDICTION *

By William Francis Haugh, A.M. M.D., Chicago, Ill.

In our studies of the morphine habit, we have made the usual mistakes of looking upon the disease as a pathologic entity, a specific malady, and seeking for its explanation from the post mortem table. There are few if any diseases that can be so considered, and subjected to specific treatment. Only by studying deranged physiology in the living subject can we learn to comprehend pathologic processes in operation, and apply to them our therapeutics intelligently.

A better method of studying this disease is to begin with the first dose of morphine that is taken, note its effects and trace the progress of the case along the route it has travelled. This first dose may cause some primary stimulation, with euphoria, and it also checks the intestinal secretions and excretions, paralyzes peristalsis, and effectually inhibits the whole group of digestive functions. Elimination through every channel is suspended; and the toxins, which are constantly being formed through the operation of the metabolic processes, are retained in the body. On the following day the patient suffers various morbid phenomena, such as headache, anorexia, depression of the bodily and mental forces, and some of the host of indeterminate discomforts known under the name of "malaise." In these we have

lately learned to recognize the effects of a superabundance of autogenic toxins, that have accumulated in the body, are now being thrown into the circulation, and carried by the blood to every tissue and cell within the reach of the vascular system. At the points of lowest vital resistance these toxins manifest their deleterious action by some disorder of function. It is not because these toxins have been retained in the body through the influence of morphine, but because they have become active when the effects of this drug have subsided, that these symptoms appear. Two modes of relief are possible—the eliminants may be stimulated to carry the toxins out of the body, or another dose of morphine may lock them up in the cells and stop the outflow into the circulation.

Each dose of morphine that is taken, therefore, renders the next one more imperative. This goes on until enormous quantities of toxins are stored in the cells, while the bowels become packed to their limit with dry fecal masses, the daily evacuation being merely the overflow. Whenever the morphine is omitted discomfort at once results, owing to return of sensation in the paralyzed nerves, and to the discharge of toxins from the cells into the blood. To the resulting conditions has been assigned the term, "withdrawal symptoms." We may

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advance the proposition that these simply indicate an autotoxemic state; and that relief can only come from the renewed influence of morphine or from the elimination of the toxin surplus. If this be correct, it clears away the fogs of ignorance, mystery and superstition, and plants our feet upon firm ground whence we may intelligently advance to an effective therapeutics.

Practically this is all there is to the morphine habit *per se*, but we may find evidence of serious underlying disease when the morphine mask has been lifted. I do not look upon dysmenorrhea or neuralgia as a sufficient excuse for the continuance of the morphine habit; but would scarcely advise the discontinuance of this drug to the victim of cancer, diabetes or advanced tuberculosis.

Taking the foregoing conception of the disease as a working hypothesis, we will apply to it our therapeutic measures. We begin by emptying the bowels. Here much caution is requisite, for when the mucous membrane has long been in contact with retained fecal masses it is readily thrown into a state of septic inflammation. A small dose of some saline laxative should be administered every two hours, and aided by colonic flushes with warm saline solution. If the fecal impaction is very dry and hard I have once or twice injected pure kerosene, a pint or more, and have found it remarkably devoid of irritating qualities and effective in penetrating and liquefying these masses. When the bowel has been emptied of all an-

cient deposits, and only then, we may give a full dose of castor oil to clear away the remainder.

This being done we commence to stimulate the liver to throw off the enormous quantities of toxins stored in its cells. The best remedy for this purpose is emetine. Permit me here to explain: Ipecacuanha contains two alkaloids, emetine and cephaeline. The latter is an acrid irritating emetic, and is present in large proportions in the Cartagena ipecac made official in the last edition of the U. S. Pharmacopoeia. As this is cheaper than the Rio ipecac, we may expect to find our preparations of ipecacuanha much more irritating than in the past. The other alkaloid, emetine, is only emetic when given in large doses and in warm solutions. I have taken a grain of it in the manner to be described, without experiencing the slightest nausea. I am not now referring to the commercial emetine from which the cephaeline has been removed. Give the patient of this one grain, in tablets, to be swallowed whole, without any liquid whatever; this dose to be taken at bedtime when the patient is lying in bed, his evening devotions attended to, ready to go to sleep. After taking the dose he is enjoined to lie absolutely motionless for half an hour; and even in the case of patients on the verge of delirium tremens it will usually be found that the patient has fallen asleep within this time. This slumber endures about eight hours, and on awaking he will have a large greenish stool, which seems to clear

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out the liver better than any other chologog I have employed. This dose is repeated every night, as long as it is deemed advisable to keep up elimination.

Meanwhile, as little morphine is given as possible. In mild cases the drug is stopped at once, and this has been found possible even in persons addicted for more than twenty years. In some cases the toxins are poured out more rapidly than the eliminants are able to dispose of them; and when in consequence withdrawal symptoms become distressing, just enough morphine is given to temporarily check the discharge and ease the patient for a time. It is rare that more than a 1-4 gr. is given at a single dose for this purpose, no matter how large the quantity the patient has been taking. In several cases recently, instead of giving plain morphine I have used tablets containing morphine gr. 1-4, pure hyoscine hydrobromate gr. 1-100, and cactin gr. 1-67. The morphine is chemically pure; the hyoscine is that derived from *hyoscyamus* and contains neither atropine, strophine, nor apoa-tropine, nor any other impurity. The cactin is a concentration obtained from *cactus grandiflorus*, collected in the tropics at the time of its greatest activity, and treated immediately, before decomposition or evaporation has destroyed its therapeutic properties. One such tablet gives more relief than very much larger doses of morphine.

In most cases a single tablet administered hypodermically, thirty hours after the drug has been dis-

continued, proves sufficient. About the second day the liver commences to pour out vast quantities of bile, and it has been a problem to get rid of this discharge fast enough to prevent its regurgitating into the stomach and causing nausea. When this occurs it is best relieved by washing out the stomach with warm alkaline water. As the nerves emerge from the morphine inhibition they become hypersensitive, and little irritations cause excessive discomfort. To control this, solamine answers as well as the bromides; one-twelfth of a grain replacing five to ten grains of sodium bromide. This dose may be given every half hour. As yet I have not administered more than one grain in twenty-four hours. The urine should be examined daily. The most common departure from normality is a deficiency in the excretion of urea, for which the special remedy is boldine, in doses of gr. 1-12 three to six times a day.

The most useful indications are obtained from the study of the pulse. One case showed excessive vascular tension, for which pilocarpine gr. 1-6 was injected. In another case there was a deficiency of tension, the pulse feeble and soft, as if the vessel were only half-filled with blood. For this physostigmine was injected, in doses of 1-100 gr. In both cases the relief was so decided that the patient refused to believe it was not a bulky dose of morphine that had been given. I am firmly convinced that an exchange of these two remedies, in these two cases, would have resulted in aggravation of the distress. This illustrates the

folly of seeking for an antidote, or specific remedy, for morphinism as a disease entity. The only possible success must lie in treating the conditions specifically presented by each case. In a third patient the principal indication was presented by henteric diarrhea, which quickly subsided under the use of zinc sulphocarbonate. It seems that the chemical physiologist of the future will isolate many different forms of toxins from the human body and its contents, and that these will prove to be formed in varying proportions by different individuals, and each give rise to a different set of symptoms. Each will be found to respond to a specific remedy, and this will necessitate a multiplication of such remedies. In some instances evidences will be presented of the presence of a toxin for which no specific remedy has yet been discovered. This will necessitate a study of the numerous active principles not yet tested physiologically, or utilized by the therapist.

The results of the application of this working hypothesis show that in all cases the suffering from withdrawal is materially reduced by the application of the general stimulants of elimination, through the bowels, kidneys and skin. In many cases, however, as in those quoted, some special toxic matter will be poured out more rapidly than it is excreted by this means, and require some special antagonist or eliminant. Relief from all suffering during this period is a chimera; and a study of these cases from the standpoint of the permanence of their cure, has rendered the writer exceedingly skeptical as to the wisdom of suppressing all this suffering. There is more in teaching the patient to endure physical discomfort because it is a right thing to do, than in suppressing the lesson nature is endeavoring to teach him.

When the patient has returned to his home a time of trial may come. The writer has learned to especially dread the seventh month after the cure. Common symptoms at this time are subnormal temperature, gasping for breath, a dusky flush of the face, and the ordinary symptoms of fecal autotoxemia, mental and physical sluggishness, despondency, and various paresthesiae, with craving for morphine. But this theory arms us against such perils. We know that autotoxemia will occur, and that nobody gives more attention to his personal hygiene than he must. Even physicians rarely realize the necessity of attention to the bowels, and the facility with which fecal retention and impaction occur. A grain of calomel in divided doses, followed by a full cathartic, promptly relieve the symptoms, while a small morning saline laxative, or a very minute dose of aloin three times a day, usually keeps the patient in excellent condition.

One patient had contracted this habit for the relief of dysmenorrhea. This was prevented for six months by ordinary care and simple remedies, but on the seventh an attack occurred, of the greatest intensity. For this I injected one tablet of hyoscine, morphine and cactin, as above described. Relief was instant

and permanent. The next month passed without any recurrence.

An army officer had become addicted to morphine for the relief of intercostal neuralgia. The records showed that he had been disabled from his duties by these attacks thirty times during one year. The case proved one of unusual difficulty, and a few days after the drug had been totally discontinued he was seized with a typical attack of his neuralgia, of the severest character. For this I injected two of these hyosine, morphine and cactin tablets in succession, with the same complete and permanent relief. The remarkable fact is noted, that in neither of these cases did the injection of the tablets arouse the old craving for morphine. Such neuralgic attacks, however, are invariably attended with, and probably dependent upon, autotoxemia. If the blood contains as much toxic matter as it can carry with impunity, and

anything occurs to increase the quantity of this toxin, like a heavy meal of meat; or to check its elimination, like an attack of constipation, or exposure of the skin to cold, the result will be an accumulation, which will manifest itself at the points of lowest resistance; in this case being the nerves which had formed the neuralgia habit. With this explanation implanted firmly in the patient's mind, he should be able to prevent such attacks, by keeping his toxins eliminated as fast as they are formed.

I believe that the whole matter of comprehending the morphine patient, curing, and keeping him cured, may be summed in the one word, autotoxemia. But the accessory treatment that may be required, in a long series of cases involves the most extensive knowledge of pathology, and of the action of definite remedial agencies.

EDITORIAL

The thirty-seventh annual meeting of our society at Atlantic City, June 4th, 5th and 6th, was a most notable one. At no other meeting were there presented and read so many excellent papers of a scientific character; showing an immense advance in the study of the various subjects. Alcohol and its immediate effects was the theme of most of the papers. This is the trend of modern scientific thought. Many of the annual meetings of the past have been confined to the study of the

inebriate and the evidence of disease. This has now been generally conceded, although doubts are still expressed in many circles. The recent advances in laboratory studies have indicated the degenerations strictly due to alcohol, and have brought overwhelming evidence of disease which years ago was based almost entirely on clinical studies. Now it is possible in the laboratory and by instruments of precision to indicate the exact degeneration and breaking down of cell and tissues, which the

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older students interpreted from the symptoms alone. Of the twenty-one papers on the programme sixteen were read by the authors and only five by title. Comment is unnecessary as these papers will appear in the Journal during the year. The discussion of the papers was necessarily limited owing to want of time. The old officers were re-elected and Drs. Crothers and MacNicholl were appointed delegates to the Anti-Alcoholic Congress at Stockholm, Sweden. The great event of the meeting was the experiment of a "Temperance Lunch;" after the pattern of the British Medical Association. The purpose was to gather all persons interested in the temperance cause for a free discussion of every phase of the alcoholic problem. Our President, Dr. H. O. Marcy, was very influential in organizing and presiding on this occasion, and the success exceeded all expectations. Of the nine ex-presidents and presidents of the American Medical Association who promised to be present and speak, five responded and made excellent remarks. One was detained by illness, the other three were prevented from coming. Several other gentlemen not down on the program made remarks and some of the speakers seemed to be in doubt as to their audience, and what was expected of them. Otherwise the occasion was remarkable in showing the change in public sentiment, and the intense interest in anything that could be said on this subject. It was realized that this was the beginning of a new movement which would be contin-

ued hereafter, and be a popular meeting for all classes following the scientific papers of our meeting. There is unmistakable evidence in this and other movements that a great "psychic wave" is beginning, in which alcohol and the disabilities of the inebriate will be a most popular theme. The increasing interest and demand for the Journal points in this direction. To the older members of our society this is a significant sign which we most heartily welcome. The Government recognition of the request to appoint delegates to the Anti-Alcoholic Congress in Stockholm is another sign of advance. Surgeon-Gen. O'Reilly, of the Army, Medical Inspector Byer of the Navy and Drs. T. D. Crothers, T. A. MacNicholl, V. A. Ellsworth, of our society and Mr. B. A. Hookhart, of the Swedish Good Templars of this country have been appointed delegates. In another page we present the program of the topics to be discussed.

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A pro-alcoholic statement signed by a number of prominent men has lately appeared in England. It asserts that the universal belief of mankind concerning the diuretic value of alcohol is correct, also that they are convinced that it contains preserving powers, that it protects nitrogenized waste, and that its real danger is only in excessive use. In this country the Putmans have published a book written by Stark defending the use of alcohol by statements and assumed facts that are very startling and imply that everything to the contrary is false. Pott.

of these efforts are repetitions of history in the protests and denials which have followed every advance of science. The London Philosophical Society pronounced it impossible to navigate the ocean with steam the same year that it was first done. Bodies of learned men declared slavery a divine institution which could never be broken up, and that the war of the Rebellion was a failure even up to its close. Ten years ago science declared that electricity could never be used as a traction power, and that it was impossible to tunnel the North or East River, thus, every advance of science and truth has met with protests and denials. Theories of the past can always be heard and are defended as if they were exact truths. There is something pathetic in the belated protests of authors, who have failed to keep up with the vanguard of science. Declarations that alcohol is a food and stimulant have the far-off sound of persons left stranded by a flood of facts flowing in another direction. The egotism and assumption that the alcohol question can be settled in the laboratory, and by polemic arguments is very narrow, and the moralist, physician and pro-alcoholists who think that they are the final arbitrators make a fatal mistake. Public opinion founded on bitter experience and tests that are exact, deny that alcohol is a stimulant, and in the world of business where accuracy of human judgment is demanded the food value and brain stimulation from alcohol is contradicted. Everywhere the demand for clear judgment and vigor-

ous brains and vigorous bodies fail to find it in any use of spirits. The final test in the great laboratory of commerce and finance brings new evidence every day that alcohol is a paralyzant to accurate vigor and health. The scientific man and physician who imagines that it brings force and power not present before trusts to fallacious tests and fails to understand the teachings of experience. Alcohol is on trial in the court where there is no favor and one of last resort. The jury is demanding proof of its food and stimulant value in all doses, not how far it is safe and when it is dangerous. It is not the opinion of any one man or researches or laboratory tests. It is the question of how far alcohol will increase longevity, diminish disease, increase the vigor and mental capacity? How far will it improve and develop the latent qualities and make the man better and stronger? These are the questions to be settled beyond all doubt. The defenders of alcohol are forcing a final decision and all unconsciously they are bringing the real facts into greater prominence.

* * *

A New Form of Tuberculosis.—The term galloping consumption has been used to describe a form of the disease that began suddenly, and progressed with great rapidity to fatal termination within a few days or weeks. It has been observed that this is quite common in spirit and drug taking. A number of cases have been reported in which the intimate association between inebriety and tuberculosis was pointed out.

The subsidence of one was followed by the outbreak of the other. The restoration of the inebriate often develops tuberculosis. Prof. Lancelieux, of Paris, has recently announced that this form of tuberculosis is peculiar, not only in its rapid action but in its location, beginning in the right lung and extending towards the back. This he claims to be opposite to that of the ordinary development of tuberculosis. The inflammation is extremely rapid and the tubercular deposits, extend quickly over each lung, sometimes breaking down, but usually forming sub-acute inflammatory centres, that block up the air cells and blood vessels. The usual symptom observed is the rapid congestion, dullness and cutting off of respiration and circulation in certain areas of the lungs. Expectoration is intense but hemorrhage is not prominent. There can be no doubt that the profound vaso-motor paralysis with low vitality is a prominent cause of this condition. The observation that it is new and peculiar to persons with an alcoholic history deserves a careful study.

* * *

New Researches Concerning the Effects of Alcohol.—The Journal of Chicago gives the following summary, in a late editorial. The Hygienic Laboratory of the Public Health and Marine Hospital Service has just issued an interesting and valuable report of studies on experimental alcoholism conducted by Dr. Reid Hunt, chief of the Division of Pharmacology of that institution. Experimental evidence is presented showing that extremely moderate amounts of alcohol when administered even for a short period may produce profound changes in metabolism in character.

Hunt's first series of experiments were made with animals that had been fed on oats soaked in alcohol. After a variable time these animals were given doses of acetonitrile, a substance which may be considered chemically as hydrocyanic acid in which the hydrogen atom has been replaced by the methyl group. This agent owes its physiologic activity to the liberation of hydrocyanic acid, and if this liberation is hastened its poisonous effects evidently become more manifest.

It was found that a hypersusceptibility to this poison had developed in the alcohol animals, as they succumbed to doses very much smaller than necessary to produce death in controls. This susceptibility was undoubtedly due to the continued ingestion of alcohol, as in all other respects the conditions of the animals were identical.

As alcohol is easily oxidizable in the body, it seemed reasonable to suppose that its continued use would increase the oxidizing power of the body—in other words, that tolerance is thus established.

These experiments show that this really does occur and that its continued administration also increases the power of the body to break up other alcohol groups, the methyl group of the acetonitrile being oxidized more readily in alcohol animals with resulting increased liberation of hydrocyanic acid.

A second series of experiments is given showing that guinea pigs fed on alcohol when given acetone trile excrete more sulphocyanate, the formation of which from acetone trile seems to be a protective reaction on the part of the body against poison. This increased excretion is taken as future evidence that under the conditions maintained in these experiments, there is a corresponding increase in the liberation of hydrocyanic acid.

It thus appears to be clearly proved that marked changes in the processes of metabolism are brought about by the administration of alcohol in doses small enough never to have caused symptoms of intoxication and that these changes are probably due to modification of the oxidation processes in the body.

Such changes do not follow the administration of the carbohydrates. On the contrary, Hunt shows that mice fed on oats soaked in dextrose acquire a distinct resistance to acetone trile and he, therefore, points out that too much importance should not be attached to the protein sparing power of alcohol in practical dietaries.

These views are in accord with those of Chittenden, who, while he admits that alcohol in moderate doses may act as a food in the sense that it is a source of energy, denies that it is comparable with the carbohydrates, as unlike the latter, it produces an increased excretion of uric acid, which is inimical to health. Hunt has also shown in this report that the continued administration of alcohol markedly increases

the excretion of ethereal sulphates in the urine. These latter products in all probability may be attributed to intestinal putrefaction—a condition often found in alcoholics.

The excretion of neutral sulphates was, if anything, decreased. The increased excretion of this product has been taken as a diminution of physiological oxidation. These results, therefore, are an additional argument that alcohol has been a limited power of inhibiting oxidations.

While it is shown that the use of alcohol increases the power of the body to break up acetone trile, modifications of the physiologic processes may not have the same deleterious effect in the case of other poisons.

* * *

The Scientific Temperance Federation.—This new society organized at the beginning of the year, promises to be one of the most important practical efforts made to gather up and materialize the great mass of facts that are floating around in literature, societies and the experience of temperance workers. The following clause explains the object of the federation:

"Its aim is to bring together the facts developed by scientific research and experience, making them accessible to all persons interested in the great questions of sobriety and hygienic living; to disseminate such facts in every possible way; to promote the hygienic and temperance instruction of the children and youth in the public schools.

It will enable the specialist to put his conclusions on file where they

will be sought for, and examined, and the student or individual worker to obtain desired information.

It will not supersede existing organizations, but will endeavor rather to unify and supplement them."

Our society most heartily joins in this effort and many of our officers are active members.

A similar society was formed last year called Swiss Temperance Bureau, to become a clearing house and international office for the promotion of the facts concerning the drink problem. Miss C. F. Stoddard is corresponding secretary and her address is No. 23 Trull street, Boston, Mass., and we most heartily commend her work to every reformer and student of the alcoholic problem.

* * *

Delegates to Sweden.—The government at Washington in response to the invitation given by the Swedish Government has appointed the following delegates and representatives for this country: Surgeon-General O'Reilly to represent the U. S. Army and Medical Inspector Beyer to represent the U. S. Navy. Drs. T. D. Crothers, T. A. MacNicholl and V. Ellsworth to represent the medical profession of the country. These persons will attend the congress and report to the government. This most unusual interest of the government in the alcoholic question is unmistakable evidence of the great advance in public sentiment and the international character of the problem. This also points clearly to the great oncoming of a "temperance wave" or in other

words a new interest and activity in the alcoholic problem.

Psycho-Therapeutics as a Remedy.—The great pioneer student of this subject whose many books have been epoch-making Dr. A. T. Schofield, contributes the following study largely from his work on "The Management of Nerve Patients."

The first essential is a right understanding of the powers of mental therapeutics which is literally one of the chief agents in the cure of functional cases. Unhappily at present it is difficult to get a full hearing for psycho-therapeutics. The country is overrun with mystics who, under high sounding titles, exploit the subject, and surround it, with an atmosphere of exaggeration and dogmatism, so that it is difficult to get a quiet medical man, to speak of it except in disgust. This disgust is increased by the boasted cures, many of them real and attributed to the powers of this agency. Those who take time to consider the real action of the vis medicatrix nature of the mind over the body, and of mind over mind will not be deterred from a careful study of these remarkable forces. A mixture of the spiritual and mental should be taken with caution, and may wisely be regarded with suspicion. There is a happy combination of science and Christianity or of holiness and health that is sane and wholesome. But there is another mixture that is dangerous in which the visionary, the wavering, and the unstable are carried away into realms of the absurd and are actually harmed by it.

There is associated with this mixture misconceptions, exaggerations, hypocrisy and mysticism that leads to abnormality and disease. To listen to much of the teachings that are called psycho-therapy it would appear that medicine and doctors are futile and are positively dangerous to the world, and that all truth and practice turn on the recognition of psychic facts. Notwithstanding this there are cures, many of them most remarkable, due of course, to the power of the mind over the body. It is positively necessary for every seeker after truth on this subject to patiently rake over this mass of exaggeration, and find the pure gold it conceals. There are many diseases that are not cured by the mind alone. It is safe to assume that mental agencies are most powerful in functional nerve diseases. But in every case of disease the condition of the mind is an important factor, and when the powers of the unconscious mind are fresh and active, repair and resistance are rapid and strong and recovery is the rule. I do not limit the powers of the unconscious mind to functional nerve disease, because we know its powers can also actively direct physical processes, and we are also aware that the term functional by no means excludes a physical basis, but merely implies that this basis is not apparent to our coarse and crude methods of observation. We cannot say that there are fixed lines, one side of which the mind can influence, and on the other side it is powerless. This would betray our ignorance of modern research. There

are two facts which must be clearly kept before the mind in a study of this subject. One is that nature, the "vis medicatrix naturee" the unconscious mind on the entrance of disease or accident, resist the one and repairs the other, particularly in the normal state. Second, that this natural resistance and repair can be retarded or aided greatly by the physician, and sometimes by the patient. In other words in disease we have to deal both with the natural therapeutic action of mind, and with that artificially induced. The artificial help which can be given to these natural processes may come from oneself or from some Quack, or by a physician. First by oneself. Elaborate manuals written on Auto-suggestion, on Mentalism, on Will power on Self-cure and a hundred other allied subjects; all hold out to the sufferer the hope of being able to resist and cure disease by mental means alone. Many persons have tried these methods, which consist of violently asserting, you are not ill when you are, and suggesting health, hope and resolutions of various kinds; these are sometimes combined with physical aids, such as rest, deep respirations and special exercises. These books are not all written by Quacks, though all savor of Quackery; the success they promise is not always secured, and yet they are not all false. There is a power that the conscious mind can exercise over the unconscious, and as there is no doubt that cures can be retarded by anxiety and despondency, so it can be aided by peace and hope. Beyond this in some in-

stances the will power can be used to determine in critical cases the question of life and death, and made effective in recovery. One fact should be recognized that most functional nerve-sufferers have neither the energy nor strong will required, and are unable to use these means when ill, possible if they were well. The very illness diminishes the power of self cure. This power of self help is far more effectively exercised in mental hygiene than in mental therapeutics; in other words its greatest value is preserving one in health, rather than restoring health when lost. Another way of rousing up the unconscious mind to aid the body in disease is by Quackery. The term is here used to indicate all unusual methods and means conducted by persons without training or medical knowledge; measures that depend on dogmatism, assertion and unusual means. There can be no doubt that the mind is immensely influenced by arbitrary beliefs, strange theories, startling theologics or philosophies, or credulity in some mysterious power of men and things, or some occult and spiritualistic phenomena. These forces applied in some irregular illegitimate way seem to have a powerful impression. Trained medical men, even in the practice of psycho-therapy seem to use such methods, and do not need to. There can be no doubt with all the jiggery and magic power a large number of patients are cured; many of them have previously been treated by good physicians and the oft repeated word that they were cured after the doc-

tor had failed is a sad reflection on our ignorance of the subject. The curability of agent is ever and always the underlying therapeutic power of the unconscious mind over the body, a power that is practically ignored and untaught in our schools. The continued success of Quackery is due to the ignorance of the profession on psycho-therapeutic powers. Whenever the profession take up the scientific and practical value of mental-therapeutics the mystery and deception of the Quack will disappear. Psychic-therapeutics is as literal an agent in the cure of disease as drugs, and when this fact is recognized the stigma of failure of cures will be removed. There are two facts which should be answered in the diagnosis and prognosis of every disease. First what part does the mind play as a cause or contributing agent in this disease, and second how far can it be made to assist in the cure? It is an answer of these questions that will open up the new field of medicine. I have shown first, how far the patient can help himself and second how far he can be benefited by the Quack, and I come to the third question, how far he can be helped by the physician, or how far can the physician aid the mind in its artificial power over the body. The natural powers of the vis medicatrix naturee may be turned into two different channels. First, indirectly, through the personality of the physician acting on the conscious mind, second directly by increasing the powers of the unconscious mind by Auto-suggestion, faith, hope, etc. These may be re-

volved into a personality method of treatment and regulation of the surroundings. There is no evidence to believe that one's own will can be made influential on another one in directing him in a certain line. There is evidently in some persons a strong personality which is called magnetic force, whatever that may be, or a power more potent and impressive than in other persons. This undoubtedly is inborn and may be immensely developed by cultivation. It is sometimes called the gift of healing, and describes some peculiarity of the psychic that dominates other minds which it comes in contact with. The power of the physician is increased by his psychic use of drugs, and his psychic determination and regulation of surroundings. This means the use of drugs for

their mental effect, and the impression they produce on the surroundings. Natural therapeutics is regulating the surroundings of the patient, which in themselves will assist in carrying out the suggestions. There can be no doubt that the unconscious mind presides over the well being of the body, and that it is more susceptible of influence in some persons than in others. It is the utilization of this power that makes the treatment a success. The application of these facts to the cure and control of the drink and drug neurotic will be obvious to every reader. The general principle back of it all should be recognized, and put into practical use, then the rain of the Quack will be diminished and the credulity and mystery will disappear.

ABSTRACTS

State Care and Treatment of Inebriates.—The following is an abstract of an excellent paper by W. S. Osborn, M.D., Superintendent of State Hospital for Inebriates at Knoxville, Iowa, and the discussion following it, read before the officers of the Iowa State Board of Control at Des Moines, Ia. "How best to care for and treat this class of delinquents" is a problem containing many difficulties. The different forms and manifestations of the disease of inebriety are as numerous and varied as the causes producing them. There is not in the whole field of medicine a disease so widespread and ruinous in its effects on the victim, his home,

family and society at large, yet, notwithstanding, this appalling fact, our much vaunted civilization allows its ravages to go unchecked with very small efforts towards rational treatment and cure. In a large percentage of cases inebriety is curable. There can be no doubt that our very best methods at present, of restraining and treating this class are still very imperfect. Reformation of the drunkard is almost altogether left to temperance societies and philanthropists, or turned over into the hands of the law, in which fines and imprisonments are used. On the other hand secret and magic specifics are offered, warranted to cure in

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from three to thirty days, and permanently restore the victim. In the words of an eminent authority it is a reproach to us that only jails, work houses and faith cures are available for the unfortunate inebriate and dipsomaniac. This condition prevails not only in public minds, but in the medical profession generally. He is regarded as a nuisance, a wilful offender against society, and not entitled to hospital treatment, but rather to be confined in jail until he is recovered from the immediate effects of his debauch. Why not imprison the typhoid fever patient? Is it because he unwittingly gets his poison from contaminated water, while the inebriate knowingly, but helplessly gets another poison from a different source? Surely it is no less a disease and no more of a crime than epilepsy. An eminent physician declared that alcohol inebriety has been very seriously neglected by the medical profession, almost in proportion to the havoc it has brought, more than all other branches of prevented medicine. In a penal institution during a period of three months seventeen deaths occurred, due to alcoholic excesses, and not one of these persons received medical attention. We see recurring along the street an inebriate intoxicated, suffering from a paroxysm which bears the same relation to periodical inebriety as chills to malaria. He should receive the same attention as sick and diseased, and yet he is thrown into jail and later is fined and sentenced to imprisonment. Patients have been admitted into the State hospital as inebriates in a deplorable physical and mental condition after confinement in a jail without receiving any medical attention. There can be no question that inebriety is the most fruitful and prolific source of all diseases which afflict mankind. A disease that is capable of being perpetuated in the most positive way and a disease depending on heredity. Of those admitted to the State hospital for inebriates 51 per cent were children of parents, one or both of whom were addicted to the use of narcotics or stimulants. Seventeen per cent were pre-disposed through epilepsy, insanity, feeble-minded and criminal parentage. Socially as well as economically, it is imperative that the proper means and measure should be used to check this increasing source of disease and suffering. A few states notably New Jersey, Pennsylvania and Delaware have enacted laws to provide for the confinement of inebriates to a proper place where they can be treated. In these states at present such persons are received in hospitals for insanity. In Pennsylvania a law is now pending to provide for the establishment of a separate hospital. Similar laws are projected in Indiana, Illinois, Georgia and Alabama. In all probably very soon other states than Massachusetts and Iowa will have separate institutions for the treatment of this class. The two latter states have provision for voluntary commitment and parol pending good behavior. In Connecticut the law permits patients to be sent to private hospitals under State care. In several States patients are declared

insane and sent to State institutions for the insane. These are but indications of the beginning of legal recognition and provision for the care and control of such persons. In admitting to our institution all classes of inebriates who are criminal and degenerate we alter the very purpose for which the hospital was established. Nearly 30 per cent. of our population are composed of this class, who are a most disturbing disorganizing element. They escape and go back to the life which they have led before as the most pleasing and satisfactory. Such persons are sent here to get rid of them, and are not with any hope of permanent cure. This indiscriminate commitment is unjust to the hospital and makes its work more complicated and difficult. Another class received here both need and appreciate the value of hospital restraint and treatment. Many of them are incurable cases, but need help and assistance. Fully 20 per cent. of our patients are men past middle life, with a history of long addiction and repeated failures by the pledge, the prayer and the so-called specific cures. To such persons the effect of long treatment in the best sanitary and hygienic conditions, with careful diet, outdoor employment, the results are very satisfactory. All persons are improved or restored for the time being. Often he believes himself cured and insists on being released, and not infrequently escapes only to return to his former habits. There are no specifics or drugs which can be given that will restore the victim to his old regime. All such measures

and means result in positive injury, and leave the victim less able to live a normal life. The remedies and measures used for restoration often tax the therapeutic skill of the physician. They include a long list of eliminants, tonics and stimulants, also baths, electricity and other allied agents. His age, occupation, former habits, the frequency and duration of his attacks and the general range of causes are the facts from which to determine the character and class of means required in treatment. After the first months of his enforced abstinence and restraint he seeks to free himself and acts as if he was perfectly able to control himself. Punishment for this, antagonizes and increases his determination to be free from all restrictive measures. All corrective remedies for refractory and escaped patients should be administered within the hospital and suited to the individual needs of each one. So long as indiscriminate commitment of incurable and criminal types continues without adequate means for enforcing correct provisions for living and employment, the work will be a reformatory and not a hospital. The increasing proportion of this class should be provided in separate dormitories and not come in contact with the hopeful recent cases, to whom hospital treatment is welcomed. The vicious class require military discipline and absolute restriction for prolonged periods. Many of them would be permanently restored by these exact means and measures. Others of the more

hopeful class need removal from surroundings and isolation from all injurious influences. They are curable. I would admit those requiring hospital care, and treat them for fixed periods of time not less than four months and then under favorable conditions, send them out on parole. The other class more incurable should remain at least a year and be employed during this time, always conscious that their returns to society depended on their improvement and apparent ability to be self-supporting.

If we are to care for both classes on one institution, two separate and distinct departments must be maintained. One for the incurables and the other for the hopeful classes. In the commitment of an individual I should avoid as much as possible, any that savored of a criminal trial. The inebriety of the patient, and the testimony should be taken in private, avoiding as far as possible the publicity of the procedure. The patient should be committed to the hospital for a definite length of time and receive treatment for a disease instead of punishment for a crime. I would commit those whom it was necessary to restrain that society might be relieved, or those who gave no reasonable hope of recovery, for a term of years, depending on their condition, and during this period be compelled to work and the proceeds of their labor to be devoted to the maintenance of their families or their children if such children be public charges. Some might work out their salvation, and at the same time contribute towards the support of their families. It is an interesting fact, that men so employed have been most contented and industrious. During the summer months, employment on the farm, and in the garden has been provided for a limited number. Their improvement has been marked and but few of them have relapsed after leaving the hospital. A very interesting discussion followed the reading of this paper. In answer to an inquiry Dr. Osborn explained the value of work to the curable cases, and the detrimental influence it exerted upon them, and the stimulus to many persons to prove to the authorities that they were fully rational and well and can go home earlier than others. He also described the injurious influences of incurables who have no ambition to help themselves, or to help others. These persons need constant restraint and sharp military discipline. One of the board remarked, "I believe in active treatment of this class of unfortunates. It is just as natural for some men to become drunkards in certain families as it is for members of other families to have periodic attacks of disease or insanity. I know of two families in which there are four children one in one, and three in the other. All of them inebriates, and have been for years. Their parents and grandparents were inebriates and the children are only following the hereditary impulses. There are other diseases caused by drink and drugs, which are as positive and distinct as anything we know of. These are conditions which must be treated, not by the flog and whipping

past but by the hospital and sanatorium care." Other members of this board spoke of the pronounced hereditary transmission of the disease asserting that over 90 per cent. of the dependent children of the State are traceable to alcoholic parents. Dr. Johnson suggested that sentences against inebriates should be commutative. The first sentence should be a short one, and every following relapse the period of confinement should be doubled. This would keep the inebriate inebriate preferentially under legal control and would save the annoyance of testing his condition every year or so, and would serve to make him more amenable to restrictions. The State is to be congratulated on its very rational beginning and studious attitude toward this work.

Alcoholism and Tuberculosis.—Dr. Knopf, of New York, in his admirable essay on Tuberculosis writes as follows: Now one more word concerning alcoholism or drunkenness. There is no doubt that alcoholism must be considered the greatest enemy of the welfare of the nation, the most frequent destroyer of family happiness, the ruination of mind, body and soul, and certainly the most active co-operator of dreadfully tubercle bacillus or germ of tuberculosis. To combat alcoholism requires above all education. From early childhood the dangers of intemperance and its fearful consequences should be taught in schools and at home the drunkard should be pictured as the most unhappy of all mortals. Alcohol should

never be given to children even in the smallest quantities.

In families where there is a fear of hereditary transmission of the disease of strong drink, even the mildest alcoholic drinks should be absolutely avoided. It would also be best if all people so predisposed, or who may have acquired only the occasional desire for drink, would never smoke, for experience has taught that attacks of dipomania are often caused by an excessive use of tobacco. The young man starting out in life should take with him the moral training which will enable him to be a gentleman, and be considered a polite gentleman, though he absolutely refuses even to enter a liquor saloon in order to treat or be treated to drink. It is this treating habit—ah! so prevalent in our American society—which has ruined many a young man and made him a moral and physical wreck. The creation of coffee and tea houses where warm, non-alcoholic drinks including bullion are sold in the winter and cool ones in summer, are to be encouraged. It would be of additional advantage if some of these houses could offer healthful amusements for the old and young. Temperance societies which through intelligent propaganda help to combat the fearful evil of alcoholism, should receive encouragement from everybody.

Physiological Action of Whiskey on the Circulation.—Drs. Charteris and Cathcart of the Glasgow University, have recently published some very interesting experiments on the

above subject. Mention is made of the two views now advocated, first that alcohol in suitable doses acts as a stimulant; second that the action of alcohol is always depressant. These views are still under dispute, but the latest conclusions agree that alcohol has a depressant action on the higher nerve centres in all cases. Alcohol in small doses in healthy individuals seems to have very little action on the blood pressure, yet exerts a flushing which it produces indicates change of the circulation. This is accounted for in various ways by different observers. One believes that its constricting influence is most prominently exercised on the splanchnic nerves. Others believe its influence is entirely on the peripheral nerves. The authors tested three healthy men who were abstainers by giving them each one ounce of alcohol with water. The experiments were preceded by a number of blood experiments to determine the normal pressure on the pulse and arteries in health and secure a standard from which to judge. The Riva-Rocci sphygmomanometer and Garner's tonometer were used every ten minutes for an hour after giving the spirits. Different kinds of whiskey were used called port still and parent still whiskey. Differences were supposed to exist in these mixtures, one containing more ethereal products than the other. Both produced a distinct sedative action. During the experiments the subjects remained seated or reclining and were not allowed to speak or move. In all the experiments the pulse-rate falls from the beginning. In one experiment it went up and soon after fell back below the normal. With absolute alcohol an increase in the pulse was noted, but this quickly declined. The pressure went down likewise. The general effect of the three alcohol preparations on the pulse and pressure was very slight, and after the first ten minutes it came back to normal and remained very near that point with a tendency to go down. Observations on pneumonia cases showed little of any change, other than increase of pressure and lowered pulse rate. This was so slight that it could not be called distinctive. There can be no doubt that certain alcohols have a decided sedative action, but the conditions which govern this are unknown. The conclusion is that the general effect of whiskey on the pulse and pressure depends very largely on the alcoholic contents, as well as the condition of the system and body.

Alcoholism as a Cause of Insanity.—Dr. Savage, in the Lumbian Lectures on Insanity before the Royal College of Physicians at London remarks as follows: As a consulting physician I am struck by the large number of teetotallers by whom I am consulted. This does not prove that such persons are unstable in consequence of their temperance, but it shows that teetotalism alone does not decrease insanity. Dr. More has expressed the same opinion. Doubtless alcohol affects the nutrition of the brain, and may be called a nerve toxin. It produces active symptoms which may pass

from delirium to mania, and this may pass into a chronic hallucinated state. Prolonged indulgence in certain persons leads more or less rapidly to mental weakness which has special characteristics. These are interestingly associated with sensory disorders, the ideas of time and place becoming confused. In many respects alcoholic excess resembles in its results senile mental decay. It may give rise to neuritis which may be misinterpreted so as to give rise to ideas of cutaneous annoyance or electrical interference. Chronic alcoholism leads to a state of the nervous system which is allied to that produced by strong neurotic heredity. Alcoholic parentage tends to produce mental weakness and criminality in the offspring. Dr. Meit, supported by Dr. Berman Lewis, has shown that alcoholics admitted into general hospitals have kidney and liver diseases, whereas the insane alcoholic dying in an asylum rarely has evidence of his excess in his viscera. It seems as though the brain of those becoming insane from alcoholic excess is a weaker organ or one more easily affected than that of the drunkards who escape. We all know that injury to the head may render a person very easily influenced by drink and it is easy to think that there are especially susceptible persons who readily suffer from alcoholic excess.

Alcohol leads to delusional insan-

ity, to recurring mania, to delirious mania, and later to dementia of a peculiar type. It plays an important part in the production of general paralysis of the insane, for though I have never been able to satisfy myself that any one case was due to this cause alone, yet with syphilis it is common.

The special report of the Irish Commissioners expresses very strongly the opinion of the Irish medical superintendents that alcohol is a real cause of insanity in that country, though they also mention the excessive indulgence in tea as a cause.

Alcohol and Intestinal Putrefaction.—In an editorial on Hunt's experimental researches on alcohol, in the New York Medical Journal, occurs these sentences: "The experiments show that the administration of alcohol is accompanied by an absolute and relative increase of the excretion of the ethereal sulphates in the urine. This fact may be considered as evident that alcohol increases intestinal putrefaction, and, if it is admitted that increased elimination of ethereal sulphates is due to increased intestinal putrefaction, it is possible that the increased intestinal putrefaction produced by alcohol may account for some of the pathological effects of alcohol, such as cirrhosis of the liver and alcohol amblyopia."

NOTES AND COMMENT

Alcohol: parents always transmit to their children a predisposition to use spirits with or without special exciting causes. Such children are absolutely certain to either drink spirits to excess suddenly, or after a period of moderate use, or they will have feeble resisting capacity to pain and discomfort and find relief from alcohol and narcotics more positive than by any other remedies. Or they will receive direct from the parents a peculiar susceptibility to exhaustion from any sort of strain and drain and this will find most grateful relief from alcohol. In a certain number of cases they are immune to alcohol and have intense repugnance to its taste, smell and effects, but in the second generation this is overcome and the tendency breaks out with greater violence.

All children of alcoholic parents have a defective brain and brain control and manifest this in a great variety of nerve and brain disorders with diminished longevity and increase of susceptibility to disease and low vitality to overcome it.

Huxley's opinion of Alcohol as a Stimulant.—Huxley was once asked what he thought of alcohol as a stimulant to the brain in mental work. His reply was prompt, unequivocal, decisive: "I would just as soon take a dose of arsenic as I would of alcohol under such circumstances. Indeed, on the whole, I should think the arsenic safer, less likely to lead to physical and moral degradation. It would be better to

die outright than to be alcoholized before death. If a man cannot do brain work without stimulants of any kind he had better turn to hand work—it is an indication on Nature's part that she did not mean him to be a head worker. The circumstances of my life have led me to experience all sorts of conditions in regard to alcohol. But on no conceivable consideration would I use alcohol to whip up a tired or sluggish brain."

Alcohol and Abstinence.—"Alcohol is a stupefying poison. Alcohol is the cause of many mental diseases, and most of the crimes. Every seventh man in Denmark dies of drink. Never give children alcoholic drinks. Alcoholism breeds tuberculosis and sexual diseases. In the struggle for temperance abstinence is the only weapon. Abstinence never injured a man. Sure is the hand and clear is the thought of him who never drank spirits. If you wish to be happy, prosperous, have a home of your own, and be respected, become a total abstainer at once."

Legal Psychiatry.—In a course of lectures in Legal Psychiatry given in April at the University of Göttingen, Prof. Aschaffenburg, of Köln treated the following topics: "Alcoholism as a Source of Criminality and Mental Disorders," "The Psycho-Physiological Action of Alcohol," the "Clinical Forms of Alcoholism," the "Penal and Social Stip-

of the same." This course of lectures was arranged particularly for physicians called upon to give expert testimony in cases of mental derangement, and for jurists and officers of penal reformatory and training institutions, and other persons who have to deal with the mentally abnormal.

The Washingtonian Home received during the past year and treated 872 cases. Of this number 112 had delirium tremens. Six were insane and sent to the State hospital and two died. This somewhat remarkable report indicated an unusual low death rate for the year. From the time of its incorporation in 1830 17,073 patients have been admitted. This is one of the oldest institutions in the world which has for 48 years been open continuously for the care and treatment of inebriates.

Medical Justification of Total Abstinence.—Prof. Sims Woodhead of Cambridge, Eng., the president of the British Medical Temperance Association, in a recent address said: "Until recently it was thought that the evidence on medical justification of total abstinence was sufficient to carry conviction and practically settled the question. The assertions in the recent manifesto showed there were some persons not yet convinced. The curious part of this manifesto was, that it was simply assertions, with no evidence or facts to support them and that these statements were submitted to the medical men by the alcohol interest, with

certain pressure which caused them to sign it; thus they were made to be cats-paws to draw out chestnuts that some one else could not. The whole question was settled by evidence beyond doubt in all circles of society and business.

The Management of a Nerve Patient.—*The Force of Mind on the Mental Factor in Medicine. Unconscious Therapies or the Personality of the Physician.* These are three of several books by Dr. A. T. Scofield and published by P. Blakiston's Son & Co., Philadelphia, Pa. We have reviewed each of these works in *The Journal* and take great pleasure in calling attention to them again as the most helpful of all books, that the physician can have on his office table. The author has a remarkable facility of expression, making the most obscure subject clear and fascinating to the reader. The topics in these different books are all presented in both a popular and scientific dress. Clear enough to be understood by anyone and scientifically exact to the most critical mind. These works are libraries of new thought and doors opening into rooms and new apartments of practical medicine, which every physician should possess and study. We present a few pages condensed from the first volume in our present issue, and believe our readers will find it worth the study.

Tuberculosis as a Disease of the Masses and How to Combat It.—*Fourth Edition Revised and Illustrated. Prize Essay.* By S. A. Knapp, M.D.,

New York, Director in the National Association for the Study and Prevention of Tuberculosis; *Fasting Physician, Kew-Forest Sanatorium for Consumption, Kew-Forest, N. Y.* Published by Fird P. Platt, 514 E. 82nd St., New York City. This essay has gone through four editions and is most deservedly popular and practical. It presents in a graphic style a great variety of facts of the utmost importance in the prevention and treatment of these diseases. The author is probably the most thorough student and the best authority on this subject in the country. His conclusions are so rational and common sense that they impress the reader vividly. We shall quote from this in the near future and assure our friends that no brochure in the English language contains more facts and is more valuable for distribution than this.

Diseases of the Rectum: Their Causes and Non-Surgical Treatment. by W. C. Brinkhoff, M.D. is a popular treatise directing attention to the fact that diseases peculiar to the rectum should not be neglected or treated with indifference, either by the physician or the afflicted. (Orban Publishing Co., Chicago, \$2.00).

Sal. Hepatica has been found specially serviceable as a safe laxative and eliminant of irritating toxins resulting from fermentation or decomposition of food, in inflammatory conditions of the bowels, affording prompt relief in stomache and intestinal indigestion, colic, acute or chronic diarrhoea of either adults or children. It is remarkably free from any gripping tendency, owing to its anacard and soothing properties. Bristol-Meyers Co., 277 Greene Ave., Brooklyn, N. Y.; the manufacturers, offer to send liberal samples to physicians, upon request.

In Treating Chronic Skin Inflammations following in the wake of attacks of toxic dermatitis, attention to the general condition of the health, avoidance of anything irritating to the skin, a carefully selected diet and proper care of the skin are important features which must not be neglected. In addition, Barthe's preparation of echinacea angustifolia and thymoecidantia, which goes under the trade name of Ecbol should be used both locally and internally. A drachm should be taken four times a day.

Neurographs.—*A Series of Neurological Studies, Cases and Notes.* Edited by William Browning, M.D., Ph.D., and Associates. This is the first of a series of studies to be published from time to time which promises to be of very great value. The first number contains six articles and notes of most interesting cases and is designed for special workers and persons interested in neurology. We commend it as a most promising effort to give permanency to facts that occur in every day's observation. The Editor can be addressed at 54 Leferts Place, Brooklyn, N. Y.

Felicity, the Making of a Comedienne by *Clara E. Laughlin*, is a story full of the inexhaustible charm of the theatre, a tale of magnificent effort, of development against odds, and above all a love story that is a real love story. "Felicity," a great comedienne as she is a splendidly lovable girl, the genial old comedian known and loved from Maine to San Francisco, the likable, frivolous leading man, the hard-working, light-hearted man and girls that make up the theatrical world, picturesque with the picturesqueness of behind the scenes, are described with the knowledge of an insider and the light, sure touch of a finished artist. Chas. Scribner's Sons. \$1.50.

The Scarlet Car. *Richard Harding Davis's latest volume*, is composed of three connected short stories. The dramatic personae are a large red touring car, a charming girl, a concealed nunpsuall to whom the afore said girl is engaged, and a fine type of the K. H. Davis young man, wildly in love with the same girl. Various others help the situations but these hold the center of the stage always. The charming girl finally wakes up. It is really an interesting little book and the pictures add to the interest. (Chas. Scribner's Sons).

The Mayor's Wife, by *Anna Katharine Green*. Like all of Mrs. Rohlfs' work her new work is one of

from as a capable novelist. (Henry Holt & Co. \$1.50).

Alice-For-Short is the second venture of *William de Morgan*, who scored such a distinct success with his *Joseph France*. This new novel has all the humor and literary charm of the earlier book, with an absorbing plot and a good love story. It is a singularly human narrative of English life, reviving the best traditions of the Victorian era in its method and flavor, yet a story of recent years. Early in the story a little London wait tells a friendly artist that she is called "Alice for short." Alice comes to know this artist's friends and his family. Their fortunes form the theme of this remarkable book. (Henry Holt & Co. \$1.75).

Congressman Pumphrey, *The People's Friend*, is a new book of John T. McCutcheon's drawings. McCutcheon is one of the cleverest cartoonists in the country, and these drawings show his funniest side. The pictures are accompanied by a running fire of commentary, which forms in continuous narrative an intensely amusing social and political satire. (Bobbs-Merrill Co. \$1.00).

The Turn of the Balance, by *Brand Whitlock*, constitutes a tremendous arraignment of the law as it is administered in America today—a vivid picture of the savage cruelty at the heart of our boasted civilization. It is a book revealing everywhere the author's wonderful

knowledge of all classes of society from the great and the rich to the miserably poor and the hounded criminal. (Bobbs-Merrill Co. \$1.50).

The Miracle Worker, by *Gertrude M. Wood*, is an exceedingly well written novel, with a true sense of psychological relations that merit special attention. The characters are clearly defined, and the book, as a whole, is distinctly out of the ordinary and decidedly worth while. (John W. Luce & Co. \$1.50).

A Victor of Salamis, by *William Stearns Davis*, in his new story Mr. Davis has a continuous narrative of glorious fighting and splendid episodes of action in classic Greece. The principal character is a young athlete who wins the wreath of victory at the Isthmian games. Later, the scene shifts to Persia, where the book glows with all the color and warmth of the Orient at the period of Xerxes' greatest power. This power is turned toward the subjugation of Greece, and gives the hero an opportunity to redeem his name by manly feats of courage at the battle of Salamis and elsewhere. It is plain that a story which includes scenes and events so pregnant and thrilling as these, when handled by a man who long ago proved himself to be a born storyteller, must be one to hold the attention of appreciative novel readers. (The Macmillan Co. \$1.50).

Susan, by *Ernest I. Ottendorfer*, is the story of a beautiful and impressive maid, a young and highly imaginative young peer, an indigent mis-

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MINNESOTA.

Minneapolis—The Laurence Sanitarium, W. D. Laurence, M.D.,
Mental, Nervous and Narcotic.

NEW JERSEY

Cranbury—The Larches, E. Gordon, M.D., Mental Defectives.
Plainfield—Plainfield Sanitarium, J. H. Cooley, M. D., Nervous
and Chronic.

NEW YORK

Goshen—Interpines, Dr. Frederick W. Seward, Nervous
Diseases . . . See 2d Cover Page

Fishkill-on-Hudson—Riverview Sanitarium, Dr. J. R.
Bolton, Nervous, Mental and Alcoholic . . . See Page 245

Kingston-on-Hudson—Dr. C. O. Sahler Sanitarium, Men-
tal and Nervous . . . See Page 245

Brooklyn—Dr. Chas. H. Shepard's Sanitarium . . . See Page 247

Dansville—Jackson Health Resort, J. Arthur Jack-
son, M.D. . . . See Page 248

Elmira—Dr. Everett's House, Edward A. Everett, M. D.,
Nervous and Mental . . . See Page 249

Rochester—Telfair Sanitarium, Wm. G. Telfair, M.D.,
Nervous and Drug Addictions . . . See Page 249

Katonah—Hillbourne, E. A. Sharp, M. D., Nervous.

Astoria—River Crest Sanitarium, Wm. F. Dold, M.D., Nervous and
Drug Addictions.

Gowanda—The Boeckel Sanitarium, H. N. Johnson, M. D., Ner-
vous and Drug Addictions.

Brooklyn—Dr. Morton's House, Mental and Nervous and Habit.

NORTH CAROLINA

Asheville—Dr. Carroll's Sanitarium, R. S. Carroll, M.D.,
Nervous, Habit and Mental . . . See Page 249

Asheville—Telfair Sanitarium, W. G. Telfair, M.D., Ner-
vous and Drug Addictions . . . See Page 244

TENNESSEE

Memphis—Dr. Pettey's Retreat, Geo. E. Pettey, M.D.,
Alcohol and Drug Addictions . . . See Page 244

TEXAS

San Antonio—Dr. Moody's Sanitarium, G. A. Moody, M.D.,
Nervous and Drug Addictions . . . See Page 248

Dallas—White Sanitarium, S. J. White, M.D., Inebriety and Mental.

WEST VIRGINIA

Chester—The Sterling-Worth Sanitarium, G. H. Benton,
M. D., Alcoholic and Narcotic Addictions . . . See Page 248

WISCONSIN

Wauwatosa—Milwaukee Sanitarium, Dr. Richard Dewey,
Nervous and Mental . . . See Page 248

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SANITARIUMS

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It is conducted on a hospital plan, each patient being made the subject of special study and special treatment suited to the requirements of the case. The general plan of treatment is to build up the physical system, restoring both mind and body to a normal condition. This is accomplished by the application of Turkish, Saline and Shower Baths, Electricity, Massage, Tonics, Diet, and every other means known to science, which by experience have been proved to be of value in these cases. Each case is under the direct personal care of the physician and superintendent, who resides in the house.

"The Home" is in charge of Dr. V. A. ELLSWORTH, who has had long experience in the treatment of inebriety.

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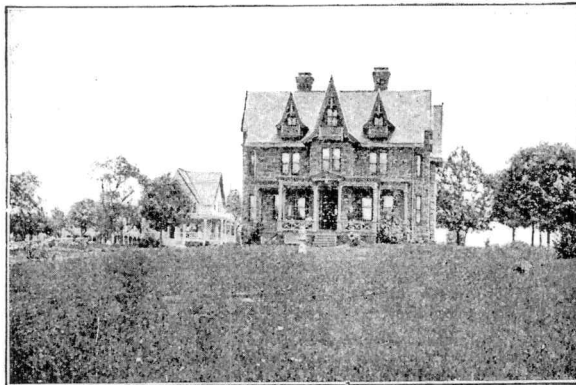
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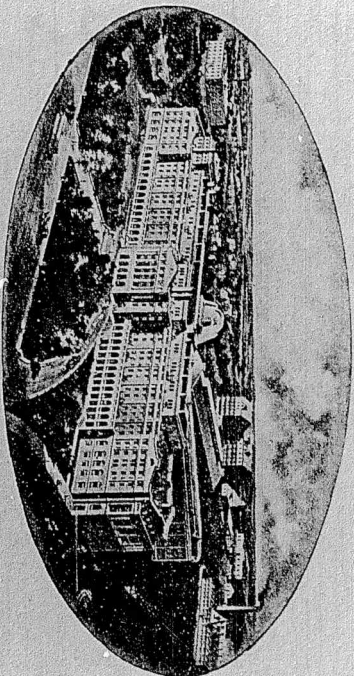
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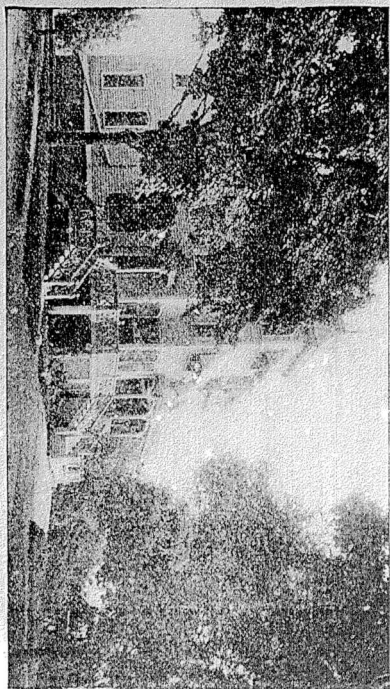
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The Battle Creek Sanitarium System of dealing with patients who have become addicted to drug habits differs essentially from the methods in common use, and especially in the following particulars: from his bondage to the drug habit, the patient is freed until his nervous system has been built up and his constitution fortified by the removal of the conditions which have led to the cessation of his resorting to drugs for relief.

1. No time is lost in endeavoring to cure until the nervous system has been built up and his constitution fortified by the removal of the conditions which have led to the cessation of his resorting to drugs for relief.
2. No reliance is placed upon hypnosis, suggestion, absorption, or any allied methods in treating these cases.
3. The patient is treated as one having a deteriorated organism which requires such a recuperatory, plethoric, and tonic course as is not usually given to patients of this class.

The patient is treated as one having a deteriorated organism which requires such a recuperatory, plethoric, and tonic course as is not usually given to patients of this class. This is shown very important part in combination with a proper regulation of the diet and such mental and moral discipline as may be needed.

Incurable, offensive, and insane patients are not received.



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Dr. C. O. Sahler Sanitarium

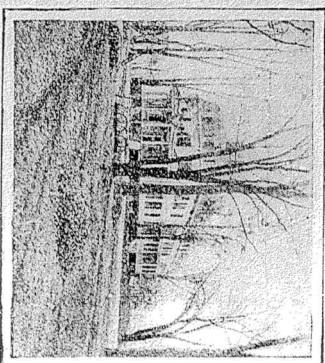
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This Sanitarium (large, new addition, modern in every particular) is roomy, homelike, free from all institutional features and erected with especial reference to the care and treatment of MENTAL, NERVOUS AND FUNCTIONAL DISORDERS by the PSYCHOLOGICAL METHOD EXCLUSIVELY.

Large verandas, cheerful, sunny rooms, and sun parlors are features of this place. Physicians and friends who have mental and nervous patients whom they desire to place in an institution, having the principles of home and family life, non-restraint, and having tried all other methods of treatment without success, should inquire into the merits of this Sanitarium. No insane cases received.

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Limited to the Treatment of

ALCOHOL AND DRUG ADDICTIONS

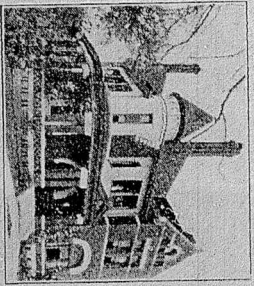
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For Terms, Address the Retreat Most Convenient to You.

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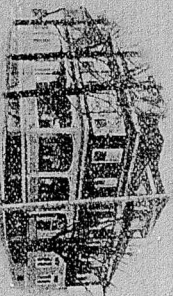
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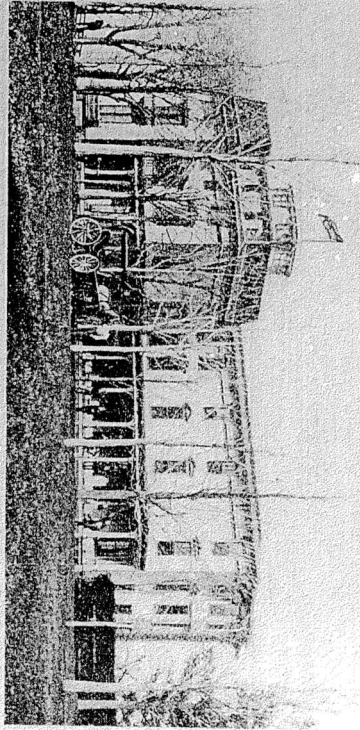
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Chester contains the Celebrated Rock Springs Park, a wooded reserve of 70 acres adjacent to the Sanitarium in which are every form of physically and morally healthy amusement and recreation, such as boating, Bathing, Bowling, Billiards, Roller Coasters, Scenic Railway, Theaters, Music, etc., etc.
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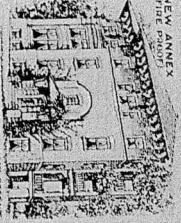
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Organized in 1880 for the special Medical Treatment of
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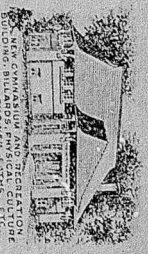
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Scientific and well equipped institutions for the treatment of Nervous Diseases, Alcohol and Drug addictions. Separate apartment for ladies, with trained nurses in attendance. Fully endorsed by the profession. For particulars address either Asheville or Rochester Sanitarium.



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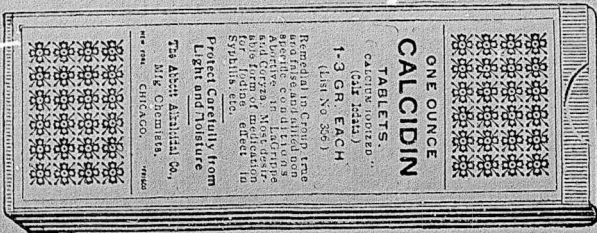
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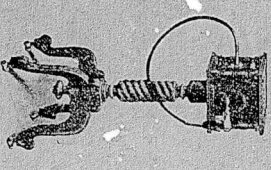
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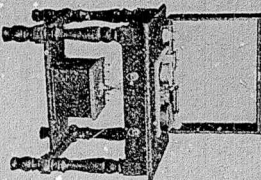
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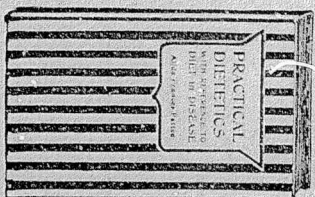
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See Page 244

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CONNECTICUT

Stamford—Dr. Barnes' Sanitarium, F. H. Barnes, M.D., Mental and Nervous Diseases

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Westport—Westport Sanitarium, Dr. F. D. Roland, Mental and Nervous Diseases

Hartford—Walnut Lodge Hospital, Dr. T. D. Crothers, Alcohol and Drug Addictions

ILLINOIS

Rockford—Dr. Broughton's Sanitarium, R. Broughton, M.D., Alcohol and Nervous Cases

See Page 247

Danvers—Willow Bark Sanitarium, F. J. Parkhurst, M.D., Inebriety and Drug Addictions

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Winnetka—North Shore Health Resort, Dr. I. H. Hirschfeld, Nervous Diseases

INDIANA

Indianapolis—Neuronhurst, Dr. W. B. Fletcher, Mental and Nervous

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Richmond—Glen View Sanitarium, Chas. W. Carter, M.D., Alcohol and Drug Addictions

Leavenworth—Evergreen Place Sanitarium, C. C. Goddard, M.D., Mental and Nervous Diseases

Kansas City—Grand View Sanitarium, F. M. Tracy, M.D., Mental and Nervous Diseases

MARYLAND

Touson—The Springer Sanitarium, N. A. Springer, M.D., Alcohol and Drug Addictions

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MASSACHUSETTS

Boston—Washingtonian Home, O. A. Ellsworth, M.D., Inebriety

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Arlington Heights—Arlington Health Resort, A. H. Ring, M.D., Nervous and Mental

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Attleboro—Atleboro Home Sanitarium, Laura V. Gustin, Macker, M.D., Neurasthenia

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