Volume 30 Number 1 Subscription, $2.00 a Year

THE JOURNAL OF INEBRIETY

ESTABLISHED 1876

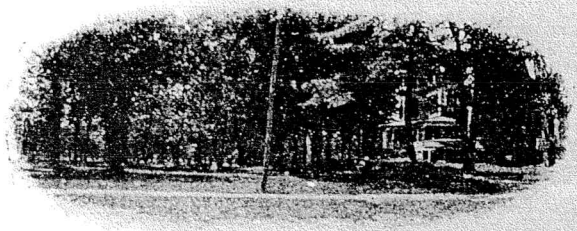
THE FIRST AND ONLY JOURNAL IN THE WORLD
DEVOTED TO SPIRIT AND DRUG NEUROSES

EDITED BY T. D. CROTHERS, M.D.

SPRING, 1908

RICHARD G. BADGER, Publisher, 194 Boylston Street, BOSTON

Entered as second-class mail matter April 10, 1906, at the post office at Boston, Mass.



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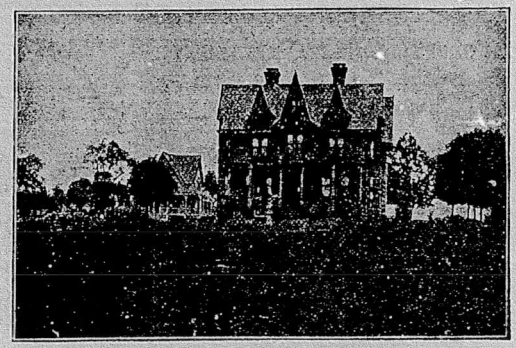

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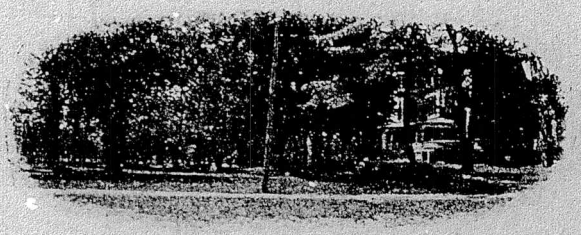

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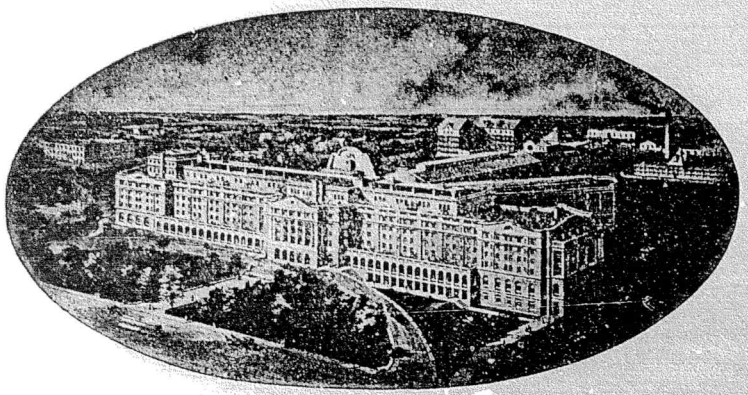

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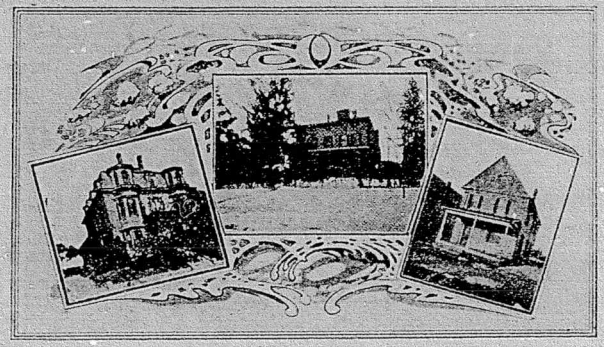

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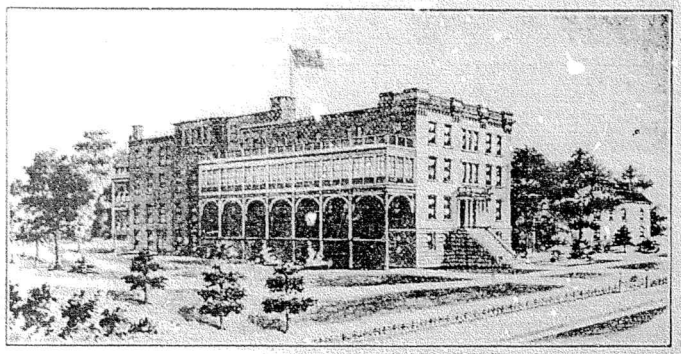

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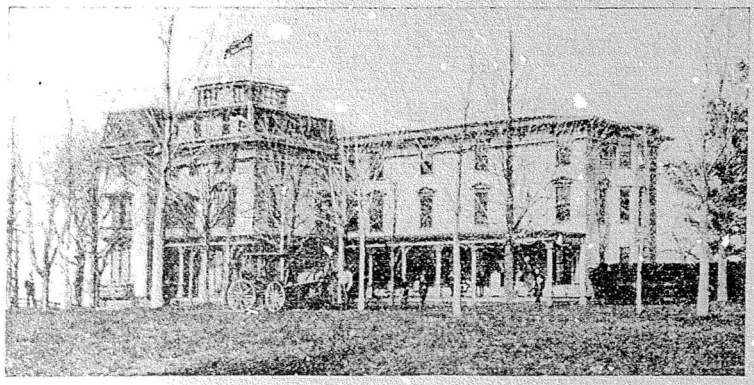

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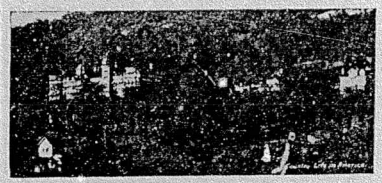

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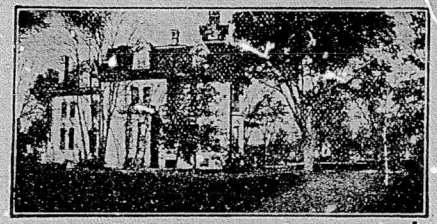

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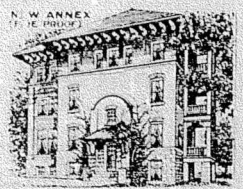

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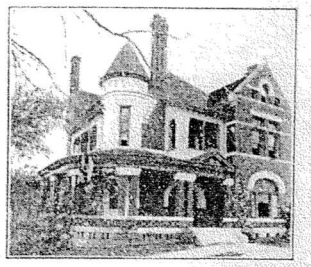

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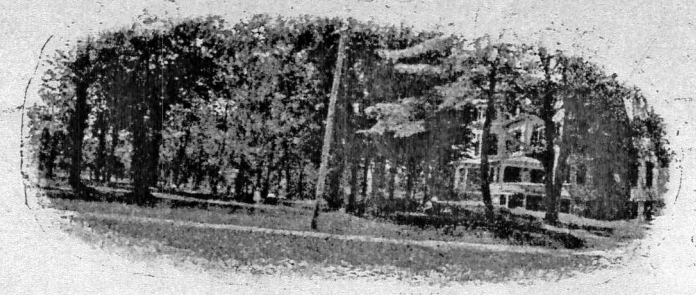

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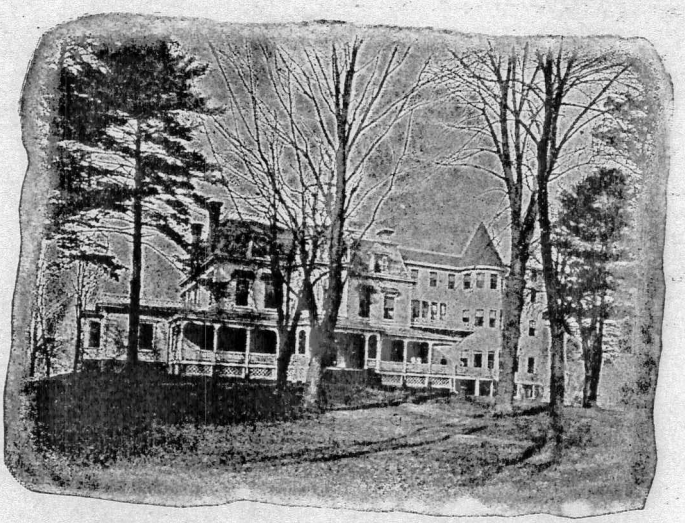

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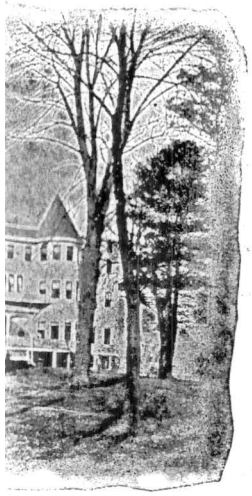

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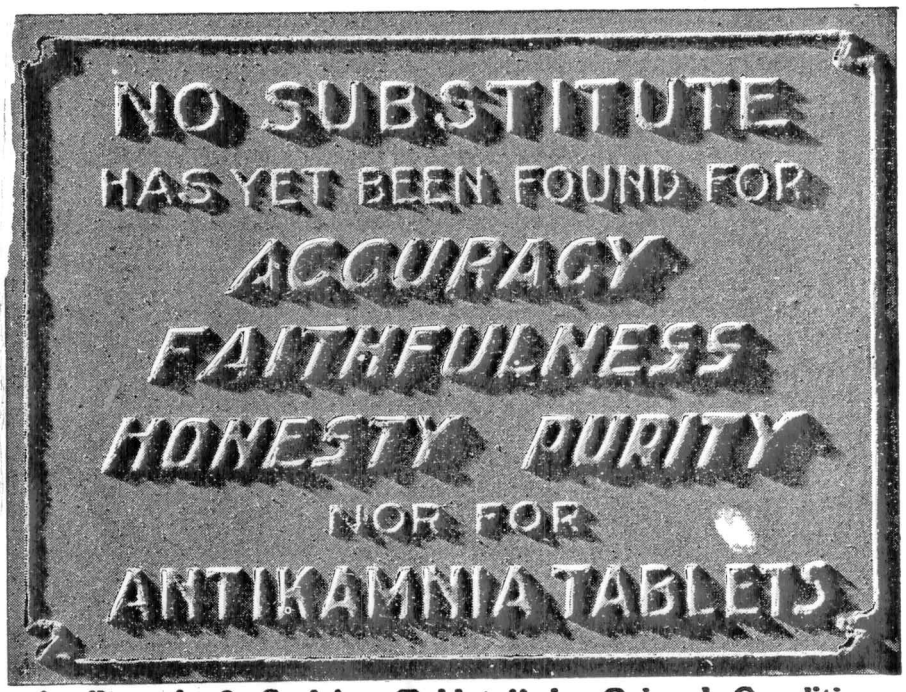

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A Menace to American Civilization

By

R. W. SHUFELDT, M.D.

THE JOURNAL OF INEBRIETY

SPRING, 1908

INEBRIETY—ITS CAUSATION AND CONTROL*

The Second Norman Kerr Memorial Lecture

BY R. WELSH BRANTHWAITE, M.D.
H. M. Inspector under the Inebriates Act

THIS symptom, again, is exceedingly common, and accounts largely for irratic behavior, whether it takes the form of drunkenness, immorality, or crime. In addition to drunkenness only about 15% of all cases admitted to reformatories have been quite free from crimes of violence, wilful damage to property, or larceny; the majority, indeed, have been committed many times for one or other of these offences.

There are few persons in ordinary life, even among the most sane, who are quite free from impulses to commit acts which are inconsistent with strict moral rectitude. The particular nature of the desire differs with the individual, and with the same person under different. Some for instance may be tempted to indulge an innate or acquired desire for alcoholic stimulation; others may have to maintain something like a permanent struggle against an impulse to defy the moral laws which regulate sexual indulgence; and there are many who are constantly insighted by impulse towards the squandering of money to gratify a desire of the moment, to corrupt business practices, or to other similar offences against a high standard of integrity and honor. Impulses regulate the actions of a child; but in later life if nervous development be normal, and educational surroundings are favorable, the brain assumes the regulation and control of impulse. The mechanism by which this

* Continued from Page 260, Winter Number of THE JOURNAL OF INEBRIETY

result is attained is exceedingly complicated, but the evidence of its existence is clear; (1) the acquirement of a sense of right and wrong without which, in the majority of its inhabitants no civilized community can exist; (2) the development of experience, arising from the stored memory of bad results from past wrong actions by the individual, or by persons with whom he is acquainted; and (3) a power of judgment — the faculty of choice between alternatives, the possession of which is the best proof that intellect has assumed the control of impulse. A well developed brain causes a man to hesitate before he strikes to avenge an insult in the street, although impulses urge the action. During the period of hesitation he brings his senses of right and wrong into use; he remembers a similar experience in the past which ended in a police station, and he decides that the action is unwise; his judgment has in fact controlled his impulse. But the antithesis to this illustration obtains in regard to nearly all habitual inebriates admitted to reformatories. Like children, they act upon impulses; they strike without intermediate consideration; they drink blindly, become unchaste and profligate, lie and steal, and commit wilful damage because their sudden impulses take those directions, and because power of control is wanting.

Associated closely with the symptoms last referred to, this third and last one is important enough to deserve special illustration. It is the defect of all others which causes trouble in reformatories, owing to the apparent possibilities of persuading inmates that their view of circumstances may possibly be an incorrect one. Two and two put together makes four, but any inmate who is satisfied that the same numbers make three or five cannot be persuaded to the contrary, notwithstanding the plainest demonstration. If driven into a corner by argument, they will simply state that their conclusion is true, and proceed to follow the course adapted by a losing barrister, and bully the demonstrator. Nothing somehow seems to appear the same to them in the same light as it appears to an observer of ordinary ability; the relationship between cause and effect is non-existent. They are restless, uncertain, excitable, and ready to take umbrage on the least provocation, or on flimsy

pretexts which would not be considered provocation by reasonable beings. A glance, a word, and an innocent action, not by any means intended to give offense, is construed as contempt, vituperation, or meditated attack, and is resented accordingly. In their view law-makers are tyrants, and the servants of the law but instruments of organized persecution. The constable who arrests, the magistrate who convicts, and the persons who detain are in league together to inflict injury, presumably for the sake of pleasure and gratification. No power on earth will persuade them otherwise. There is usually no sign of sorrow for the disorderly results of inebriate habits, both drunkenness and disorder being denied or justified, notwithstanding the obvious ill effects of the former and ample evidence of the latter. It is useless to point out defects in their arguments, for they are incapable of exercising the faculty of judgment, or reasoning any question to a conclusion. Indeed, if an attempt be made to crystallize a grievance or explain a position, the inmate is inattentive, and makes no effort to follow or understand the explanation; the interview usually ends with a repetition of the same silly or irrelevant conclusions with which it started. Judging from the life history of these cases, we are driven to the conclusion that the defect has excited from birth or early age, and the habitual drunkenness has been largely due to impaired judgment throughout — to a faulty power of appreciating the immediate or ultimate result of an action.

It is with a sense of relief that I turn from my first three groups to one which contains at least some persons who are only affected to a partial degree by malign influences. It would have been pleasanter for us all if I could have glossed over the unpalatable part of my subject, and given a general hopeful of the treatment of the inebriate, whether mentally defective or not. But we are attacking the subject from a scientific standpoint, and no good is to be done by endeavoring to emulate the charlatan and the misguided philanthropist in their barefaced promise of unfailing cure. Owing to their mentally defective state, it is practically impossible to do other than write of all persons who merit inclusion in one of my first groups as practically hopeless

from a reformation standpoint. Nothing short of a miracle can convert them from what they are, into sane and sober individuals. Unfortunately, we cannot say that the forth group, because of the absence of obvious defect, is composed entirely of reformable individuals. The transit from the consideration of earlier groups to the present one is rather a change from bad to better than a move from bad to good. Too many of the cases included in this group, although not obviously so, are nevertheless tainted with some of the conditions already described, and consequently hopefulness or otherwise depends entirely upon the degree of defect. The nearer any case in this group approaches the type included in groups 2 and 3, the less the benefit likely to be derived from care and treatment, and vica versa. Every remark I now and hereafter apply to the class of inmates, distinguished by the mark of "average mental capacity" is equally applicable to patients detained in retreats; we shall find that all present the same characteristics if the element of education, which makes the latter appear better than selected reformatory inmates, is not permitted to influence our judgment. Furthermore, I think we are quite safe in extending the scope of our observations, regarding the present group, to all confirmed inebriates whether or not they happen to be under detention in institutions. At any rate, we shall be absolutely safe in so doing if we remember that any conclusions we arrive at, are subject to modification according to the degree of defect which may vary in extent from a slight deviation to a condition just sufficiently good to avoid being placed in Group 3. So far as my experience warrants an opinion, I think I may safely say that I have rarely been brought into close contact with an inebriate, irrespective of class of status, inside or outside an institution, without being able to discover evidence of one or other of the three conditions which are so evident in the advance types we have already discussed.

Impaired development of moral sense is undoubtedly to be found in most of them — disregard to truth, a tendency to immorality, preference for undesirable company, carelessness as to business matters, wilful squandering of

property, sometimes without regard to ownership, and often without care for reserving misery to persons who should be protected, neglect of domestic responsibilities false, and malevolent assertions concerning people who are nearest relationship, cunning deception, and unreasonable resistance to the suggestions of those who advise for good, are all common traits which tell their own story. All these evidences are not to be found in each individual case; but one or more of them may always be discovered without difficulty.

Imperfect control over impulses is similarly evident in the majority of these milder cases and can perhaps be recognized with greater ease than the foregoing. Notwithstanding apparent capability of resistance, promises good intentions, and full knowledge of evil results, a sudden impulse to drink, even after months of abstinence, is yielded to without an effort at restraint. Asked why, the only answer forthcoming is, "I don't know why I did it; I just had to." I have known men to suddenly cease work or play to go off, no matter where, because the impulse took that form, and I have known them to smash tools, tennis racquets, and billiard cues, because of some trivial error or mischance. I have myself suffered more than once from acts of impulse occurring in persons with whom I have been, at the time, on the best of terms. Appologies and real sorrow for these sudden acts follow immediately, and the impulse is usually satisfied and exploded in the act, which, having found vent, is no longer felt for a time. This condition bears close resemblance to an epileptic seizure, and sometimes, like epilepsy, restlessness, or other definite symptoms preceed the attack.

Misinterpretation regarding the meaning of occurrences, suspicion concerning the acts of relatives (almost amounting to delusion in some cases) accusations of injustice and bad treatment, justification of irratic actions, and denial of habitual drunkenness, despite ample evidence to the contrary, are some symptoms to be found in most cases pointing to defect in power of judgment.

All these signs found in milder cases are merely variations of the more definite characteristics which accom-

pany the advanced condition and definitely indicate a pathological lesson which is identically modified only in degree.

To make the story complete, it is impossible to avoid some reference to this phase of the subject. Time, however, will not permit of more than a very brief outline, and a promise of future attention.

As predisposing causes, I place in order of importance: (1) a neurotic heredity, especially of mental disease, epilepsy, or similar defect which has caused habitual drunkenness in forbears; (2) imperfect nutrition during fetal life, and the influence of alcohol-drinking by the mother during pregnancy; (3) injury at birth; (4) the administration of alcohol during infancy; (5) falls, blows, or other injury, and bad feeding or general neglect during childhood; and (6) any shock, injury, or disease during later life which affects the nervous organizations injuriously, and thereby impairs vitality and resistance to impulses.

Given these conditions, or some of them, the exciting causes may practically be summed up in one word — environment. The absence or moral training during youth, together with the constant presence of drunkenness and vice, are sufficient to explain the conditions which evidences the defect, or the development into an active state of an imperfection which might otherwise remain dormant.

Concerning treatment much might be said, but like the foregoing section, this question also requires more time and space, for full consideration, than is now available. Notwithstanding this it may be desirable and useful to indicate broadly the principles which tend to good results in the treatment of cases such as have been described. The various agencies applicable to these cases may be classed under three main heads:

(1) Influences which incite or strengthen moral resolution;

(2) Medical treatment; and

(3) Control and enforced abstinence.

I think it cannot be too definitely stated that all influences which incite or strengthen moral resoluton are useful only when applied to inebriates whose mental condition approaches the normal. Success as the result of

such methods will always be in inverse proportion to the amount of existing defect. If an inebriate possesses a fairly developed normal sense, some measure of control over impulses, and moderate power of judgment, these attributes, or the exercise of them, may undoubtedly be strengthened by various influences; but if such qualities are rudimentary or badly warped, the outlook is bad. The influences which fall within this category are practically those which substitute for free volition temporary dependence upon a course of life detained by others. As instances, I have known a few inebriates who have ceased their drunken habits and have apparently regained complete control over themselves as the result of religious enthusiasm. I have also known others who have been able to attain the same end through the mere influence of persons of strong individuality, in whom they had confidence, and under whose direction they were willing to order their lives. There have also been cases apparently cured by hypnotic suggestions, and a fair number have recovered through the agency of faith cures, quacks medicines and other measures closely approaching humbug. All the influences have been known to produce good results, dependence and trust having temporarily supplanted free agency, until some amount of self-control has been regained, and the patient finds himself able to stand alone.

Owing to an imperfect recognition of the mental aspect of habitual drunkenness, much more reliance has been placed upon the value of drugs than is warranted by results. In my opinion drugs are extremely valuable — indeed, necessary — for the relief of unpleasant symptoms during the transition from long continued drunkenness to enforced sobriety and to avoid many complications which may occur during this period of "knocking off." They are also necessary when acute symptoms of alcohol want have disappeared, as aids to the removal of temporary damages resulting from excessive indulgence, and to help towards recovery to good physical health. Any person who attempts to treat habitual drunkenness without the use of drugs for these two purposes is neglecting potent influences for good. Further than this, I am not prepared to accord any value

to the administration of drugs, and my reiterated belief is the mental origin of drunkenness renders it unnecessary for me to state an absolute unbelief in the possibility of the existence of a specific.

Some mention should be made of hygienic measures, as essential factors in the medical treatment of habitual drunkards after acute stages are passed. Regular life, good food, work and amusement, are all necessary — in short, all the same principles must be adopted which are found desirable in the treatment of the insane.

I see no reason to object to the exercise of every possible influence which might conceivably produce good results before physical control is resorted to; the attempt to avoid restraint is both natural and desirable. Experience shows, however, that resort to physical control is too often delayed until it is useless to apply it, too much valuable time being wasted in fruitless endeavor to attain the object in view by mild measures, notwithstanding proof of worthlessness and repeated failure. By all means let every chance be given of possible benefit by other methods, but when failure results, no further delay should be permissible in the best interest of the patient. Control should be applied before the original defect is increased by added degeneracy. Some persons are sufficiently normal to be amenable to moral influences, others are not; when the latter require to be dealt with, no efforts will have a reasonable chance of success in the absence of compulsory control. The first principle in the treatment of habitual drunkenness is the removal of alcohol. If by the exercise of ordinary home influences abstinence can be secured, well and good; medical treatment and moral influences can be applied with some hope of success; but when a patient cannot be so restrained all else is worthless. All inebriates must require control in some form or other, because they are admittedly incapable of self-control, otherwise they would not merit their designation. The amount and character of control necessary for each individual depends entirely upon his mental state; if he is too bad for effective home control, something more powerful should be applicable to his needs.

It has been argued that, if sufficient defect exists to

prevent good results from mild measures, control and enforced abstinence are likely to be of any avail. It is only necessary to watch some cases in reformatories to see how wide from the mark is this statement, and what advantage might result, even to some of the worst, had earlier control been applied. Moreover I have known many persons admitted to retreats, apparently hopeless, who have left, after some months' detention, free from all signs of abnormality. The subsequent history of such cases, after ten to fifteen years has elapsed, justified a hope of good result from enforced control, even in some apparently hopeless cases, certainly in many which have been unaffected by milder measures.

With reference to treatment and control, the main points I want to emphasize are: (1) The necessity for greater attention to neurotic and psychopathic indication; and (2) the necessity for an earlier recognition of these conditions, with a view to the timely exercise of effective control in cases which cannot possibly be benefited by milder measures.

Unfortunately, however, the only chance for an attempt at early control rests with the inebriate himself, no power being available for interference with his wishes. Seeing that his habitual drunkenness has been mainly due to defect in moral sense and power of judgment, his wishes are not likely to help much, and it is not surprising to find that by far the greater number of victims fail to recognize their state, see no necessity for amendment, and decline to take any steps towards remedying something, which in their opinion does not exist. In other words, just at the time when a little compulsory treatment might be of the greatest possible advantage, no power to apply it exists; time is wasted, and opportunity for good is lost forever. Only those in close touch with inebriate reform work know how many attempts are made to induce inebriates to consent to place themselves under treatment of some sort, and that an enormous percentage of such attempts result in failures. When consent to treatment cannot be obtained, subsequent history depends upon the pecuniary circumstances of the inebriate and his social status? If he is wealthy and no

personal influence exists strong enough to induce him to take action of his own accord, only death will end the scene, unless illness or increased mental defect affords no opportunity for the application of suitable treatment or restraint. If in a good position, but not wealthy, no person can interfere until such position is lost or jeopardized, and impending poverty and disgrace places the drunkard in the hands of his friends. More often than not it is then too late.

As a general rule, except as the result of impulsive violence, the better class inebriate manages to keep out of the clutches of the law. He is surrounded by friends who protect him from the possible results of his habits — for his own advantage, and to prevent a family disgrace which would bring discredit upon all concerned.

In much worse cases is the inebriate member of the lower classes. Friendless, or with friends who have neither time nor money to hedge him round with protective influences, he drifts into a course of degradation which is increased by the means commonly used to prevent him from being a nuisance and danger to the community. When he becomes drunk there is no kind hand to hide his weakness or take home; he is "found drunk" in the street, arrested, and fined or imprisoned. The fines, be they small or great, are rarely forthcoming; consequently, this treatment soon resolves itself into prison, prison, prison and again prison. The degenerating and hardening effect of gaol life upon habitual drunkards is fully realized, and the advanced defective state to those inebriates who have been sent to reformatories is undoubtedly due largely to the preceeding years of laternating drunkenness and prison. Regarding as a remedy for habitual drunkenness, especially when we remember its mental basis, oft-repeated confinement in prison is indefensible and inhuman. That such a course should ever have been established is evidence of old time ignorance concerning the neurotic aspect of the condition; that, in face of all evidence of usefulness, it still persists, is inexplicable.

It is for a society such as this to seriously consider whether or not some means cannot be devised to remedy this unsatisfactory state of affairs, and if found, pressed

home with a view to early adoption of generally improved methods. It is quite useless to wait and hope for universal abstinence to provide a remedy; the evil must be attacked in a common-sense manner, as a mental problem under existing conditions, in the presence of alcohol. Only three and a half million out of something like forty or more in the kingdom are teetotalers; we cannot afford to wait until the remainder are converted, or until alcohol is banished from the world. Total abstinence societies have been established for something like a hundred years, with the result that moderate people have become more moderate, and many moderate persons have become teetotalers. An excellent result for excellent work, because abstinence and strict moderation is conducive to good physique, national health, and national prosperity. It is also probable that some mentally unstable persons have been saved by abstinence from becoming drunkards. But has the actual number of habitual drunkards decreased as the result of all this temperance energy? I think not. The hundred years, of course, a matter of history so far as I am concerned, and I have insufficient confidence in the value of statistics to pass an opinion concerning that length of time; but I can say something about the last twenty-five years, which I have spent entirely among drunkards and drunkenness. I do not believe, during that period, that habitual drunkards have increased and so far as women are concerned, I am convinced that it has materially increased. The reason seems to me plain enough; while temperance workers have succeeded in inducing the moderately strong minded temperate man to exercise restraint and avoid alcohol, they have been unable to do much towards obtaining the same result in regard to the very persons who need it most, those who cannot realize the fact, or carry out the remedy. While temperance societies have been preaching teetotalism to persons capable of listening to, and benefiting from the appeal, thousands of persons are drinking daily in the slums of London, and making other drunkards by force of example and precept. These persons are not in the least affected by orthodox temperance efforts; they continue to propagate drunkenness, and thereby nullify the good results of tem-

perance energies. Their children born of defected parents and educated by their surroundings, grow up without a chance of decent life, and constitute the reserve from which the strength of our present army of habituals is maintained. Truly we have neglected in the past, and are still neglecting the main source of drunkards supply, the drunkard himself; cripple that, we should soon see some good results from our work.

There is much to be done and much this Society could do to help in the direction of improvement; indeed, I know of no one better constituted for the work. What we want is full consideration of the possibility of stronger legislation, enabling earlier control and treatment of inebriates, irrespective of their personal opinion as to its necessity. It is also desirable to consider whether, as a first step, the principle of guardianship already adopted in other countries, could not be made applicable to the needs of England; and whether in the event of failure to produce good results by guardianship, power should exist for compulsory commital to institution care on certificate and evidence. It is also well to have a well discussed opinion as to whether, after years of control, and after every possible effort at reform has been tried, continued drunkenness and evident mental defect should not warrant an indeterminate sentence, with occasional license to be at large; whether some arrangemen s could not be arrived at to render impossible the future manufacture of habitual drunken prison recidivists. These are all matters upon which the evidence and opinion of this Society would be valuable, and subjects which seem to be of the utmost importance. I am not prepared to say that a satisfactory solution of any one of them is yet with the range of practical politics; but unless some distinc effort is made, I am satisfied that none ever will be.

QUESTIONS OF POISON-TOLERANCE*

BY PROF. DR. MAX KASSOWITZ OF THE UNIVERSITY OF VIENNA

THAT one may so accustom himself to a poison that he can finally take an amount, that would ordinarily be fatal, without harm to himself, has been known for a long time. We learned in school, that King Mithradates feared poisoning; so he accustomed himself to large doses of various poisons. Galenus tells us that an old Athenian woman acquired a tolerance for large quantities of conium, in this way. What interests us in the story of Galenus is the fact, that he formulated a theory of immunity to poison upon this experience, in which he declared, that by growing accustomed to a poison, it becomes an apparently natural constituent of the tissues. Even now in spite of our broader theoretical and empirical knowledge, we have nothing much better to offer in explanation.

The advance of our knowledge of poison-tolerance does not lie in the large number of poisons experimented with, for our researches have only extended to arsenic, opium, morphine, nicotin and alcohol; and lately, we can add to this the immunizing experiments of Ehrlich, with the vegetable poisons, ricin, abrin and crotin. Although the number on our list is not imposing, the use of opiates and the alcohol and nicotin habits have become so general that we have almost unlimited opportunities for observation and the facts concerning poison-tolerance can no longer be doubted.

In explaining these facts we naturally think first of a form of antitoxin, since it plays a rôle in those vegetable poisons experimented with by Ehrlich. Although isolated positive statements, for some time, have been made in regard to it, we are now sure, from numerous control tests with negative results, that there is no antitoxin developed against morphine or alcohol. Wholly different factors, therefore, must underlie the tolerance established against these two drugs.

Naturally, if we would know on what the toleration depends, we must know what the action of the poison is,

* Translated by Kent Oakley Brown, M.D.

where it takes place, and what are its direct results in living bodies. We can answer these questions with some accuracy. The point of attack is the protoplasm and its action consists in a more or less widespread destruction of its cellular tissue. It is believed that all living protoplasm is extraordinarily sensitive to chemical action. It is destroyed by a comparatively moderate, mechanical, thermic or electrical force, and it is not thought likely that it would react differently to chemical energy. Indeed, the chemical effect from a weakened action of the poison is not different from that resulting from a weakened mechanical, thermic or electrical irritation.

In offering an explanation, it can be said, that it is believed that the poison-molecule either as a whole or through a single atom or atom group strongly attracts a certain part of the protoplasm-molecule. The latter being highly complex is especially easy to decompose. In some cases we suppose that this attraction is deficient, so that these protoplasms are spared by a poison, where others are promptly destroyed. In cases where the tolerance is not natural, but acquired, we believe that the protoplasm-molecule has suffered the loss of its earlier affinity. Acquired immunity to poison is specific; that is, a person accustomed to alcohol, for example, is not, because of this, indifferent to nicotin; neither is the one accustomed to nicotin necessarily indifferent to alcohol. Now the chemical structure of this protoplasm-molecule must be so altered that susceptibility to the toxic action is plainly lowered.

It is a fact that increased vital activity, for example, increased muscular exercise, is not accompanied by a corresponding increase in the elimination of nitrogen, and therefore by no corresponding increase in the disintegration of albumen. The increased activity of the protoplasm in this case depends on a more frequent repetition of the irritation, which consists, as we have said, of the decomposition of the chemical units of the protoplasm; and it is believed, that the atom-group attracted by the poison-molecule is an albumenous one, and that the two remain united, and are appropriated in the reconstruction of the new protoplasmic structure. Now, as it is well known, identically

formed chemical groups do not mutually attract each other, so we could understand why the protoplasm, modified in this way, would attain a certain degree of immunity to the poison, and indeed, would directly oppose the action of that poison, by whose influence it has now attained that modification.

It is well known that tolerance to poison is not the only result of its action, but almost always there is associated with it, especially in the case of the nerve-poisons, the well-known thirst; that is, the desire for larger and larger quantities. Now it is exactly these undesirable subsidiary effects that are the cause of the alcohol-evil. If, with the getting accustomed to it, its results were all accounted for, we would have no ground for opposing the habit or for the existence of the abstinence movement. But the medal has two sides. One side shows us apparently a friendly picture; for it, shows us that the condition of drunkenness is beginning in one not yet accustomed to comparatively moderate doses, and that it is wanting, when one has grown immune to either small or larger quantities. An odious caricature grins at us from the reverse side; for it shows us that not only must one drink more to be intoxicated, but the initial feeling of pleasure, for the sake of which one indulges himself, is also deferred.

This sensation of pleasure becomes necessary and its omission brings a feeling of discomfort. Since the susceptibility and sensitiveness of the nervous-protoplasm has been lowered, the removal of the feeling of discomfort requires larger and larger quantities. When the quantity passes beyond a certain limit, some of its effects are accompanied by perceptible subjective manifestations, while others though serious, cause almost no sensations, and effect chiefly other organs than the nervous tissue: first the mucous membrane of the stomach and intestines, then the cells of the liver and the kidneys, the walls of the blood vessels, the muscular fibres and finally, even the connective tissue of all organs, with congestion of the nerve sheaths and meninges of the brain. In all these structures, there are distinct transformations, [illegible] ally perceptible only by the microscope, but at times visible to the naked eye, or even

accessible to palpation. These changes are not transitory as the initial irritation in the nervous protoplasm, nor are the former more or less compensated for, as the latter are, by the prompt reconstruction of the disintegrated protoplasm. Under the continued influence of the poison these lesions are constant, for they either consist in a fatty degeneration or they assume the character, especially in the connective tissue, of an inflammatory process with its well-known results.

In this there is nothing to explain poison-tolerance. Those factors, which we thought explained it, are suppressed here, namely, the breaking up of the molecular structure of the protoplasm, with the absorption of the toxic atom-group in its reconstruction. There is, therefore, no tolerance set up in the protoplasm of the liver and kidneys, the heart-muscle and the connective tissue of the organs exposed. The course is progressive; there is the demand for more and more of the poison to produce the desired effect, until that pathological condition is reached, that swells the ranks in the offices and clinics of our general practitioners, hydropaths, oculists, neurologists, psychiatrists and finally the pathological anatomists.

With this, my task proper ends, but before I close my address, I cannot refrain from discussing the relation of these fascinating facts to the teleological understanding of the life process, which has lately come into prominence. In biology, the view has been gaining credence that the life processes are not carried on in accordance merely with the laws of casuality, as in inanimate nature. In addition they are governed by the principles of utility. The theological and the teleological principles used to be considered identical; now they speak of "intelligent forces," that are operative with the physical and chemical forces, and that so govern them that they serve the purpose and necessity of the organism. The advocates of this time honored teaching, following a somewhat more modern bent, have a special predilection for the facts of immunity. We can say in regard to tolerance to alcohol, that if the "intelligent forces" are there, they have given no special proof of their intelligence, and still less evidence of friendship to the

organism sheltering them. Although to the superficial thinker this immunity appears to serve so beneficent a purpose, in reality it proves an evil that the alcohol habit has brought to all civilized mankind. Those of us who have taken up the battle against inebriety, must perceive our grandest mission in making amends for the more than doubtful benefit of poison immunity by the only trustworthy means, that of total abstinence from the poison.

THE ACTION OF ALCOHOL ON THE SIGHT *

BY DR. GEORGE B. CUTTEN, COLUMBUS, OHIO

OF the special senses affected by alcohol, sight suffers the most. This is seen not only in the hallucinations of vision so common in most cases of alcoholic insanity, but in actual eye affections as the result of continued indulgence, and sometimes in total blindness. It is difficult to posit the specific cause in many cases, and while many investigators lay emphasis on local troubles, others again find the difficulty in central disorders.[1] Probably both are right, for the influence of alcohol on the nervous system both central and peripheral is well known, and this together with vascular disorders accounts for all the abnormalities which we are able definitely to trace. As with so many other disorders, we are not able to show a direct and proportionate relation between the known lesion and the recognized effect, nor in some cases are we able to detect the lesion at all. We will attempt to give some of the recognized physical changes due to alcohol.

A very common and most serious change wrought by

* This contribution from Dr. Cutten will be of special interest from the fact that farther and more elaborate discussions will be found in his work on the "Psychology of Alcoholism" which can be had from Chas. Scribner's Sons of New York City.

[1] W. L. Andriezen (1903). Annual meeting of the British Medical Association, British Medical Temperance Review, vol. 6, page 269. "The conditions of the chronic alcoholic were due not to changes in the periphery or cord, but in the brain. . . He had found in post mortem examinations distinct evidence of changes in the cortex in those who had had visual hallucination, and had been able to affirm these before he knew his history of the case."

alcohol is the atrophy of the optic nerves and their terminations.

"According to a total of 166 cases (a trophy of the optic nerves) gathered by Galez Owski — 9 per cent are due to alcoholism"[1] Uhthoff refers most of the changes in vision to this cause.[2] In reference to this, Spitzka reports the case of a gentleman in later years suffering from alcoholic dementia, in whom "the distinguished ophthalmologist, Knapp discovered a trophy of both optic nerves some years before mark mental impairments had set in."[3] This is usally shown in the discs, sometimes in only one or in both eyes. It commences with simple congestion, uniform redness of the disc with softened edges, gradually passing into neuritis or papillitis with paller discs and slight œdema. This condition of neuritis is found in chronic alcoholism, and in post-mortem examinations shows itself in thickened and opaque meninges.[4] Uhthoff examined a thousand cases of severe alcoholism in inmates of asylums and found that 13.9 of these suffered from pathological whiteness of the temporal half of each disc, with a central scotoma in every case. He found this condition in only one out of 100 apparently healthy men whom he selected for comparison. Moreover Meoli has stated that he has detected changes in the optic disc in 15 per cent of the cases of delirium tremens examined by him. When the condition of the nerve has been ascertained by microscopical examinations, granular degeneration of the nerve fibers has been found in some cases. Out of seven cases examined post-mortem by Uhthoff, two showed interstitil neuritis, with marked increase of the connective tissues. The changes were most distinct just back of the globe and did not extend far back."[5]

As the trouble progresses a trophy follows the neuritis.[6] In addition to diseased nerves and disc, we find that at

[1] H. D. Noyes, disease of the eye, page 314.

[2] W. H. Welch "The Pathological Effects of Alcohol," Physiological Aspects of the Liquor Problem, Billings, vol. II, page 371.

[3] R. C. Spitzka, Insanity, page 232 note.

[4] H. D. Rolleston "Alcoholism". A System of Medicine, Albutt, vol. III, page 53 says "Optic neuritis in alcoholic subjects may be due to chronic meningitis.

[5] W. R. Gowers, Medical Ophthalmoscopy, page 274.

[6] Wernicke mentions a trophy of the optic nerves following alcohol stupor (Grundriss der Psychiatrie).

times there is a pathological condition of the retina. The neuritis may cause some changes to the retina as, *e.g.*, white spots, but a few cases of double retinitis have also been noticed in chronic alcoholism.[1] Milder affections of the retina are more common. Dr. Gowers[2] reports one which we quote: "In a fatal case of alcoholism, Lofford, during life wide spread cloudiness of the retina, with normal disc and without any central color scotoma. After death the retina of one eye was examined by Edwards and himself; there was œdema of the nerve fiber, and ganglion cell layers, and in the outer nuclea layers there were spaces filled with a clear effucion, between the Mullerian fibers."[3]

The change in the pupil is quite noticeable, but the descriptions vary, the agreement being that they are not normal. They may be dilated or contracted, and may or may not fail to react to light and accommodation. Hyslop affirms that where there is a failure of reaction to light, regardless of whether the pupils are dilated or contracted, there is almost invariably a history of syphilis in addition to that of alcohol. "Inequality is present in about 40 per cent of the cases, and irregularity of the margin is also comparatively frequent."[4]

The inequality of the pupils is not so significant as the failure to react to light. The cornea may also be affected so that its transparency is duller.

On account of the appearances of eye catarrh during delirium tremens, disappearing with a critical termination, some have concluded that the alcoholic poison has an inflamatory effect upon the conjunctiva, similar to certain

[1] One case has been reported by Dr. Sharkey, Transactions of the Pathological society, London, vol. XI, page 359. Dr. Ord has also reported a case.

[2] W. R. Gowers Medical Ophthalmoscopy, page 275. Reference is also made to apacity of the retina by the same author: Disease of the Nervous System, vol. 2nd, page 975.

[3] Acute Alcoholism does not often exhibit any disorders, but Gager found a case of retinitis in delerium tremens.

[4] D. H. Tuke, "Alcoholism" Dictionary of Physiological Medicine, "Pupils are dilated and do not react well to light changes, "T. L. Brunton. "The face and pupils in alcoholic neuritis," British Medical Journal says, "I have noticed that the reflects of the pupil to light are rapid and extensive, where as the contraction of the pupil on accommodation to a near object is slight and sluggish, or entirely wanting. Indeed in one or two cases I have observed a dilation instead of contraction on accommodation."

bacterial poisons. The most common disease of alcoholism is called amblyopia, which may preceed any ophthalmoscopic change. It is more common in regular than periodic drinkers. It varies in degree from a slight dimness of vigor to dullness and defect in the recognition of certain colors. Tobacco amblyopia is well recognized and is so similar that some observers affirm that tobacco is the soul cause, most alcoholics being also users of tobacco. The alcoholic cause, however, seems to be well established now. Dalezowski found dyschromatopia for green and violet which he looked upon as a symptom as ritinal to anæsthesia. Before the defect for white light is recognizable, the vision for red may be found defective, extending over that portion of the eye from the fovea centralis to the blind spots. At first this can only be tested at very short distances; both the red and green appear as different shades of grey. The field of vision may be restricted for a time, but recovery is frequent.

It is not on account of a revival of sensitive consciences that the railroad directors have begun a rather sudden crusade against the use of intoxicating liquors and tobacco by employees engaged in operating trains; but it is the recent recognition of this disease of amblyopia as a result of these indulgences that has been the cause of the strict orders in regard to the use of these things. The central scotoma, which deprives the patient of the recognition of red and green, is disastrous to the railroad employees, for those are two colors most exclusively used in operating trains. So insidious is the appearance of this disease that only an accident may reveal to the engineer that he is unable to recognize the signals. Of course there are other reasons on the part of the directors for their desire to be rid of drinking men, and intoxicated men are not tolerated, but this one reason is enough to discourage the employment of tipplers.

De Schweinitz[1] shows the relative proportion of causes of toxic amblyopia in the following table: —

[1] G. E. de Schweinitz, The Toxic Amblyopias. See also "The Toxic Amblyopias; being a review of some Recent Literature on the subject." Ophthalmic Record, April, 1902, where he says, "On this point the statistics of Alder are important. Among 100 private patients he concludes that alcohol was the greatest factor in 86 per cent, but nearly all the patients smoked more or less; only 4 per cent maintained that they were non-smokers. In 12 per cent the patients smoked and did not drink. In his hospital practice there were 19 per cent of nicotine amblyopias and 81 per cent of alcohol amblyopias, but he frankly admits that the testimony of the patients, in so far as their habits were concerned, was not trustworthy. . . Uhthoff's examination of 327 cases of intoxication amblyopia revealed a pure tobacco-amblyopia in 41 cases. The remaining 286 are divided about equally into cases of alcohol-amblyopia alone, or when alcohol was the most potent factor, and cases subject to the "mixed influence of alcohol and tobacco."

Alcohol	64
Alcohol and tobacco	45
Tobacco	23
Diabetes	3
Bisulphid of carbon	2
Lead	1
	138

We can see how potent alcohol is in the production of this disease, which is recognized by all authorities to be followed by such grave consequences,[1] and according to some authorities it is increasing rapidly in America at least.

Recently a number of cases of amaurosis have been reported, caused by methyl alcohol.[2] The same effect has been produced by inhalation as by drinking. Of the former method of receiving the blinding effect, most cases, concerning which publicity has been given, have been seen in men who have been employed in shellacking beer vats, where the shellack was mixed with Columbian spirits. Ventilation of the vats was almost completely shut off. In one case the patient was completely blind for one week, then improved so that he could distinguish large objects, when again vision began to fail.[3] Causes of death and blindness are not uncommon as a result of drinking wood alcohol.[4] In this case the patient, a woman, drank a bottle of clear alcohol,

[1] "The toxic effect may be produced by alcohol, tobacco, lead or quinine. The amblyopia met with in drunkards (amblyopia potatorum) generally commences with the appearance of a mist or cloud before the eyes, which more or less surrounds and shrouds the object, rendering it hazy and indistinct. In some cases the impairment becomes so that only the largest print can be deciphered; but the sight may be completely lost."

[2] See H. V. Wurdemann, "Blindness from Inhalation and Indigestion of Methyl Alcohol," Medicine.

[3] For fuller account of case see Opthalmic Record, December, 1899.

[4] F. van Fleet, "Alcoholic Amurosis," The Journal Inebriety, vol. xxiv, page 459; C. Stellwag, On the Eye, page 219, speaks of it as more common.

and awoke blind after a stupor of several hours; ...e afterwards partially recovered her vision. In many cases of blindness following the drinking of essence of peppermint and Jamaica ginger, it is probable that the effect has been produced by the presence of methyl alcohol in the mixture, substituted by unscrupulous manufacturers on account of its cheapness.

No case of amaurosis has been noticed by the writer as a result of drinking ordinary alcoholic beverages,[1] but only the stronger forms, either pure or ethyl alcohol, or some liquid which contains methyl alcohol.

Nystagmus has been observed in a few instances of alcoholism, but some doubt if it was caused by alcohol;[2] Berkley, however, says it is not uncommon, owing to the defective enervation of antagonistic eye-muscles.[3] In a reported case of tea intoxication[4] nystagmus was present in both eyes. In indirect as well as direct ways the effects of alcohol on the sight of chronic drinkers are seen. Dr. Gould, in a lecture in Cleveland, in 1903, said, "The enormous waste for alcoholic drinks during the past year can be traced in at least one tenth of the actual loss to the evil effect of eye-strain on the nervous system and digestive organs. The sleeplessness and irritation with disturbed digestion, described by the term nervousness, headache, biliousness, is traceable to eye-strains." While the effect on the eyes might be considered one of the lesser evil results of alcohol, any disorder caused upon so important and useful an organ as the eye must be recognized as of great moment.

Some interest has been taken in the effects of small doses of alcohol upon the sight, on persons who do not ordinarily indulge in alcohol, as well as on alcoholics. In some experiments conducted by Ridge,[5] ten subjects were used. They were first tested by noting the distance at which a row of letters could be read with one eye; then

[1] N. Kerr, Inebriety, page 98, says, "Alcohol, although not so common as tobacco, amaurosis is to be met with."
[2] T. B. Hyslop, "Alcoholic Insanity," A System of Medicine, Allbutt, vol. ix, page 326.
[3] H. J. Berkeley, Mental Diseases, page 251.
[4] Dr. Gorden, Indian Lancit, Oct. 23, 1901.
[5] For full accounts see Medical Temperance Journal, April, 1882.

two drachms of alcohol were given in most cases, and experiments made on the same eye of each individual, with the letters re-arranged.

On an average, everyone had to approach nearer to distinguish the same letters, the general average without alcohol being 9.375 feet, and with alcohol 8.538 *i.e.*, the distance had to be shortened 9 per cent. In the very thorough experiments made by Kraepelin, where the normal vision would enable him to read letters one-half inch long at a distance of thirty feet, one-half hour after one ounce of spirits had been given, the distance at which the letters could be read was eighteen to twenty feet — *i.e.*, the distance had been shortened 35 per cent. In these experiments more alcohol had been given than in the experiments by Ridge. In Kriepelins experiments it was seen that forms and shapes were blurred and indistinct except when seen very near. Colors distinguishable before alcohol was given were found to be obscure or lost altogether afterwards.[1] Red lines had faded away and were totally obliterated, showing effects upon the central part of the eye. In 1895, Reis made some interesting experiments on eye measurements under the influence of alcohol. His apparatus consisted of a strip of wood 1 meter in length, the divisions of which were marked on the opposite side from the observer. A sliding marker was moved until the subject judged the pointer and reached the center of the bar. Equal illumination of both halves and a good light were provided. Ten readings were taken in every trial, the pointer starting alternately from the left and right side. The mean variably error was computed for every trial. In the normal trials Mv. = 0.19 cm. Fifteen minutes after 80 cc. of 95 per cent alcohol, properly diluted and sweetened were taken, it was found that Mv. = 0.44 cm.; and one-half hour later Mv. = 0.40 cm. Twenty minutes later a second dose of the same amount was taken. Directly after the second dose Mv. = 0.46 cm., and later the result was 0.90 cm.

[1] T. D. Crothers, "Demonstrated Pathological Changes from Alcohol," Journal of American Medical Association, December, 1903.

The trials were discontinued as soon as symptoms of mild intoxication appeared. Further experiments confirmed these results. In some experiments with wine, the error was not increased so much as with pure alcohol. The experiments showed between normal and alcoholic influences the following differences respectively: — Mv. 0.17 cm. to 0.64 cm., and Mv. 0.20 cm. to 0.69 cm.

Abel[1] speaks of the results of alcohol indulgence which he observed while attending a sportsman's tournament where experts were competing in a live bird match. "I. . . was struck with the quick and accurate shooting of a man who, on inquiry, was found to be a shot of national reputation. After this man had not missed a bird in some twenty odd shots, I observed that he laid down his gun, and went to the building containing the bar-room; I followed and observed him in the act of tossing off a glass of whiskey. Once more, an hour later, he made a trip to the restaurant. The effect of the whiskey was soon shown by numerous misses, and at the close of the day's shooting this man was fourth on the list, the first prize having been won by a stolid looking man who made no trips after whiskey."

The effects of these disorders are seen in all forms of chronic alcoholism and in alcoholic insanity we find many more perversions of sight and in other forms of insanity. Hallucinations and illusions of sight are very frequent, being usually fleeting and terrifying. Objects may become confused and colors altered. Musca volitantes with the clouds and mists accompanying, figures, lines, and flying things, strange floating forms, at first when the eyes are closed and afterwards even when the eyes are open are the basis of illusions, and give rise to delusions.[2] The chapter

[1] J. J. Abel, "A Critical Review of the Pharmacological Action of Ethyl Alcohol, with a Statement of the Relative Toxicity of the Constituance of Alcoholic Beverages," Physiological Aspects of the Liquor Problem, Billings, vol. II, page 139

[2] F. E. Anstie, "Alcoholism," Reynolds' System of Medicine, vol. ii, page 152, says, "Flashes of light are a more serious phenomenon, and their occurrence at night, just before the patient drops into his first uneasy, half-slumber, is frequently the immediate precursor of the more definite visual hallucinations."

on insanity will give the reader a better description of the nature of these hallucinations and illusions.

In dealing with the disorders of the sense of sight we have so far been concerned with the end organ only, but undoubtedly the central disturbances are equally great, although it may be more difficult to localize them from a physical standpoint. We must recognize that no preception can take place, that we cannot see anything without an intellectual element entering into the process. "All preception is interpretation and from partial or mistaken interpretation all degrees and kinds of hallucinations and illusions result."[1] Any injury to the brain which would effect any portion of the optical centers would certainly affect the preception of things as far as sight is concerned fully as much as injury to the eye. If the ideas for which the optical images stand have a still different centre, and the optical impulses must be carried from this centre to the centres for the ideas in general, then any interference with the association fibres connecting these two centres must be disasterous to the visual preception of things regardless of the condition of the eye. Thus we have what has been called psychic blindness by some writers, in distinction from sensorial blindness,[2] the former being some difficulty with the association fibers connecting the optic and ideational centres, so that a sensation cannot be correctly interpreted; the latter, some impairment of the end organ preventing a correct or perfect sensation reaching the optic centres.

It is easy to lay too much emphasis upon this distinction for the two are so closely connected, and sight is not possible without ideational connection.

There are not two kinds of vision corresponding to this division of blindness, but only one, and any attempt to think of vision without the intellectual element is liable to give us a false psychology of sight; and further, in psychic blindness we cannot be sure that the end organs do give us a perfect sensation. In regard to some other defects, we are liable to lay some undue emphasis upon the conditions of the eyes, forgetting the part which the centres have to

[1] G. T. Ladd, Psychology, Descriptive and Explanatory, p. 370.

[2] W. James, Psychology, vol. i., pp. 41f.

play. It is quite as certain that some forms of color-blindness have central origin as that they arise from an abnormal condition of the retina. So much of a unite is the whole nervous mechanism and the organ for stimulating it, that it is difficult to say at any time the trouble is here and nowhere else.

Knowing as we do the condition of the brain, we can certainly say that the association tracts are not in their normal condition, and also that both the optic centre and the ideational centre are abnormal. With these physical basis in the brain in a pathological condition, we can posit another reason for abnormal sight. We fall back again on our old example of fatigue. We know that when the retina is fatigued there are important modifications of the sensations of light and color. The brain cells, in alcoholism, are found to be similar to the conditions of the fatigued cell, and the retina would probably respond to alcohol as the brain cells do. If this is so we can point out a direct connection between the effect of alcohol and disorders of sight in the alcoholized conditions of the cells of the retina. The movement of the eyes with tired and lame muscles increases the size of the perceived object,[1] and from what we know of the effects of alcohol upon the capacity of any of the muscles for work, we can say that the eye-muscles in common with the others must be in a tired condition; and as paralyzed eye-muscles interfere with localization, we must expect some result on the localizing power, from our knowledge of the effect of alcoholic indulgence upon these muscles. In the inability of the eyes to react to accomodation; looking out of the window at a distant object, suddenly he saw an immense bird some distance away of such large proportions that he was startled, but was reassured a moment later to find that it was a fly which had passed in the line of vision not far from his eyes. Judging from this, the lack of accommodation may be a potent influence in determining the nature of the alcoholic's delusions, or in starting his hallucinations and illusions. The disturbance of the circulation, both central and peripheral, probably has an effect upon the functions, so as to give abnormal impressions.

[1] G. T. Ladd, Psychology, Descriptive and Explanatory, page 366.

We must go still farther in our search for these frequent disorders of sight in the alcoholic. So unified are the mental processes, so dependent is one upon all the others, that no portion of the mind can be affected without its having a corresponding effect upon the others. Thus, as memory, imagination, judgment, feeling, and will, are all necessary to correct preception, so any derangement of these parts of the mind affect visual preception. It is hardly necessary to point out the dependence of preception upon memory. We see things, we know them to be certain things, because we remember the idea which a certain sensation conveyed to us before. Further, we are able to see certain distances on account of our memory of former experiences. The element of suggestion is dependent upon passed memories, and also have in it the element of imagination. We see what we imagine regarding the relations of space; here the bases of hallucinations and illusions come in, and the bases of normal preceptions as well.

To the work of the judgment we have already referred in the connection of the optic with ideational centre. Every preception is a form of judgment regarding the sensation received. The effect of feeling is indirectly noticed principally in its relation to attention. Our feelings concerning an object in a measure determine our preception of it, or the part of the object which we see. Directly the feelings tend to quicken the preception, sometimes to such an extent as to make it erroneous. By will, we exclude the extraneous objects so that we can fix our attention upon the thing which we wish. By the aid of the will we also mix colors, fuse imagines, make ourselves see things as we know they ought to be, and we find frequently that voluntary attention is necessary for correct accommodation.[1] With visual preception depending upon these other faculties of mind, is it any wonder that the alcoholic cannot see well? We know that he is not normal in any one of these particulars, so we must come to the inevitable conclusion that were his eyes perfect he would still be unable to see correctly.

[1] For a fuller discussion of these relations, see G. T. Ladd, Psychology Descriptive and Explanatory, pp. 363 ff.

WHAT IS THE MORPHINE DISEASE?

BY CHARLES W. CARTER, M.D., RICHMOND, INDIANA

IN using the term "morphine habit" we do not mean what we say. A drug habit is not a habit. A habit is the result of education or of accumulated experiences, by which repeated conscious efforts have at last become automatic and are performed sub-consciously, or even unconsciously. By habit we come to have characteristic ways of speaking, walking, eating, adjusting our clothing, doing our accustomed tasks, and performing most of the various and multitudinous duties that make up the sum of each day's life. Habit makes no impress upon our being, other than to give us easier ways of doing things, or peculiarities, tricks, and mannerisms that comprise those outward appearances we recognize as personality. Habit makes no change in the organism. The man who acquires a habit is the same man he was before. Compel him to give up this habit, or acquire a new one, and we find no change in the man.

But in a drug habit we have a very different picture. The man who acquires a drug habit is a different man from what he was before. Compel him to forego indulgence in his habit, and he is still another individual. A drug habit grips the being with a tighter clutch than does a true habit, and in a different way. It stamps an impression upon the organism impossible to be imprinted by the elements responsible for the formation of a true habit, and conscious effort and mere repetition of themselves can have little to do with the formation of that condition we call drug habituation. If that were all, then we might equally expect to have the bread and butter habit, the beefsteak habit or the milk habit, because we practice the frequent taking of these agreeable substances.

It ought to be equally evident that morphinism is not a moral perversion, and yet it would appear that most laymen, including a majority of moralists and reformers, and very many physicians also, regard it not only as a habit, but also as a variety of dissipation, a vice, a sin, a folly, or

other evidence of moral obliquity. It is true that weak, vicious, and degenerate characters more readily and more often lapse into drug abuse, but it is also true that persons of the highest moral type not infrequently become equally subject to narcotic addiction. They are often in no sense morally perverted. Their ideals may remain as high, and their lives in private as before the public, as faultless as before their addiction began, or after it has been abandoned. If weak-willed, depraved, and vicious natures more readily acquire drug habits, and are restored with greater difficulty, and with less certainty of permanent restoration, it is probably due to their natural tendency to slip and drift, to follow in the path of least resistance, rather than to a distinctively moral degeneracy.

The moral nature, of itself, probably plays only a minor rôle in the formation of a drug habit, and until this is more generally recognized to be a fact, a large part of well meant temperance and reform work will continue to be misdirected and must prove ineffective; and a great deal of injustice must be perpetrated upon unfortunate persons who are entitled to sympathy and encouragement instead of meriting criticism and condemnation.

Morphinism is not an immorality, but according to the most advanced medical thought a physical or psychophysical disorder, or a condition of disease. Just what it is that constitutes the disease in this condition can not be said to be determined beyond question. It appears that no explanation thus far given is wholly convincing and satisfactory. There are indications of an approaching unanimity of opinion among the most diligent observers, but probably the mass of the profession nominally subscribing to this opinion still feel much uncertainty as to the exact nature of the morphine disease.

The truth is, the condition which we know as morphinism presents the greatest imaginable variety and complexity of symptoms — as great, apparently, as are the variations in human temperament. Unlike the majority of well defined diseases, it has no characteristic or pathognomonic symptoms, no marks or signs by which its presence may be recognized with certainty in either the living or the dead

subject, no organic lesions or tissue changes discoverable either on the post-mortem table or under the microscope, directly or essentially referable to the drug. In other words, morphinism is not in any sense an organic disease, but a derangement of functicon, a change in the mode of action of the organism, not a change in its structure.

In watching the effects of the administration of a medicinal dose of morphine, we observe two sets of symptoms: one, the specific effect of the drug itself, and the other, secondary to conditions brought about by the morphine. As a result of the morphine action itself we observe paralysis of the higher centers of the brain and cord, with consequent dulling of the perceptive faculties, and retardation of both sensory and motor nerve impulses. The intellectual centers are inhibited; their perception of the annoyances and distractions of the outer world has been dulled, and distresses originating within the body likewise fail to rouse the usual recognition of their existence. Hence the calmness, the dreaminess, the sense of well-being, the relief from pain and weariness enjoyed by the narcotized subject.

At the same time, and due to the same inhibiting or paralyzing effect of the drug upon the nervous apparatus, we have a retardation of the whole metabolic function of the organism, a diminution of glandular secretion and of excretion, a crippling of digestion and a paralysis of peristalsis. The whole machinery of nutrition and elimination is retarded in its action. It moves dully, haltingly, and imperfectly as under a spell. As a consequence the toxines constantly elaborated through normal cell action and through putrefactive and other changes in the contents of the intestinal tract are hindered in their escape from the body, and the organism is thus subjected not alone to the poisonous action of the morphine, but also to the deleterious effect of its own waste matters.

This is the effect of a single dose of the drug. If this were all, then if the dose were not sufficiently great to be overwhelmingly poisonous, in a little time the somnolent kidneys, skin, bowels and other avenues of elimination would manage to carry off the poisons, both of the drug and of the organism itself, and as soon as this were accomplished the

system would be returned to its former state of equilibrium. But this is not all. From what we know of the results of faulty elimination of toxines, we should expect the characteristic symptoms of these poisons to be manifested, and so we find, after the morphine action has ceased, the usual picture of auto-intoxication, namely: languor, headache, constipation, scanty, high colored urine, nausea, deranged digestion coated tongue, foul breath, neuralgic pains, uneasiness, mental depression, and a host of indefinite distresses commonly following auto-intoxication, whether brought on by the paralyzing effects of morphine or from gluttony or from constipation or from any other cause whatever, and to avoid which we are accustomed to follow the medicinal use of morphine with salines, enemas, and other eliminative agents.

But instead of eliminating these toxines from the system, and thus removing the discomforts which they occasion, we might cover up their effects and relieve the patient by administering another dose of morphine. We would then again lull the intellectual faculties to quietude, render each nerve cell again indifferent to its duty, and the pain centers deaf to the calls for relief. The secretions and excretions would be still further diminished, and thus the quantity of toxines retained in the system would be still further increased. The poisoning would be intensified, but the usual discomforts arising from toxemia would be put to rest under the comforting touch of the narcotic. And thus this condition might be indefinitely continued, or for as long a time as the organism would be able to endure the continued toxemia, the morphine aggravating the poisoning, the toxemia demanding more morphine.

This is what the drug victim does for himself. He is self-poisoned to an extreme degree, and suffers all the myriad distresses ordinarily arising from the auto-toxemic state. He is also affected by a hypersensitiveness to pain, or a morbid intolerance of any kind of distress, and a degree of mental incompetency probably always more or less present in pronounced auto-toxemias, which render his self-control and his judgment inadequate to a rational course of action. He suffers. His suffering is actually great. To

his astigmatic inner eye it seems even greater than it is. He does not recognize the real source of his distress, but interprets it as a cry of deprivation from the inner self. He wants relief, and needs relief, but he is sure of only one means of obtaining it. He knows that in morphine, is a certain quick and pleasant cure for his discomfort, and though he may know that the relief is but temporary, he does just what most of us would probably do in, the same circumstances, he takes the morphine.

This, I take it, is the morphine disease, a condition of auto-intoxication for the relief of whose discomforts morphine is taken. It is a condition of double poisoning, first and least by the drug, and secondly and mostly by the toxines of the body itself, the morphine exercising its peculiarly deleterious effect upon the psychical centers and upon the physical functions, the auto-toxemia likewise, damaging both the bodily functions and the mental health. If the toxines were not present there would not be the pains and discomforts that call so beseechingly for the forgetfulness of opium; if the opium were not given the toxic condition would cease to be aggravated. Eliminate either factor, and the morphine disease would not exist.

I do not mean to suggest that this is all there is to morphinism. We cannot ignore the part played by unfortunate heredity, vicious environment, and instabilities arising from other sources, not one of which is negligible in a full consideration of this condition; but the chief feature that looms up before us in the practical management of morphinism, and the one at which our remedial attack is best directed, is as above suggested, the state of toxemia — mainly auto-toxemia — and effects directly traceable to auto-engendered poisoning.

If this view is correct, it does a great deal to clear away the haziness, surrounding the subject of morphinism, simplifying our conception of the condition, and rationalizing our treatment. We can understand why, instead of a pathological entity with clear cut, essential symptoms, such as we meet in malaria or diphtheria, or a host of easily recognizable ailments, we find in the morphine disease as many variations or types as there are varieties of mentality,

of temperament, of character, of physical resistance and physical susceptibility; for all of these things respond in various ways both to the narcotism of morphine and to constitutional poisoning from auto-toxemia.

And if this is true, then not only will our treatment vary in accordance with conditions in each individual case, and thus be more intelligently and more certainly directed to a successful issue, but we will also be enabled to deal with the distressed and unhappy morphinist with a larger sympathy and a more enduring patience, for we know of no tortures of mind or body that surpass those arising from a poison saturated system, and none that more irresistiby appeals to us for relief.

THE EXPERIMENTAL EFFECTS OF TOBACCO UPON THE NERVOUS SYSTEM

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THERE is great need of careful and exhaustive study of the effects of tobacco upon the nervous system. The general prevalence of the habit, especially in the young, shows that we should have a full and sane knowledge of the effects of tobacco on the nervous system. Observations upon the subject in future should try to parallel the taking of tobacco as in common practice. Much data of older experiments has been found of little use because this fact has been kept in mind. We hope some modern research laboratory may correct this defect at an early date.

A variety of substances have been found in tobacco, aside from nicotine. Some of these are pyridin, picolin, tulidin, pavolin, collodin, rubidin, varidin; also carbolic acid and marsh gas. Krouse states that cyanogen is also present in considerable quantity. None of the above, aside from nicotine and pyridin have been thoroughly studied. No little of the differences of opinion which obser-

vers have held regarding the action of nicotine may be due to the lack of exclusion of the other products in crude tobacco. This statement is particularly pertinent in studying the effects of tobacco on the nervous system. Tobacco only registers a permanent and definite impression in nervous structures when it is used for months or years. Tobacco deprived of nicotine may be made to produce contraction of the pupil, dyspnea, general convulsions, and death in animals. The neural action of pyridin is that of a respiratory paralysant and spinal cord depressor.

In as much as it is fairly well proven that tobacco is a cardiovascular poison, many attempts to make tobacco substitutes have been directed towards making a tobacco, nicotine-poor. One of the latest and most interesting experiments is that of the Austrian government, which, will be remembered, has a monopoly of the tobacco trade. It has manufactured tobacco brands which are made almost entirely free from nicotine, but they did not meet with satisfaction, as the flavor suffered a marked loss; besides, the sedative effects were not obtained as formerly from the consumption of crude tobacco. Nevertheless, the government holds patents for reducing the nicotine and pyridin of tobacco at least fifty per cent by means of a lime or potash treatment. A still better method has however, been employed during the past year. It consists in heatng ready-made cigars and cigarettes to a temperature of 200 degrees C.; thus twenty to fifty per cent of the nicotine is driven off at a single treatment. Physiological studies have already proven that this nicotine-poor tobacco is very much harmful on the nervous and vascular systems. The latter experiments are the most interesting as it has been heretofore held that the intense action of smoking tobacco on the nervous system is due to the presence of the bases of the pyridin series, and not to alkaloid nicotine itself. However, it is not yet proven that all the essential alkaloidal series of tobacco do not suffer loss in this caloric or chemic treatment.

The experimental effects of tobacco on the nervous system may be divided into acute and chronic. It acts both on the peripheral organs and nerve centers. In its

action on the cardiovascular apparatus its maximum effects are registered on the aorta and coronary arteries, producing, when taking in habitual excess, arterial sclerosis of these parts. It induces also a peculiar form of cirrhosis of the liver, which does not immediately concern the main purpose of this paper. Nearly all the experimental work done on tobacco has been done by the use of graduated doses of nicotine.

The alkaloids of tobacco are chiefly absorbed by the mucous membranes, although it may be taken up by the skin. Animals have been killed by the latter method of administration.

The acute effects from toxic doses of nicotine administration are fairly well known to all; they embrace horrible nausea, vomiting, giddiness, intense malaise, with weakness, followed, if the dose has been sufficient, by burning pains in the stomach, purging, free urination, extreme giddiness, passing into delirium, a rapidly running and finally imperceptible pulse, cramps in the limbs, absolute loss of strength, a cold clammy skin, and finally complete relapse and death. In the lower animals, especially in the frog — aside from the symptoms just enumerated, which have been encountered in man — violent convulsions of spinal origin are superadded, followed after a time by spinal paresis.

Tobacco is a powerful depressant to the motor or the efferent nerves, acting primarily upon their peripheral filaments. The afferent or sensory nerves are much less affected, but are probably also depressed. The sympathetic ganglia are first stimulated and then depressed by nicotine. To these actions are probably due the increased saliva and other secretions caused by small doses, and the lessened gland activity produced by large doses. The acuter effect of nicotine upon the nervous mechanism of the heart and circulation is very pronounced. While the initial rise in blood pressure is certainly due in part to direct stimulation of the heart muscle and a stimulating contraction of the peripheral vessels, the heart ganglis receive the greater part of the excitation.

As is well known the contrary holds good for alcohol. It is further probable that the final paralysis of the heart in

nicotine poisoning, is due to a double depressing influence upon the heart and arterial walls.

The acute toxic effects of tobacco upon the pupil induce a myosis, probably paralyzing the peripheral ends of the sympathetic; and it almost certainly stimulates the oculomotor nerve.

It first excites, then paralyzes the respiratory center. Prag states that retardation is universal in the animal kingdom, while among mammals acceleration is found. Traube teaches that the lungs always give out before the heart, in acute nicotine poisoning; this he ascribes to paralysis of the respiratory center. Rosenthal has induced inspiratory cramp and death by sufficient doses of nicotine. However no little difference of opinion exists among experimentors as to whether the final paralysis of the nervous mechanism of respiration is central or peripheral. Probably both are right. According to Mittenberg's experiments upon dogs, nicotine acts in accordance with the dose, either as a pure excitant to the respiration, or as a first excitant, and then paralyzant, or as a primary paralyzant. Excitation of the center in general, means accelerated expiration, and paralysis means retardation of respiration, with long expiratory pauses. Death occurs through primary arrest of respiration.

In feeding the animals either crude tobacco mixed with food, or the alkaloid nicotine, tolerance is easily and early established, requiring but two or three days. The animals loose neither flesh nor appetite. Adler fed four cigars daily to a female rabbit for six months; everything proceeded as in health; the rabbit became pregnant, giving birth to seven young, which she nursed successfully.

Cats are the most susceptible to nicotine of all mammalia. Birds are also easily affected. One drop of nicotine given to a pigeon will cause collapse, tetanic convulsions, and death in a minute. A sort of tobacco chorea has been induced in some horses. However, the toxic co-efficient on the amount necessary to produce death has never been definitely determined. In chronic poisoning there is more or less gastroentirits of a hemorrhage character. Echymosis occurs in the pleura and peritoneum. Hyperemia of the lungs, brain and cord is found. There is a

lowering of the hemoglobin content of the blood which has been reported as low as 40 per cent; there is also a diminution of red corpuscles. Coarse lesions have been found in the brain and spinal cords. Walicka claims to have seen peripheral neuritis in animals which on autopsy showed the same changes in the peripheral nerves as that noted for the optic nerves in tobacco amblyopia. In Austria the horses which eat a variety of tobacco known of Nicotiana anaveolens develop severe chronic ocular disturbances, analogous to tobacco amblyopia in man, and in extreme cases, at autopsy the optic nerve is found degenerative. Virginia deer eat this tobacco plant without harm. Possibly they grow immune. Horses are more than cattle and sheep to which latter class deer belong. Vas has shown that in the rabbit there are well defined abnormalities in the chromatin distribution and swelling of the cell body in the ganglion cells of the spinal cord. This change was uniformally found in all the spinal and large sympathetic ganglia. Parsons and Pandi claim to have seen degeneration of nerve fibers similar to that noted by Walicka.

In the experimental induction of nicotine poison in rabbits, Papaw and Modeston have frequently seen distinct pathological alterations in the retina of rabbits.

Curiously enough no systematic study of the ocular lesions of tobacco poisonings has ever been undertaken. It is an interesting fact that tobacco abstinence in animals previously made tolerant of toxic doses, is attended by symptoms analogous to those seen in man. The animals are extremely restless, irritable, insomnic, apprehensive and subject to violent fits of anger.

A study of Kobert's work leads one back to our original view that the subject of tobacco poisoning on the nervous system, especially in its chronic (although also in acute) phases, is fraught with contradictions. An attempt to schematize the subject matter has been foiled by the facts. Why should one pharmacological authority class nicotine with muscatine, another with conine, and a third with pilocarpine. This alone teaches us the status of the action of tobacco. At the same time these incompatibilities give an independent observer some certain light and a chance to

nicotine poisoning, is due to a double depressing influence upon the heart and arterial walls.

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find facts suited to his individual views — a study in pargmatic philosophy. For the animal experiments, upon tobacco poisoning the following conclusions may be drawn:

(1) It is fairly proven that tobacco is primarily a cardiovascular poison.

(2) Its acute toxic effects on the neuromuscular apparatus are, first, as an excitant and mild convulsant; second, motor nerve depressant, and finally a paralyzant of the central and peripheral nerves of the heart and lungs.

(3) Its chronic toxic effects on the nervous system (as yet so inaccurately studied) is to induce toxic congestion of the brain, spinal cord and peripheral nerves; inducing finally in the latter a mild type of degenerative neuritis.

(4) The toxic co-efficient even in animals, under strict test is so very favorable as to vitiate much of the attempt to derive any definite conclusions of its effects on the nervous system in man.

PSYCHICAL ASPECTS OF THE MORPHINE ADDICT

BY J. L. BOWMAN, M.D., UNION SPRINGS, ALA.

AT no time in the history of medicine, has there been so much discussion of the patent medicine evil, the quack and the impostor as at the present day, at no time, since the days of Jesus of Nazareth, has that mystic principle, vaunted by the divine healers of the Dowie and Mrs. Eddy type, attracted so much attention as to-day.

As we read or hear the tirades against these real or supposed evils, two patent questions present themselves, viz: which of our patients become patent medicine fiends, the source of the quack's body, the divine healers vestry men, or the Christian science worshippers?[1] And who is chiefly responsible for their change? By a little investigation it will be seen that regardless of what other diseases these lost sheep of the house of Israel may have suffered from in the past, they go as neurasthenics, hypochondriacs or inebriates, and the profession drives them away. As

[1] Read before the Medical Association of the State of Alabama at Mobile, April 16, 1907.

proof of this statement, I would, after pointing out various statements given in current magazine articles, and whatever may be true in quack literature testimonials, ask these questions: — What is usually done for that 'chronic' who consults us month after month, that one who comes from one to eight times per week, each time, perhaps, with a new set of nervous symptoms? What do we do for the hypochondriac, who usually takes occasion to have paroxysm in the coldest night or other equally inconvenient season? Do we not ultimately rid ourselves of them by saying, either by word or action, that there is nothing ailing them, or we can do nothing for them? And does it not occasionally happen that they go away inebriates or become inebriates of the peruna type?

The osteopath, the divine healer the Christian scientist and such like, recognize, consciously or unconsciously, the power the mind has over the body, while we in our enthusiasm for drugs or therapeutic nihilism forget it. Consequently, a large number, more afflicted in mind than body, are announcing to the world that physicians could not cure them, but this or that cult performed a miracle.

But what do we say to the inebriate, or his friends who consult us? The usual answer is yet that of the dark ages, — "He hath a devil and cannot be cured," or, "He can abstain if he wishes."

Ninety per cent of these unfortunates who submit to treatment are either not advised by their physicians, or are sent to quacks and shysters.

And it is to this class of patients that I wish to call your attention, and especially the opium or morphine inebriate, since to these we are often under a double bond; for not only are they our patients, but in many cases, we stand in the relation of being an etioloyical factor.

I would preface my remarks, however, by an explanation or apology for the relation the profession now assumes with regard to these sufferers, and the prevailing skepticism as to the value of treatment. In a review of the literature on this subject we are impressed, even in the writings of many of those most eminent in this field by the prominent "I" and obscure terms used in describing their method of

treatment and handed out to us to our discouragement, while such epithets as ignoramus, villian and murderer are visited upon those who do not do as "I" do or say. Another factor in this state of affairs is the fact that, in the great mass of material published and reviewed in the medical press to-day, one is bewildered and deceived by the great number of drugs advocated as panaceas for this disease, from which it might be concluded that most of the drugs in the pharmacopea could be used in this connection, and many drugs outside of it, as well as the whole list of therapeutic agents other than drugs. Perhaps they all have a place, but to quote Dr. Burnett, "No skill is required to take morphine from a patient; any quack, ass, or fool can do that," and they are doing it. The vital question is how to keep them off. It is then to some conditions that exist in those so afflicted, and conditions that usually pass unnoticed, yet play, as I believe, a most important part in causing the relapse of these patients, that I would call your attention, and these thoughts are given merely as suggestions as to lines along which further study and investigation will, in my humble opinion, advance us far toward solving the therapeutic problem before us.

"Inebriety is a disease of the nervous system closely allied with insanity" and "the pathology of morphia-taking is more psychological than pathological." It is, therefore, necessary to study the addict from a psychological point of view, to note the congenital or acquired psycoses, which have played a part in bringing about the addiction, and those which, the addiction once acquired, render the individual particularly and peculiarly liable to its return. It will serve our purpose, however, to study the psychical idiosyncrasies in the individual taking the drug.

"Persistent pervision of function and impairment of the central nervous system from the persistent presence of the drugs in its nutrient pabulum," brings each of these individuals across that not sharply defined line, between the condition as an intoxication and as a neurosis. When this central neurotic change takes place the question of taking the drug ceases to be one of will, but of necessity and every sensory and motor impulse, central and sympathetic, is

modified by the drug and the resulting pathological changes. The individual is changed, and that, not only as others know and recognize the change, but the "I," the subective self, is changed. There is depression. He has no longer the same consciousness of his own personal existence. The former consciousness would now be painful. On the other hand, the "me" or "mine," the objective, becomes prominent and here is egotism in a form approaching the insane. Illustrative of these facts, it may be well to call your attention to the fact that the addict with the necessary supply of the drug and undisturbed by external surroundings is oblivious of his own existence, and psychic activity is almost nil. The extent to which this condition obtains, depends upon the amount of stimulation from external or physical sources. For when he is placed where the dulled consciousness is overcome by stronger stimuli, by the contact with people in the street, by illness of some member of his family, by any physical or mental pain, or lack of the drug, then he becomes the schemer, the deceiver, and the egotist, talkative or taciturn, the usual range of whose conversation does not extend beyond "me" or "mine."

The exaggerated response to pain, mental or physical, is a prominent etiological factor, which condition when not pre-existing, it is produced by the drug, and continues long after its removal. Many of you have treated these addicts when the accustomed drug no longer relieved the pain, and know well the tortures they seem to suffer. Again, who, of you, has not observed how illy these people bear mental pain. Who groans more, prays more and exhibits more exasperation than the morphine addict, when some member of his family is ill, or suffering. This inability, or dislike to observe suffering has its influence, too, in causing the unwarranted exhibition of the drug, by physicians addicted, as well as the fact that two or more members of the same family frequently have the neurosis engrafted on a nervous system prepared by heredity. We can scarcely consider this emotional, since evidence of a consciousness of emotional feeling is rarely, or slightly manifested. There may be outbursts of anger, fear, joy, grief, shame and pride, but these are transient, and play but a small part in the shaping

of the general conduct of these patients while moral, æsthetic and intellectual feelings seem scarcely to make the inebriate aware that they exist.

As the neurosis becomes more profound their actions become more instinctive, that is, they act to produce certain ends with but little foresight as to those ends and these actions pass from the control of those higher moral and intellectual faculties which govern the conduct of normal civilized man. The will then is affected, and without a normal condition of this 'psychological process,' normal action is more or less impossible and abnormal actions are irrepressible. In this, as in all addictions, the will is obstructed *i.e.* — while the will-power exists, and may at times exert itself, it makes so little impression against opposing forces, as a rule, that actions are controlled rather by instinct and impulse. They have little power to make mental or normal effort — to follow lines of great resistance, as the drug dominates their consciousness. The euphoria, which the drug begets and pain resulting from its absence, *propter hoc or post hoc* act as "motor spurs and drive other thoughts from the consciousness and instigate their own volitional effects."

One writer says he accepts each addict as a "daring scheming villian." Grant that such is the case, yet it must be pointed out that this condition is not due altogether to moral degeneracy. Many of the lies they tell are result of lapse of memory or their opium dreams. Much of the deception they practice is the result of blind, instinctive impulsive action, affected scarcely at all by will or emotion. They tell you an untruth, you know it is an untruth, and they know you know it. Again, that irresistible impulse, which, in more nearly normal man has bribed jailers, broken jailers, and has not stopped short of murder, asserts itself as the consciousness of impending calamity and approaching hell increases as it does when the drug is absent. Dr. Crothers, who has studied these cases more, perhaps, than any other man, in discussing the psychoses peculiar to them, gives three, dealing with moral changes, which briefly stated are: — Palsy of consciousness of right and wrong; intense anxiety to give reasons for, and explain conduct, morbid impulse to deceive, swindle and misrepresent.

I cannot dismiss this subject without considering the part which habit plays in the return or relapse of our patients. It must be most emphatically asserted that the term 'drug habit' is a misnomer. It might be applied according to Wellington's definition that "habit is second nature, yea, ten times nature," but this is neither a psychological or physiological definition. However, should an individual take certain foods for a time, although indigestible or unnourishing would there not be a craving for it when absent? The Indian, accustomed to live on roots and worms, will, after years of civilization, still feel inclined at times to his former foods. Defective nerve cells and those used to the support of the drug, often demand again their accustomed support when under strain. Even mere association with others who use the drug brings back memories of the "Opium Dreams," and the longing to return to that peaceful state. One of the most brilliant cures which it has been my privilege to observe, relapsed after a few months association with a relative so afflicted, although he had been well for eighteen months or more.

That the drug offers support to a weak or declining nervous system, we have the testimony of the elder Wood, who took the drug in medicinal doses during the last years of his life; saying it helped him over the rough places. That oblivion to the cares of life, that freedom from the jars and the harshness of the world about them is not soon forgotten, and even though forgotten, may haunt the patient invitingly, when conditions favor it. As an instance of this: a patient of mine, absolutely free from the drug for fifteen years, was seen, when under continued and great mental strain and anxiety, to search in the nooks and corners where years before she had kept her supply and wander aimlessly about as she did formerly when it was lacking. Nerves, naturally hypersensitive, once accustomed for a period to this protection, protest most vigorously at violent stimulations, and the possessors yield, more or less readily, to that instinctive impulse to accept its former protection.

In brief, then, among the psychical factors to be dealt with in making a permanent cure of these cases, we have

a hypersensitiveness to pain, mental and physical; an egotism instinctive and impulsive to follow the lines of least resistance, therefore, weakened or obstructed will power; moral carelessness and nerve cells and center more or less debilitated and habituated to a desired, if not needed, support and protection. And these conditions exist, to a greater or less extent, for a time at least, after the drug has been discontinued. The conclusion must then be that the process of cure must be not only one of therapeutics, but of education.

It is then for the profession to study and know these mental and moral deficiencies, and instruct the friends of the patient as well as the patient as to these conditions, and see that these patients receive the moral support and encouragement so much needed in the first few months after treatment, when they begin anew to feel the responsibility of life — to realize that they have a will power, which must govern their actions. It is at this time, when doubting themselves, they are made painfully conscious that they are watched and doubted on every hand, and this, at a time, when each stimulus to their diseased nerves and nerve centers excites an exaggerated response.

Is it strange then that they confess almost to a man that in these early days, these turbulent days, that the world takes on a deep gloom; nothing faces them but despair and uncertainty.

Ere long, as the damaged nerve cells are repaired, as self confidence asserts itself, as the will strengthens by proper exercise and the realization that *they are free* grows vivid, joy and happiness dispels the gloom, hope succeeds despair, and vistas of a beautiful and real life open up where before, lay only a desert of uncertainty and doubt.

There must be a master hand, a master mind to guide these patients through this period of depression. This cannot be properly accomplished by any other than the family physician or some friend under his direction. I beg you then, gentlemen of the profession, when an inebriate comes your way, who has been relieved of his drug, even though it has been done by a quack, take him in charge, encourage him to strengthen the defective and diseased nerve cells

and centers by the performance of their normal functions and by the taking of and assimilating the proper foods.

See that no temptation is placed in their way to invite their relapse and avoid any morphine derivatives, as remedies.

In discussing the psychological side of the subject, I would not minimise the pathological conditions upon which it is based, but since the pathology is not one peculiar to the disease, and is one which we know is relieved by symptomatic treatment, we must analyze the symptoms, and devise suitable and rational treatment.

I should like at this time, to point out the clinical conditions, which are usually given so little attention in literature on this subject — the neurasthenia, the circulatory and chronic gastrointestinal disturbances that remain and encourage to relapse, but time and your patience are not sufficient for that.

These disconnected ideas are presented in the hope that some may be interested in the study of this disease, that by united work, a definite scientific working basis may be established. I offer them as the beginning of a study, and as an appeal for help to sight the land of what Crothers calls "An undiscovered."

Finally I wish to appeal to each of you to do all within your power to bring about the enactment of the bill before the present legislature, providing an appropriation for the establishment and maintainance of an institution for the treatment of all inebriates, either in connection with the present state hospital for the insane or elsewhere.

As to the steps the State Association should take in the matter, I can but repeat the suggestion I made at the meeting last year, that a committee be appointed to collect data as to the cause and extent of inebriety within the state, what is being done and what can be done for the cure, and what means can be used for its prevention, and present whatever information can be secured along this line to the legislature and this association.

SCIENCE AND EDUCATION APPLIED TO THE ALCOHOL QUESTION

The following is the report of the Secretary of the Temperance Federation, read at the annual meeting, Jan. 9, 1908. This is without question one of the most important movements for the dissemination of scientific truths, and should commend itself to every reader, who may aid and assist in this great work.

In the various efforts being made to extend knowledge of the essentials of hygienic living, there had come to be a recognized need of a central agency for the collection and dissemination of scientific findings concerning alcoholic drinks and other narcotics, in their relation to individual and social welfare.

Many valuable books, pamphlets, papers and other studies in these fields have had an all too limited usefulness, merely because they were not kept on file, and their facts were not brought to the attention of the general public by some central independent agency. There was need, therefore, of the assistance of a trained acquaintance with the publications and helps of the disassociated workers, which would at once refer the inquirer to the particular facts he wished, and could turn all useful information on these subjects into every possible channel through which it can reach the people.

The Scientific Temperance Federation was organized to meet this need.

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.

A large collection of data on the alcohol question was made available to the Federation at its organization. During 1907, there were added over one thousand books, pamphlets, reprints, bulletins, abstracts, quotations and references,

also several hundreds of clippings containing information on the various phases of the subject of alcohol and narcotics.

A new system of classifying, and cataloguing has been inaugurated, bringing this material into an orderly arrangement which affords information on a given topic on short notice.

Medical and other scientific periodicals of all the leading nations, consular and other government reports, reports of state charitable, prison, insanity, and health boards, foreign correspondence and the nearly one hundred scientific, educational, social and temperance periodicals received from the United States and twelve foreign nations, afford a wide range of information.

The subjects appearing most prominently in the physiological collection are: The effects of alcoholic liquors on digestion, circulation, muscular and mental working ability, their influence in causing degeneracy and other hereditary effects, the effects of tobacco and other forms of self-drugging.

The subjects of most importance, because of their bearing upon the beverage use of alcohol, that have been matters of scientific investigation or report during the year are:

1. The work of Dr. Reid Hunt, of the United States Hygienic Laboratory, published in February, 1907, showing the effect of small doses of alcohol in increasing the susceptibility of the animal body to poisoning.

2. The experiments of Professor T. Laitinen, reported at the Stockholm International Congress against Alcoholism, showing the effect of very small quantities of alcohol in increasing the susceptibility of animals to infectious diseases, and in lowering the vitality of offspring.

3. The growing number of physicians whose attention is turning to their responsibility for the over-valuation of alcohol by the laity.

Dr. Reid Hunt's report, although technical, was capable of a simplification that could be easily understood by the general public, and a paragraph showing the light it shed upon the commonly observed susceptibility of alcohol habitues to poisoning by metals, dyes, and other injurious influences, was included in the second Press Circular

issued by the Federation, which carried the information to many thousands of readers.

A condensed account of Dr. Hunt's experiments, adapted to the medical standpoint was sent to several correspondents in Europe, including the secretary of the German Abstinent Physicians' Society, who translated it into German, and published it in the news sheet which he sends regularly to the German medical press.

Prof. Laitinen's results were presented in simple form in the third Press Circular, and have been used in several articles dealing with the supposed harmlessness of small or moderate quantities of alcohol. The claim of the brewer's advertisement that the 3½ per cent of alcohol in his beer renders it "a harmless stimulant without injurious effects," has been placed in antithesis with this finding of Professor Laitinen, that a quantity of alcohol equivalent to half a pint of 3½ per cent beer a day for a grown man, lowered the resistance of rabbits and guinea-pigs to infection, and decreased the vitality of their progeny.

Some notable utterances this year on the long debated question of the food value of alcohol, show that logic is helping to harmonize the discordant interpretations that have been put upon the results of experimentation.

The *Journal of the American Medical Association* reporting the last meeting of the British Association for the Advancement of Science, Oct. 19, 1907, said:

"To prove alcohol a useful food, it must be shown that it can be safely given in sufficient amounts to supply an appreciable proportion of the energy of the body. This, it appears, was not considered as demonstrated. This would probably be the verdict of any body of scientific physiologists discussing the question from an unprejudiced point of view."

At the Congress for Hygiene and Demography, held in Berlin in October, 1907, Prof. Hans Meyer, President of the Pharmacological Institute of Vienna is reported in the *Deutsche Medizinische Wochenschrift*, Oct. 17, 1907, as saying:

"Alcohol taken into the body from without, is no food substance fit for regular use, because, until it is burned it

acts as a poison. Its poisonous action depends upon its ability to dissolve the lipoid constituents of the cells, whereby it is able to penetrate all cell membranes, and to break up the normal relations between the lipoid and non-lipoid constituents of the cell protoplasm. The latter disturbance brings about the drug effect characteristic of alcohol and its relatives, the acute and immediate changes in the functions of the cells affected."

The experiments of Dr. Reid Hunt also threw a side light upon the comparative effect upon the body of alcohol and of carbohydrate foods. The mice that he fed on an extra supply of sugar foods could resist three times as much poison as those that were fed normally, while those that received alcohol were killed by one-third as much poison as it took to kill the ones that received the normal diet.

Among the words of physicians showing the standpoint from which many are coming to view the alcohol question, are the following:

Speaking of alcoholism, liver cirrhosis, etc., in little children, brought on by alcoholic liquors given them by their parents to strengthen them, an editorial in the *British Journal for Children's Diseases*, October 1907, says:

"In over a quarter of all the cases, it (alcohol) was originally prescribed by the medical attendant with such vague instructions that the parents continued the habit, with disastrous results. In three of the cases, the medical practitioner specifically ordered an increase of the habitual alcoholic beverage, with the idea of treating the mal-nutrition due to the unrecognized cirrhosis. . . It can not be denied that on our profession lies the direct responsibility for most of these unfortunate occurrences. . . How comes it that parents so generally accept the current opinion that 'anæmia,' 'debility' and the like are benefited by alcohol, and especially those forms of alcohol such as stout and port wine, the color of which most nearly resembles the blood? What effort is our profession making to counteract this absurd and harmful delusion? How many of our profession actually entertain this delusion even yet?. . . We can not and should not avoid our direct responsibility in this matter, and the more manfully we face our plain duty

in these directions, the more powerful will the influence of profession become, and the higher the esteem in which it is held by the state."

A Pennsylvania physician, Dr. Frank B. Kirby, in a letter published in the *American Journal of Clinical Medicine*, October, 1907, presents another view. He says:

"A subject of such vast economical proportions as alcohol, that reaches $1,500,000,000 annually and enters into the etiology of more diseases possibly than any other one cause, demands some thought." He adds that in the day, however distant, when alcohol ceases to be a causal factor in pathology "the medical man will find it easier to make ends meet. That fifteen hundred millions will be diverted into legitimate trade channels. How often do we see money spent for rum by those who never pay their doctor?"

The editor of *The American Journal of Clinical Medicine*, October, 1907, said:

"Alcohol is probably the greatest of all breeders of crime, disease, degeneracy and poverty. It not only robs the nation of an enormous amount of wealth, but in return it contributes nothing to its strength. Is it not the duty of the members of our profession to take an active part in fighting this pernicious traffic? The saloon is distinctly the doctor's enemy because it impoverishes so many people, and absorbs so much of the wealth of the country, a considerable proportion of which is legitimately the doctor's share."

Someone has said that so far the strongest influence in breaking down drinking customs is the employer who insists upon picking total abstainers. But a stronger force, a determining force that has not yet shown its full power, will be the united voice of the medical profession whose utterances would make short work of the boasts of the liquor advertisement, and would scatter the doubts of the hesitating teachers who are now waiting for conviction to fire their zeal.

If the Scientific Temperance Federation could do no more than send these stirring utterances of the few who are beginning to see their responsibility to the officers of

the state, county, and city medical societies, it would undoubtedly bring large numbers to a similar consciousness of their relations to the drink question. The cost and labor of breaking down social drinking customs, and of correcting the false valuation of alcohol, would be greatly diminished if there could be this aid from the physicians.

What has been done by a campaign of education toward stamping out typhoid fever, malaria, tuberculosis and other preventable diseases can be done to a large extent with alcoholism and narcotics when the physicians take hold of these questions with the same energy and with the conviction born of thorough acquaintance with the progress of scientific inquiry.

There is a large amount of scientific material constantly coming to hand, studies of experiments and observations on a wide range of topics which have a special value for physicians being of a more strictly professional nature than that used for the popular Press Circular. Much of it appears in foreign publications to which the average physician has no access. He would be glad to see this material, but has neither time nor facilities for searching it out for himself.

The fact that some physicians are already sending the Scientific Temperance Federation their publications, and asking for specific information, shows something of the possibilities for usefulness the Federation will have when the medical profession comes to attach the same importance to preventive measures in the case of alcoholism that it now attaches to preventive measures against these other diseases.

Plans are under consideration for the further development of this important branch of the work of the Scientific Temperance Federation, and in these the scientific and financial coöperation of all physicians will be both sought and welcomed.

One of the most important and practical uses of the Scientific Temperance Federation's valuable collection of material has been the supplying of information in answer to special inquiries. The resources of the Federation have been thus drawn upon by physicians, superintendents of

schools, and teachers, temperance workers, editors, congressmen, lawyers, students, clergymen, Chautauqua lecturers, etc., from many parts of our own country and from foreign lands. The subjects of inquiry have covered almost every conceivable phase of the question.

The information supplied has been used in medical, educational and popular addresses, in medical journals, newspaper articles and editorials, school instruction, sermons, legislative campaigns, convention discussions in the United States and in Europe, and have thus reached literally millions of readers or hearers.

Inquiries are answered in two ways: (1) By material available in the Scientific Temperance Federation collections or publications; and (2) by referring inquirers to the original authorities or to the publications of other organizations that would supply the exact information desired.

This "clearing house" method used by the Scientific Temperance Federation makes it important that all authors, publishers of any publications bearing upon the subjects of the Federation's work should send at least one copy of such to the Federation, in order that it may be catalogued and inquirers may be promptly referred to the best available material.

Some of the most valuable work of the year has been done through the medium of the press. For instance, data was furnished for a paper read before the American Academy of Medicine, and afterward reprinted in its "Bulletin".

Two editors, representing alone over half a million subscribers, were supplied with facts which they desired to complete articles. Data from Dr. MacNicholl's inquiry into the effects of alcohol on school children, sent to Mr. W. R. Hearst, were used soon afterwards as the basis of an earnest warning against the beverage use of alcohol in an editorial published in the *New York Journal*, *Boston American*, and *San Francisco Examiner*, thus reaching millions who most need such information.

The "Press Circular" issued by the Federation, which contains up-to-date scientific and other facts about alcohol, printed in popular and convenient form for the use of editors is a successful attempt to make good the great loss

which the public has heretofore sustained because these facts did not reach the people promptly. The Press Circulars have been very well received; editors representing a wide range of interests, and fully 1,800,000 subscribers and, of course, several times that number of readers, have already asked that the circulars be sent them regularly.

An unforseen development of the Press Circular has been inquiries for information on special topics elicited from the editors themselves.

Articles by the secretaries of the Federation have been published in daily, temperance and religious papers, touching the various phases of the importance of temperance education for children and youth, and setting forth facts about beer, about drunkenness in wine and beer-drinking countries, and the cost of drink to the community in degeneracy, crime, pauperism, insanity, philanthropy, and business. Here again the results of the scientific research work have been used in extending public knowledge of the facts about alcohol.

The press of America is one of the very greatest educational factors in our public life. It is now open as it has not been for years to facts pertaining to the alcohol question. It is the psychological moment for turning the power of the press into a great force for spreading the scientific reasons for intelligent sobriety. To seize upon this moment by systematically supplying the available and much needed facts is, therefore, the timely and important purpose of one great branch of the work of the Federation.

In addition to the information sent out through the public press, Federation has published seven new leaflets representing 46,000 pages. In all a total of 1,227,000 pages were prepared and published by the Federation during 1907. Six thousand, two hundred fifty letters and postals were sent out in correspondence with all parts of the United States and with thirteen foreign countries.

The year was marked by substantial advances toward the universal temperance education of the children of the world. Great Britain through the invaluable assistance of her physicians, has secured compulsory instruction in hygiene and temperance in her public school code.

The meetings of Colonial Premiers in England in April, was made the occasion for a conference of statesmen, medical and educational experts, concerning the hygienic and temperance instruction of the child. Lord Strathcona of Canada, Mr. Deakin, Premier of New Zealand, Sir Philip Jones of Australia, Mr. Alfred Mosely of the Mosely Commission, Sir Thomas Fuller of Cape Colony, Sir Lauder Brunton of England, and Sir John Cockburn of Australia, all voiced in their own way the necessity aptly expressed by Mr. James Hughes of Toronto, that "Every child should be taught the nature of those things that might rob him of his power." The Conference passed a resolution urging on all school authorities the necessity of making "the teaching of hygiene and temperance an essential part of the whole curriculum of the education of all children".

At two of the summer international congresses, this teaching received serious attention, viz., the International Congress of School Hygiene held in England, and the Eleventh International Congress, against Alcoholism, which met in Stockholm.

The Catholic Total Abstinence Union of the United States, has just adopted a temperance lesson book which it will seek to introduce in all the parochial schools of the country, thus reaching with temperance teaching thousands of children who heretofore have not received the instruction required by law in the public schools.

In the United States, on the whole, some of the fruits of years of teaching the truths underlying the laws of health and concerning the nature and effects of alcoholic drinks and other narcotics are beginning to be seen. Yet there never was a time, when the importance of pressing public education, both of children and adults, in these subjects was greater than now. There is no hope of permanently eliminating the evils consequent upon the use of narcotics until the people are educated away from that use to intelligent and voluntary sobriety. Legislation against their sale may remove the immediate temptation, and to that extent is valuable, but the "thou shalt not" of legislative measures must be continually buttressed by the "I will" of education. Even if the prohibition of the sale of alcoholic beverages would stop the drinking of every drop, there would still remain the other narcotic substances, whose name is legion, the use of which is increasing, the effects of which constitute no less grave peril to our race than does the use of alcohol.

It is most of all important that appreciation by the general public of the value and necessity of this school instruction should be deepened so that it will be popularly, as well as legally required, that forces should be brought to its support which are not now interested in it, or at most, only half-heartedly. This is a matter that touches every home where there is a child. It is a great question of public welfare.

The *School Physiology Journal* published by the Scientific Temperance Federation has given special practical emphasis to this school hygienic and temperance educational work publishing about thirty lessons for all grades of pupils, indicating to teachers suggestive methods of presenting hygienic and temperance truths with valuable reference and illustrative material. Special emphasis has been laid upon methods of dealing with the cigaret evil among boys from the standpoint of the practical teacher. Of special interest to the general reader as well as to the teachers have been articles on the scientific, social and economic phases of the alcohol, cigaret and health questions from the pens of well known men as Dr. Winfield S. Hall, Chicago, C. W. Saleeby, M.D., London, Pres. David Starr Jordan, Judge G. W. Stubbs, Indianapolis, T. A. MacNicholl, M.D., New York, A. Forel, Switzerland, John Warren Achorn, M.D., Boston.

The Federation was represented at the Stockholm International Congress against Alcoholism by two of its directors, Dr. T. D. Crothers and Dr. T. A. MacNicholl, who were also official representatives of the United States, this being the first time our government had appointed such delegates.

At this Congress, an International Temperance Bureau was organized with purposes nearly identical with those of the Scientific Temperance Federation. Arrangements have been made for the close affiliation of the two organizations and the Federation will be known as the American

branch of the International Bureau. At the initial meeting of the latter Dr. T. D. Crothers was chosen a member, with representatives of seventeen other countries, of the Central Committee of the International Bureau.

Among the corresponding members of the Scientific Temperance Federation are the following:

Prof. E. Kraepelin, University of Munich, Germany; Max Kassowitz, M.D., Professor of Children's Diseases, University of Vienna, Austria; G. Aschaffenburg, M.D., Editor "Criminal Psychology and Penal Reform Monthly, Cologne, Germany; Reid Hunt, Ph.D., M.D., Chief of the Division of Pharmacology, United States Hygienic Laboratory, Washington, D.C.; Dr. A. Holitscher, Secretary International Society of Abstaining Physicians, Carlsbad, Germany; Walter N. Edwards, F. C. S., London, England.

The active and associate membership includes persons who are members (and most of them officials) in the following organizations which represent a wide range of interests.

The American Medical Association
The American Academy of Medicine
The American Society for the Study of Alcohol and other Narcotics
The Society for the Study and Prevention of Tuberculosis
The Society for the Study and Prevention of the Social Evil
The German Society of Abstaining Physicians
The Social Education League
The American Health League
The United Kingdom Band of Hope Union
The International Temperance Bureau
The National Education Association
The National Temperance Society
The United Society of Christian Endeavor
The Anti-Saloon League
The Woman's Christian Temperance Union
The Permanent Committee on Temperance of the Presbyterian General Assembly
The Temperance Committee of the National Council of Congregational Churches
The Unitarian Temperance Society

Associate Membership is open to all who pay an annual subscription of two dollars. Members receive notices of new books or publications on the alcohol question, samples of literature published, the School Physiology Journal, or other special bulletins, and have access to information

available. Information requiring special research is furnished for an additional nominal fee to cover the expense of the same. Inquiries should be addressed to the headquarters of the Federation, 23 Trull St., Boston, Mass.

The organization of the Scientific Temperance Federation with its emphasis upon scientific and educational principles, is timely. Nor is emphasis upon education inconsistent with the truly scientific spirit expressed by its name. Before truth can be given the people it must be gathered from its many sources, isolated facts brought into their proper mutual relations and studied in the light of past knowledge.

Truth has power only as it is given outlet. Thus the two phases of the Federation's work while distinct in their nature, are interdependent in their operation and place the Scientific Temperance Federation among the agencies which are working along rational lines for social betterment.

It seeks the intelligent coöperation of all who desire to minimize or to eliminate the influence of alcohol and other narcotics as factors in social deterioration.

EDITORIAL

During the past year the temperance problems of prohibition and local option, and other measures to restrict the use of alcohol as a beverage, have come into unusual prominence. Public sentiment every where is turning to physicians for instruction and information on these topics, and the medical man who is not clear or able to teach the scientific aspect of this subject, must lose his influence as a public man.

It is not a question of personal opinion, but one of facts and their conclusions in which the physician is the natural authority, and THE JOURNAL OF INEBRIETY is the great text-book giving the latest facts and teachings of science in this field. For thirty-two years this journal has been going out to the public, pointing out facts concerning alcohol and inebriety, entirely from the scientific side.

There is not a journal published of more intensely practical interest to every medical man, and there is no journal, the studies of which, will do more to keep the profession in the front ranks of scientific teachers in the community. THE JOURNAL OF INEBRIETY is becoming a necessity, because its studies concern the thought and practice of every medical man in every community of the country.

The JOURNAL should have fifty thousand subscribers during the coming year, for the reason that its facts and studies indicate the direction for the final solution of this great problem.

More than half a century has passed since the first inebriate hospital and sanitarium was opened for the medical care of inebriates. A review of this period is exceedingly interesting in the records of failures and obstacles and successes which the work encountered.

The first institution at Binghamton, New York was more than a half a century ahead of the times in its plans and purposes, and very quickly became an object of bitter opposition and condemnation, which finally ended in its destruction as an inebriate asylum. A number of similar institutions which began with great enthusiasm went down in the storm of opposition and public criticism.

The three or four which survived have passed through harsh and bitter experience. Institutions began on different theories of the work to be done, have had to change or be abandoned, or else merge into some sanatorium for neurotics or insane.

The history of the efforts to make the medical care of inebriates a distinct institutional work has been followed by credulity, suspicion, doubt, condemnation and great confusional efforts. This has been so pronounced and different from the early work, for the institutional care of the insane, idiots and others, as to suggest inquiry of the special reasons and causes for it.

One of the very evident reasons is that the public estimate of the care of inebriates has been very largely determined by the opinion of inmates and inebriates themselves. Those most incurable and degenerate have been the loudest and most emphatic in their criticisms condemning the work, while those who have been permanently benefited have concealed the facts of their treatment, and rarely ever refer to the institution, fearing some reflection on their former condition. Another reason is the mistake of the managers in placing persons in responsible positions for the immediate care of inebriates, who have previously suffered from this disease, and whose experience is supposed to give them unusual fitness for the care and treatment of persons suffering in like manner.

Another equally grave mistake is that in supposing that moral degeneration and ethical feebleness constituted the most prominent part of the disease, hence clergymen and emotional, sympathetic persons and reformers possess unusual qualifications for this work.

Also another is made, in placing ambitious dogmatists with positive theories as to exactly what the disorder is and is not, and unreasonable judgment to test and carry them out. As a result of these costly mistakes there has been confusion, misrepresentation and failures, where under more conservative rational management with a scientific instinct of disease and a student's study of the conditions, the institution would have gone on with success.

Many institutions have been organized and managed

by other motives than that of an accurate knowledge of the conditions and methods for the proper care and control. They too have failed.

Quack institutions offering specifics have been far more shrewdly managed, even by reformed inebriates, simply for the reason that the immediate wants of the patient is realized, and his needs applied with psychological shrewdness, which for a brief time made a good impression.

Some of the larger institutions where pauper inebriates are gathered have been managed on the most confusing theories of vice, disease and criminality. As a result the restraint of the prison, the wholesale methods of treatment without recognition of the individual and his physical condition, have been practical failures.

No wonder the statements of inmates would suggest legislative inquiry and the managers would find great difficulty in defending any clear theory of the study and treatment of inebriety. Thus the work is more uncertain in public esteem, and does not take the rank it is entitled to. The inebriate is the most complex of all the degenerates, and requires more psychologic and medical skill to treat and control, and institutions that are not formed and managed on broad scientific basis, fail to win respect and secure the esteem they deserve.

A review of the centuries work is exceedingly hopeful, notwithstanding all the difficulties. Institutional work for the cure of inebriates will occupy a very large part of public attention in the near future and the success of every effort, both public and private will be in exact proportion to the skill of its managers and their scientific conceptions of the inebriate, and his malady.

The report of the Secretary of the Scientific Temperance Federation Bureau is a most interesting outline of a new work, that will attain great prominence in the near future. Every one of our readers should join this Federation Bureau and contribute all papers and statistical matters on this subject for future study. No work will give such immediate results, not only to its members, but to the

cause in general, and the report shows clearly the need and practical importance, to every student of the subject. The organization and its managers are particularly fitted to make accurate researches and give assistance and data on what is being done in the alcoholic problem over the entire world. The address of this Bureau is 23 Trull Street, Boston, Mass.

The concluding part of the Second Norman Kerr Lecture appearing in this issue gives a very striking confirmation of the views so often presented in this journal. The discussion which followed, particularly in the public press in England has culminated in a petition to the home secretary to take up this subject and make inquiry as to better methods for treatment. It is announced that the government will appoint a committee to take evidence on the treatment of inebriety. This committee will be in session during the summer months and will no doubt summons a great many witnesses to give evidence on the treatment. Curiously enough the promoters of "specific cures" have appealed to the secretary to know if they will be allowed a hearing. The answer was that every one will be welcome to bring in all the evidence they possess on this subject. The committte will no doubt be composed of eminent scientific and practical men, fully able to discriminate between facts and fiction, hence persons of this class will get a publicity that will be fatal to their work.

Alcohol as a Light and Fuel

It is evident that alcohol is rapidly being made to help on civilization rather than destroy it. The reduction of the tax on alcohol, and permission to make it in the denatured form has developed new uses, that promises to revolutionize many of the great industries of the country. The price is reduced now to forty cents per gallon and lower. In Germany it is manufactured from potatoes, and sold at twelve cents per gallon.

At this price it is the cheapest fuel in the world. No form of gasoline can compete with it. The remarkable

fact is, that it can be made from waste matter such as, refuse apples, cabbages, corn cobs, corn stalks and the garbage that comes from the kitchen. Only substance containing starch or sugar can be readily converted into alcohol.

The supply is without limit and inexhaustible. The great question now is, to provide stoves, boilers and lamps that will practically utilize this in heat, power and light. Capitalists and inventors are recognizing this demand and the number of patents filed with the department for new inventions to convert the alcohol into power and light are constantly increasing. New lamps must be invented different from those used for oil. Several already on the market claim to develop a greatly increased light over that of any other substance, except electricity. As a power it may be used in motor cars and engines with a promise of greater intensity of heat and force than any other substance.

As a fuel for heating and cooking great advances have been made. Many burners are now in active use doing this work. It is absolutely certain that alcohol will come into general use and be an active rival of electricity in doing the world's work.

The Worlds' Temperance Congress to be held at Saratoga Springs, New York, from June 14 to June 22, 1908, has issued an advance programme which gives some idea of the magnitude and suggestiveness of this work. Every temperance organization in this country will be represented by their most eminent advocates. The medical and scientific side of the subject will include several historic addresses on eminent men who have been influential in promoting the cause of total abstinence. Other papers promised will be confined to an historical review of the scientific facts concerning alcohol and inebriety up to the present. It is very evident that the scientific side of the subject will occupy a very prominent place, and undoubtedly attract a great deal of attention.

The unexpected development and materialization of the anti-alcoholic problem into strong legal measures, with most endless discussions, will make our annual meeting at Chicago, in June, a center of unusual interest. The Temperance Lunch has already been projected, and a large number of physicians are making inquiries as to what will be said and done. The question of alcohol as a beverage and Medicine has suddenly come into great prominence, and the discussions centering about it, only add to the confusion and interest. The coming meeting will be marked by the large number of papers offered by persons who have previously not taken an active part in the subject.

From the number of inquiries received concerning cereal foods in the treatment of inebriates and neurotics, it is evident that they are fast becoming prominent as medicinal agents. From inquiry at different institutions, we find that certain cereal foods occupy a very large place in both the diet and curative means used. We shall take up this subject, collect the facts and experience concerning the different foods, and publish them in future numbers of this Journal. The nutritional treatment of inebriety is a new field of study and the popularity of many cereal food indicates a demand that must come largely from neurotic and nerve exhausted men and women. Exact information on this subject is greatly desired.

Training Children to Become Inebriates

The eminent specialist Dr. W. L. Howard recently contributed a most suggestive paper to a popular weekly, indicating ways in which children are trained to become drunkards. This paper was reprinted and very extensively commented upon.

One critic denied and bitterly condemned the sentiment expressed, saying that such facts did not occur and at all events they were exceptional, and that the paper was simply a sensational sentimental appeal not founded on facts.

In this he showed a want of practical knowledge, and a suspicious bias in favor of the use of alcohol. A pro-alcoholic probably interested in the spirit trade, and at

least a very strenuous defender of alcohol as a beverage, had this experience in his family.

His oldest son was given unlimited means in his school and college career, and after graduation was told by the father that he must now take care of himself and earn his living. He had grown up untrained to self denial, using beer and spirits in fast company and had everything at his command. All real training for work and ambition to succeed had been neglected and he was practically crippled.

His father stubbornly refused to give him any assistance, and very soon he became a gambler, confidence man and later an inebriate, and died a disgrace to his parents. The father was responsible for this. He had actually trained his son for the life which he led by giving him all the money he wished and placing him in centers of temptation

Dr. Howard describes the wreck of a young man who promised a most brilliant career and this was the history of his early training downward. "His mother was ill immediately after his birth, and he was placed in the care of a nurse. The best intentioned nurse cannot feel the future responsibility to the child. If the child disturbed her rest and annoyed her by its cries, what is more natural, than that she should give the baby a dose of one of the much advertised harmless soothing syrups? Of course the baby sleeps quietly; he is in an opium sleep. Of course, he looks fat and well nourished; but it is drug-bloat. With this a little gin was frequently given. 'It is good for the kidneys,' the nurse said. Then she said that it was the custom to give a little soothing syrup to all babies. It helps to soften up the gums. Yes it did, and also helped to soften up the delicate tissues of the brain. By and by the mother recovered. The nurse left, but the baby missed the opium and cried and went into spasms.

"Every tiny nerve cell was crying out for this poison. A soothing syrup was given to him again, and he sweetly slept only to be poisoned again when the affect had worn off. So poisoned with drugs from infancy, he was thoroughly trained and died in early manhood, the direct result of the early training."

The only son of a clergyman began to drink in college, and is now a dement in an insane asylum. The parents considered this was an infliction of providence and one of those inscrutable sorrows which are so common. In reality it was a pure case of culture and early training.

The little baby had been given spirits in infancy in milk, had been washed in alcohol. The mother had used beer to increase the flow of milk and the first ideas of life, wine had been given as a tonic and stimulant. Perhaps soothing syrups also entered into the early medicinal measures. The child was poisoned. The seed which developed in future inebriety was planted, nourished and grown as literally as that of a plant.

The parents ignorance destroyed the son. Instances like the following still farther bring out this fact and are common in the histories of many inebriates.

Emotional and excitable men and women marry and celebrate the occasion with wine and spirits, and commence housekeeping with a supposed luxury of wine at meals. Later, delicate nervous children are born, and still later they become inebriates and drug takers. The parents are ignorant of their responsibility of the fact that they have trained and cultivated this terrible entailment

Occasionally both parents become abstainers and have a half recognition of the possible injury which comes from their early drinking. Later the birth of other children who grow up strong and vigorous, confirm the previous suspicion and deepen the sorrow of their early mistake.

Dr. Howard calls attention to another source in which children are trained to become inebriates in later life. He writes, "I have directly traced many persons whose habitual drunkenness was due to spirits obtained through the nurses' milk." "Quite frequently you will find a nurse who is feeding a child, who takes a glass of beer or ale with her meals and at night. She tells you that the doctor told her she needed some such tonic to keep up her strength. Now, it is not probable that a glass of beer at meal time will apparently have an appreciable effect on the milk, and yet it has. There are dangerous possibilities here.

The human system can, physiologically, burn up a certain amount of alcohol during twenty-four hours. But just what that quantity is, for different individuals, is uncertain. One nurse may consume many bottles of beer during the day which may be apparently used, but about this no one can tell. If she should exceed a certain amount the residue will be found in the secretions. Any excess of beer or alcohol in the system goes into the milk secretion, and the little baby gets the first poisonous drink. Thus the by-products of beer or spirits are continually imbibed, and the fretful, irritable, pale, anæmic little one is being trained for the inebriate in later life." Thus the subject widens and the evidence accumulates, showing the positive physical causation beginning back in apparently obscure and unknown conditions, but the entire history is one of distinct cause and effect. The same laws govern here as in plant life, and the mystery is dissolved. The inebriate is the direct product of conditions which can be anticipated and prevented.

Every institution where inebriates are studied and treated present examples of the injury, dating from the medical treatment of children by different forms of alcohol, on the supposition that they were tonics and stimulants. Fortunately the treatment of infantile diseases by spirits is passing away, and the doctor, who unconsciously planted the seed and gave the early training and direction to the psycho-pathic disease of inebriety, is also disappearing.

As yet there has been no strong protest or clear recognition of the dangers from this source. A few authors still speak in a guarded way of the possible value of spirits to both mother and child, but it is simply the dying echo of a most dangerous theory of the past.

THE JOURNAL OF INEBRIETY

EDITED BY T. D. CROTHERS, M.D.

VOLUME XXX

BOSTON, RICHARD G. BADGER

The Gorham Press

1908

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