

THE
JOURNAL OF INEBRIETY

Incorporating The Archives of Physiological Therapy

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

T. D. CROTHERS, M. D., EDITOR

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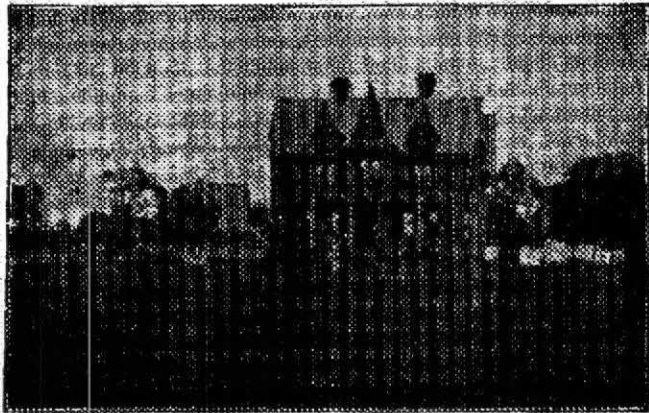
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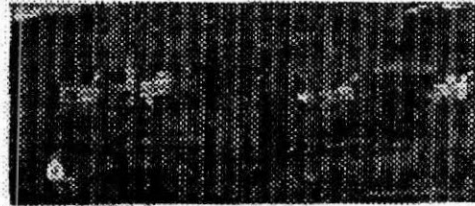
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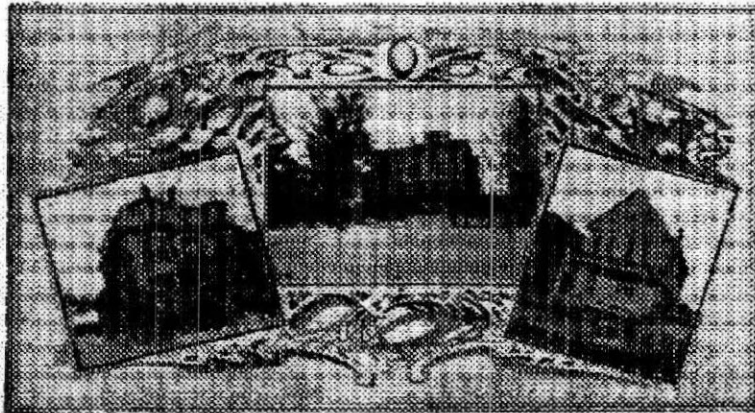


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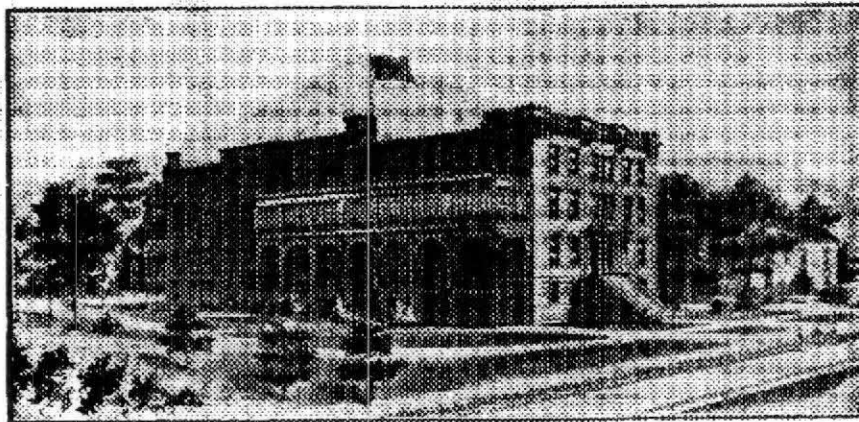
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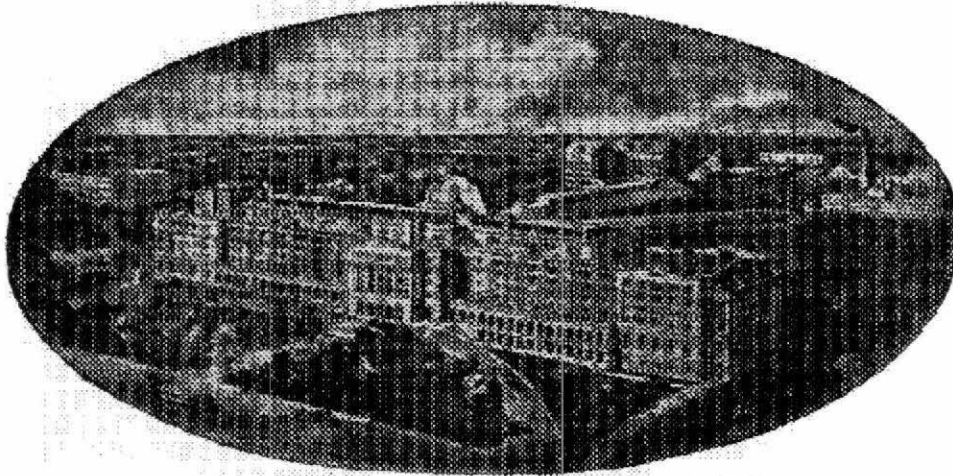
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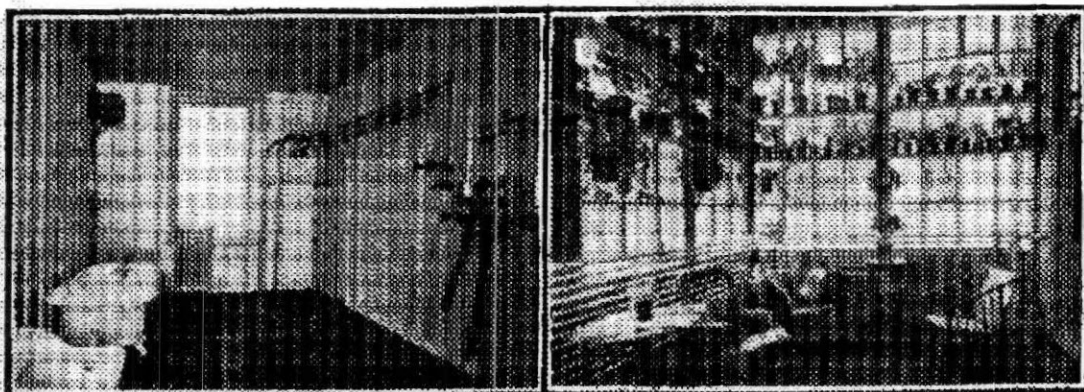
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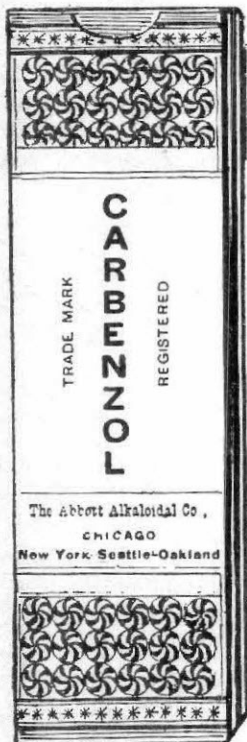
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THE JOURNAL OF INEBRIETY

Incorporating The Archives of Physiological Therapy

Volume 29

SPRING, 1907

Number 1

THE INFLUENCE OF NARCOTICS UPON METABOLISM*

By Winfield S. Hall, Ph. D., M. D.,

Professor of Physiology, Northwestern University Medical School, Chicago

Before we can enter intelligently upon the discussion of the influence of narcotics upon metabolism it will be necessary for us to have a perfectly definite idea of what a narcotic is. Quoting from the Century Dictionary a narcotic is "a substance which directly induces sleep, allaying sensibility and blunting the senses and which in large quantities produces narcotism or complete insensibility." Opium is the most typical of the narcotics. According to the interpretation of Schmiedeberg, Bunge, Lauder Buntou, Kraepelin and many others alcohol should be classed with narcotics. It is only in comparatively recent times that alcohol has been classed among narcotics. This is due to the fact the first action of a comparatively small dose is to lead to increased activity. It is really a stage of excitement quite similar to that which a patient experiences when going under an anaesthetic. Large doses are followed by typical narcotic effects as difficulty of movements, difficulty of speech, disturbed equilibrium in

walking, followed by deep torpor, or sleep. If the dose is a large one there may be a total unconsciousness resembling a chloroform-anaesthesia. The respiration becomes stertorous and slow and the face which has been flushed becomes pale or cyanotic. While Binz and his pupils still hold that alcohol is a stimulant the number of those who accept the interpretation of Schmiedeberg and his school are rapidly increasing. According to Schmiedeberg's school the preliminary excitement which accompanies small doses of alcohol is due to the weakening of the higher brain functions, will and self-restraint. "Even the small quantities of alcohol tend to lessen the activity of the brain, the drug appearing to act most strongly, and, therefore, in the smallest quantities, on the most recently acquired faculties to annihilate those faculties which have been built up through education and experience, namely, the power of self-control and the sense of responsibility." (Cushny.) Small doses are followed by increased confidence in the physical and mental

*President's Annual Address, American Society for the Study of Alcohol and other Narcotics

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powers; but experiments on individuals under the influence of these small doses show that the physical and intellectual powers are not increased. In fact, the intellectual faculties are decreased. Krepelin's work has demonstrated this conclusively. "In the lower parts of the central nervous system evidences of primary depression are less open to question. For example, the co-ordination of the movements suffers at an early stage in alcohol drinking, long before the generally recognized forms of lack of co-ordination such as indistinct speech and staggering appear. In the spinal cord alcohol causes a depression or reflex irritability which passes into complete paralysis some time before respiration ceases. The medulla oblongata is the last part of the central nervous system to be acted on by alcohol, or at any rate to undergo complete paralysis by this drug." (Cushny.)

A parallel case illustrating the influence of alcohol upon the nervous system could be cited in the case of a driver and his team. Let us imagine a spirited team driving along the boulevard controlled by a driver, through whip and reins. The team represents the motor functions of the body, and the driver the higher brain centres, reason and will. The brain controls the motor functions through positive motor impulses and inhibitory (negative) impulses, the interaction of these two sets of impulses bringing the motor function under perfect control. Similarly the driver through reins and lines maintains complete control over his span. He touches them with his "stimulus" and their speed is accelerated, but he may at will check this speed and hold his span under perfect control through the inhibitory action of his reins. In

a moment, at will, he may have accelerated action on the part of the team in either one or the other of two conditions. First, either through action of his whip (increased stimulation) or either through relaxation of the reins (decreased inhibition). In either case there is increased action upon the part of his team. But in one case he maintains control through his taut reins; in the other case he gets increased action with loss of control. The by-stander notes the increased activity of the team in each case, he may easily be betrayed into the fallacy that in both cases the increased action is the result of stimulation. We know, however, that in the first case there was a real stimulation; the reins serving to control; while in the second case there is increased activity through loss of control. This second case of apparent stimulation may be called pseudo-stimulation.

Applying this illustration to the case of the motor system of the individual it is very evident what is taking place. The early effects of alcohol decrease inhibition. We can, therefore, note excitability and increased movements, but it is not difficult to detect that these movements are not under perfect control and are likely to be in-coordinate; the nervous excitability being a thorough mark of the lack of perfect control. As the dose of alcohol is increased or in the case of a large dose, as time advances there is narcosis not only of the inhibition and control, but of the whole neuromuscular apparatus, excepting that which presides over the primitive animal functions.

In the light of this explanation of the action of alcohol it is not difficult to understand why there should have existed for many decades a misinterpretation of this action. Not only

do we find alcohol continuously referred to by the laity as a stimulant but it is actually classified as such by many medical writers. It goes without saying that no substance can be both a narcotic and a stimulant. Alcohol possesses besides the pseudo-stimulant action upon the nervous system a local irritant action. We must now set forth the differences between irritant action and the real stimulant. If one were to put five per cent sulphuric acid on the back of his hand he would in a few moments experience an intense smarting and burning that would lead to his making many rapid movements in order to allay this smarting or burning. While the acid can from the standpoint of the physiologist be referred to as the stimulus which produced the series of movements directed toward the allaying of pain; the pharmacologist would not on that account classify the sulphuric acid as a stimulant, but rather as a local irritant. In other words, there are many things that may serve as stimuli that are not in the pharmacological sense stimulants. So the temporarily increased excitability of epithelium to which alcohol has gotten access is a manifestation of a local irritant and not a real stimulant. We may then feel absolute confidence in the tenability of our position when we maintain that while alcohol is a local irritant and while through its stupefying action or inhibition it produces a transitory condition of increased action, this increased action represents not true stimulation, but pseudo-stimulation and is an evidence of lack of control, —an evidence of a narcosis of the inhibitory centres. *Alcohol is then, as we may say without reservation, a narcotic.*

THE INFLUENCE OF NARCOTICS UPON METABOLISM

So long as it is contended that alcohol is a stimulant and not a narcotic its influence upon the body functions in general and metabolism in particular is certain to be misunderstood. When we accept the verdict of these well known scientists that alcohol is a narcotic its action upon the body functions becomes an open book so easily understood that he who runs may read. On a *priori* grounds one should expect a narcotic to slow tissue activity. Experiments show that opium and its alkaloid morphine have this effect. Experiment also shows that alcohol has the same effect as morphine when given in doses large enough to manifest the full physiologic action.

I. Influence on the Elimination of CO₂. If body activity is decreased by doses of narcotics large enough to produce the full physiologic action we should expect that this decreased activity would make itself manifest in decreased elimination of CO₂. Experiments have shown that this is the case. Whether these active tissues of the body are under the influence of opium, alcohol or any other narcotic, their activity is decreased; there is a decreased consumption of oxygen and a decreased elimination of CO₂.

II. The Influence on Body Temperatures. Doses of opiates or of alcohol sufficient to produce the full physiologic action are followed by a fall of body temperature. In the case of the opiate this fall of temperature can be ascribed solely to decreased metabolism. In the case of alcohol, however, two things are at work. First, the most direct effect of alcohol is the narcotic action upon the vaso-constrictor centres, or, per-

haps, upon the vaso-constrictor nerves direct, leading to a marked dilatation of arteries, particularly of the cutaneous branches. In this dilatation of cutaneous blood vessels, the individual experiences a glow of warmth most pleasing when he emerges from a house on a cold day, but also most misleading and dangerous if he is to remain exposed to the cold for a number of hours. This flush of the surface features and glow of surface warmth results in a rapid radiation of body heat. This leads naturally to a fall of temperature. This fall of temperature is accentuated by the fact that at the same time that the heat is being rapidly radiated from the surfaces, it is being more slowly liberated in the muscles and glands. This accounts fully for the fact that mountain climbers in higher altitudes, and travellers in higher latitudes cannot be induced to partake of even small doses of alcohol or small portions of alcoholic drinks. They know very well from the recorded experiences of former travellers that such indulgence in alcohol would probably be fatal. What the traveller needs when he is to be subjected to such an ordeal of his energy and heat producing tissues is not something to slow tissue action and something to disburse body heat, but the exact reverse of this drug action. So we find a man taking sugar, which represents the most easily assimilable and readily metabolized food—which represents next to fats the food of highest heat producing and energy producing co-efficient for its weight.

III. Influence on Muscle Action.—If alcohol in any dose increased the strength and agility or the graceful co-ordination of muscular activity we would expect it to be prescribed when such a manifestation of muscle activity is desired. We would expect, for example, that the football coach would prescribe alcohol to increase the strength and energies of his team or the trainer to prescribe alcohol to the prize fighter whom he is training for a contest. The experience, however, of this coach and trainer as well as coaches and trainers in general has led them not only not to prescribe alcohol, opiates or any other narcotic for these purposes, but actually to prohibit these drugs. So strong are the rules imposed upon the men who are entering athletic contests, that they must risk expulsion from the team if found indulging even in small quantities of that drug, either as a beverage or a medicine. But this attitude of the trainer and coach is the result of experience and empiricism. Experiments in many laboratories, however, have demonstrated that this experience is in harmony with the experimental researches; and that these show that muscles are never given more strength, made more agile or more gracefully co-ordinated even by small doses of alcohol. On the other hand, the small dose causes a definite loss of strength and leads to fatigue, confused co-ordination and decreases the agility.

IV. Influence on Brain Action.—There is more confusion and disagreement regarding the influence of alcohol upon the nervous system than in any other field of alcoholic influences excepting its alleged food value. This is due to the fact set forth at length above; that small doses of alcohol or large doses in their primary effects cause a narcosis of the cerebral inhibition, thus loosening the reins and causing increased action without control. This is set forth above as

a pseudo-stimulation. That it is not a real stimulation must be evident because no man under the influence of alcohol can do more work in six hours than he could without such influence. On the other hand, the amount of work that he could do in such a period would not be only less in quantity, but very much decreased in quality. Even men who believe in the moderate use of alcohol, advise against its use until the brain work of the day is completed. Experiments such as those worked out by Kraepelin and others demonstrate conclusively that alcohol is a narcotic and has an effect upon the special senses, decreases their acuteness and increasing the latent period. Just how alcohol exerts itself upon the nervous system has been worked out in detail by Riley* who showed that under the influence of this drug the chromophilic bodies which represent the potential energy of nerve cells become either more rapidly exhausted or less rapidly deposited, leading to a depletion of the nerve cells.

But these chromophilic bodies represent the nerve energy and without their presence the nerve cells cannot continue their normal activity. Thus we find that metabolism in nerve tissues is sorely interfered with by alcohol. What is true of alcohol is in a general way true of other narcotics. *Influence on Glands, Especially the Liver.* While the local irritating effect of alcohol may cause a temporary increase in the secretion of saliva or perhaps also of gastric juice, the final effect upon the glands is strictly a narcotic one. A recent valuable contribution to this subject was made by Dr. Salant of New York.* The first question to which Dr. Salant gives attention is: "Does alcohol on account of its high calorific value, spare the glycogen of the liver, and thus retard its disappearance." As a result of his experiments he shows "the conclusion is, therefore, justified: that thirty per cent. alcohol, when given in the amounts stated, does not spare the glycogen of the liver, while the *rec* experiments with large quantities of alcohol suggest that a more rapid transformation of glycogen has taken place." Dr. Salant's second question was: "If alcohol fails to spare the glycogen, does it behave like various other toxic substances in this regard, and accelerate the disappearance of glycogen from the liver. His extended experiments on this phase of the problem are thus summed up: "The analytic results given in the table show, with one exception, a marked diminution in the glycogen of the livers of the alcoholic rabbits, as compared with the controls." "The conclusion seems to be justified, therefore, that large quantities of alcohol may hasten the process by which glycogen is made to disappear from the liver and that it apparently exerts this action only after the stage of intoxication has been passed.

Dr. Salant's closing paragraph is so important that its complete quotation is more than justified.

"The present study suggests certain considerations concerning the use of alcohol in infectious diseases. Cells, who studied the influence of glycogen on resistance in infectious diseases, made the very interesting observation that increasing the glycogen of the liver and muscles in rabbits by adding glucose for fifteen days to their daily diet improved their ability to combat bacterial invasion. Although his findings were later disputed by Lausch, which leaves the matter an

*Journal of Innerbility, October 1900.

open question for the present, nevertheless the possibility that such may be the case is of considerable importance, for if resistance to infection is increased by increasing the glycogen content of the body the administration of large quantities of alcohol in infectious diseases practiced by clinicians is not an unmixed blessing, since, as is shown by my experiments, it tends to diminish the glycogen of the liver, thus probably robbing the body of a very effective weapon to combat infection." (William Salant, M. D., "Further Observations on the

Influence of Alcohol on the Metabolism of Hepatic Glycogen, Jour. A. M. A. Vol. XLVIII., No. 18.)

That inhibition of alcohol actually decreases the resistance of the body to disease has been known for some time. It has not, however, been understood just how alcohol accomplishes this untoward effect. It is more than likely that the work of Dr. Salant gives us the clew to the way in which alcohol breaks down the resistance of the body to bacterial invasion.

MENTAL DEGENERATION THE RESULT OF ALCOHOL

By Robert Jones, M. D.

*Superintendent London County Asylum
Lecturer on Mental Disease at Westminster Medical School, London*

On January 1, 1905, there were 119,829 insane persons in England and Wales, of whom 55,169 were males and 64,660 females, being a proportion of one insane person to every 285 of the population. Of this number 109,277 persons (50,180 males and 59,097 females) were of the poorer classes.

It is no easy matter to determine with exactness the cause of any disease, but in respect to mental disease this becomes a task of extreme difficulty, as no definite factors of causation are vouchsafed, the information usually obtained being some antecedents in the history of the patient which are considered by his friends to bear some relation to the attack of insanity, and those which stand in more immediate relation to it being given the greatest prominence as factors of causation.

attributed as an assigned cause of insanity in 22.7 per cent. of all the male admissions into asylums and in 9.4 per cent. of the females; the proportion for private patients, being 16.7 per cent. for males, and 8.6 per cent. for females, and for pauper patients 23.6 per cent. for males, and 9.6 per cent. for females, showing the lesser resistance to temptation among the poorer classes.

It is fair to state, however, that intemperance is often an effect, as well as a cause, of brain weakness or disease, and the intermingling of these antecedents renders it impossible to arrive at precise conclusions as to causation, but the Lunacy Commissioners in their last report, dated 1905, to the Lord Chancellor—issued as a Blue Book—acknowledge that "alcohol is a brain poison." It is interesting to note as pointed out in this report that certain counties with a comparatively low rate of insanity show a high proportion of cases admitted with a history of intemperance; that counties with a high rate of insanity have a low proportion of cases from alcoholic intemperance and that areas in which the association of intemperance and insanity exists correspond with those areas in which intemperance and crime also prevail.

Dr. Brevan Lewis recently referred to the geographical incidence of alcoholism, and pointed out that the industrial people in coast counties, were the most intemperate, but had the lowest ratios of pauperism and insanity; whilst inland agricultural people were the least inebriate, but had the highest ratio of pauperism and insanity. This apparent dissociation between alcoholism and insanity is a complex question, for pauperism, want, anxiety, and other moral

factors are essentially related to both insanity and drink.

I am convinced that the great question of the effects of alcohol upon the human organism is primarily one for the medical profession, for intemperance has in numerous instances been initiated through misapprehension of medical advice in regard to the use of stimulants; and secondly, the question of the use of alcohol is a sociological one. The causes of drinking are so many and so minutely varied that great caution is required before accurate conclusions in regard to them can be arrived at.

We hear a great deal about lowered vitality, about the craving for luxuries and excitement, and about alcohol in any shape and form being a poison and that many facts are distorted by fanatical enthusiasts who are too apt to indulge in hasty generalizations and in severe condemnation of those temperate people who themselves are endeavouring to the best of their ability to prevent the spread of excessive drinking and to educate the public in regard to the evils which must follow and how these may be mitigated.

The profession of which I am a member, has, I venture to think, within recent years, done more than any other to fix attention upon the evil effects of intemperance, and a proof of this statement is the petition presented a little over a year ago to the Board of Education, signed by 15,000 medical men, asking for fuller and more correct information about the physiological effects of alcohol to be taught to children in our public elementary schools.

There is no question of public interest that is in greater need of being studied by sober-minded individuals than this question of drink,

and in a country in which every attempt is now being made to educate the masses it should not be forgotten that the elevation of the individual out of the sphere into which he was born may impose a tax upon his nervous system which may eventually expose him to serious temptations. The frequency with which neuroses and psychoses-diseases of the nervous system and affections of the mind are met with in families in which there has been a sudden and rapid change in the environment—for example, the removal from a country to a city life, or from comparative straits to comparative affluence—is a factor of great importance and it has not received the consideration it needs. Addiction to alcohol is an indication of a functionally unstable nervous system, and under the stress of the conditions created by modern civilization, many individuals whilst attempting, as they suppose, to better their condition in the social organization are thrown out of sympathy with their surroundings and become subject to excessive nervous strain—drinking being the phase presented of this general and mental instability.

Now it is a fundamental law in evolution and dissolution that the last, most complicated and highest developed function is the first to go in disease. The highest faculties of man are the attention, intellectual discrimination, and judgment. Upon these alcohol exerts a degrading and degenerating influence. It is upon the highest mental faculties, upon beliefs, ideals, ambitions and desires that conduct depends, and there is no fear of exaggeration when the statement is made that the greater part

sion as well as of commission—result from excessive alcoholic indulgence.

Indeed the gradual non-observance of the three C's—"Ceremony, Courtesy, and Convention," and their replacement by the three P's—"Persiflage, Paradox, and Prurency," demonstrate the effects of alcohol upon conduct which through its effects gradually retrogrades until the most complete eradic degeneration eventually results. Not only in delinquency but also in inmere criminality does alcohol exercise a genetic power. Crimes due to alcohol have in Germany reached the figure of 41.7 per cent. of the total crimes. In France, delinquency has also risen to 45 per cent. where big consumption of alcohol has increased, a corresponding diminution having occurred during those years in which the vine crops were very bad. In Hungary delinquency (through alcohol) has reached to 35 per cent. of total crimes, in Norway to 44.4 per cent., and in the districts surrounding St. Petersburg to 47 per cent. In our own country 50 per cent. of crime is attributed to the abuse of alcohol.

The question, "What is the recognized effect of drink on crime," is closely related to our present subject, and it was asked at the International Penitentiary Congress at Brussels in 1900 and was subsequently reconsidered at the Congress at Buda-Pesth in September of last year. At this congress 28 States were represented by 82 official delegates and the number of adherents was 335. The subjects treated by the Congress embraced the problems of penal policy, especially the deprivation of liberty with reference to the prevention of crime. Punishment comprehends the whole study of man, it enters into the so-called "Factors" of crime, moral

Preventive measures, education, religious training, means for repressing drink, were all considered by the Congress. It was shown by Dr. Legrain, of Paris, that a high percentage of offences committed were either the direct or indirect consequence of drink. Dr. Mason, of Belgium, in a careful analysis of cases of grave crime estimated that 44 per cent. were habitual drunkards and of these 11 per cent. were drunk at the moment of crime. Of those sentenced to capital punishment over 50 per cent. were addicted to alcohol. The further examination of 5,000 cases from the Central Prison of France showed 66 per cent. of crime as a result of alcohol.

Crimes of violence were particularly connected with drink, the proportion of these reaching the high percentage of 83 of total crimes. It was also pointed out that the usual police court recidivists had a proportion of 77 per cent. of habitual drunkards. The Congress considered idleness or absence of some trade or calling to be an important contributory factor to crime, and as a result of deliberation the Brussels Congress recommended that the deleterious effects of alcohol upon the bodily organs should be illustrated by lectures and pictures. As a result, pictorial emblems vividly representing the harm of drink have been placed in the corridors and rooms of the various prisons. It is even suggested that these pictures should be of terrifying description so as to force conviction upon the minds of the most callous and indifferent. Such exhibitions occur in prisons in France, Belgium, and America. As a further precautionary measure and owing to the overwhelming demonstration of statistics respecting Zurich,

Berlin, and Vienna the great proportion (33 to 4) of offences resulting from drink were perpetrated on Saturday, Sunday, and Monday as compared with the other days of the week; these being the result of wages spent on alcohol and owing primarily to idleness. In consequence the Congress at Buda-Pesth last September voted, among other measures, in favor of special restraints being placed upon the sale of drink from Saturday to Monday, and they were most decidedly in favor of "Anti-alcoholic instruction" in prison, by lectures, pictures, and diagrams.

The mental development of these cases, who through drink become the inmates of prisons, workhouses, and asylums is not of a high grade and of those who are received into the State reformatories 10 per cent. are subsequently certified into asylums, 70 per cent. are on the borderland between sanity and insanity, whereas 20 per cent. are described as vicious. Up to the end of March, 1904, 937 women and 144 men were convicted under the Inebriates Act, of whom 70 of the former and 36 of the latter were transferred to State control as too refractory and violent for the ordinary certified reformatories. The mental condition of these is described as morally as well as intellectually depraved, being unfit to associate with decent human beings. No amount of persuasion can keep them from drink. They must have it even if it pauperizes them and makes them (where of good social status) the companions of low persons and criminals—even if their families are ruined by their self-indulgence. Nevertheless, if these people can be approached young, before these habits are formed and fixed, they are

not such hopeless material. We ourselves are convinced of the value of educating the young, of instilling into their mind and of burning deep into their consciences the associations of illness, disease, drink, and crime, and we shall refer to this aspect later.

As to idleness, Ruskin states, "It is only by labor that thought can be made healthy, and it is only by thought that labor can be made happy."

Now what are the effects of alcohol upon living protoplasm?

These have been carefully studied by competent observers, and the literature of the subject is full and extensive. Alcohol stops the germination of spores and grain, and it is even fatal to its own production, for when the proportion of alcohol exceeds 20 per cent in the material undergoing fermentation, further action of the ferment is arrested. The effect of alcohol upon protoplasm is to paralyze irritability, diminish sensibility, and impair contractility.

We have the record of innumerable experiments and irrefutable evidence of the evil influence of alcohol upon the metabolic, and motile, and the reproductive functions in all animal cells.

Physiology teaches us that alcohol is a strong dehydrating agent. It takes away water from living matter and as a fixed amount of water is a necessity for the life of healthy protoplasm this dehydrating action of alcohol must prove to be highly injurious to life. Alcohol passes with difficulty through the living membrane of the small capillary blood-vessels into the tissues, it acts upon the delicate cells as an irritant and causes the capillary walls to thicken, the thickened wall encroaches upon the minute tube-cavity of the

blood-vessels, and as a result the special organs of the body are deprived of their necessary nutriment.

This condition of the blood-vessels, furthermore, retards the excretion of waste material from the tissues which in consequence accumulates, and interferes with healthy and normal functions; and it is this accumulation of effete material, which should be eliminated, that has given rise to the view that the injury from alcohol is not only a direct poisoning but also an indirect one, from the production and accumulation of waste products which cannot in this way be gotten rid of.

Physiological Effects.—Bevan Lewis states that alcohol in small doses causes an initial stage of increased blood-pressure with decreased heat production. This is followed by a stage of decreased blood-pressure together with increased heat production as well as great heat discharge. Coffee and tea are stated by Bevan Lewis to act differently, for heat formation was stimulated from the first as well as heat retention. The continued use of alcohol brings about, even in what is called moderate drinking, marked changes in the nervous, muscular, and glandular tissues. The action of alcohol is a structural one, and change of structure implies change of function.

In large doses it has been proved to cause changes in the pyramidal cells of the brain. It destroys the fine tissues of these cells, which swell up from degenerative changes, their outline being altered and the nucleus displaced or extruded. Fatty changes are produced in the voluntary and involuntary muscle fibres, in the various gland cells which in consequence alter the metabolism of the organism.

An increase takes place in the baser tissues, and the fibrous or cartilagenous elements multiply both in the blood-vessels and in the various secreting glands so that malnutrition is induced which reduces vigor and diminishes vitality, resulting in a lowered resistance to disease. As to the increase of fat in the body, that statement is not maintained that alcohol itself is consumed to supply the energy which is naturally obtained from tissue changes.

Alcohol exercises no "protective oxidation" over the body; on the contrary, it interferes with the building-up process by forming a compound with the haemoglobin of the red blood corpuscles, which takes up and parts with oxygen less readily than does normal haemoglobin.

The accumulation of fat noticed in beer drinkers is due to a general diminution in the metabolism of the body, and to an accumulation of the waste matter which should be excreted. This accumulation of fat is in part an active degeneration as well as an infiltration, and it can be proved to be at the expense of the higher protoplasm, as it can be measured by the increased elimination of nitrogen. Fatty infiltration and fatty degeneration are characteristic features of acute alcoholic poisoning which when present explain why injuries and bodily illness which do not cause death in abstainers are prone to be so fatal in alcoholic subjects.

Mental Effects.—The mental effects of alcohol differ as to whether they are induced by a small dose, or by one large dose—as occurs in acute drunkenness or acute alcoholic poisoning—or as they are the result of long-continued chronic drinking, even when this is done in what is described as "moderation." The effect of

ordinary convivial drinking, often described as that of moderation, and often manifested in commencing intoxication, is that the ideas flow with unaccustomed facility, the tongue is loosened and the person becomes more loquacious; language becomes more expansive and confiding, cares vanish, everything seems more full of attraction and all the world seems better! There is a sense of *bien-être*—the person is made happier, he is less diffident and more self-assured, his visage is seen to be illumined and his eye is kindled. But this picture soon falls into shadow, for the ideas become dissociated and words become a vertiginous whirl. The various sensations pour their messages into the cerebral cortex, and the highest focusing power of the mind is unable to concentrate them; each makes its separate impression and confusion results which is evidenced in the stupid and silly nonsense of the conversation. The initial flush of intellectual exaltation and excitement referred to has no relation or bearing to genius, it is merely a suspension or an inhibition of the highest psychic faculties which permits the next highest to rise up into prominence.

Alcohol sets free the shackles of restraint characteristic of the higher man, removes the veil from the less highly evolved mental plane so that free play is given to the uncontrolled feelings of the lower man. Alcohol attacks first the hierarchy of the nervous functions, viz., those which are in the front rank, and these are affected in the inverse order of the development, those last formed being, as already stated the first to surrender. There is a loss of precision and judgment and there is a failure in the power of focusing or

concentrating the powers of the mind. The mind loses these characters in the order of their importance, the highest and most important disappearing first. After a time the memory becomes affected and there is a tendency to the development of illusions upon which are based delusions, mainly those of a persecutory nature, such being extremely common in those who drink to excess. Indeed it is not too much to say that where hallucinations or delusions are present in cases of insanity, and when these are of a terrifying, fearful or persecutory nature they supply a reasonable suggestion for an alcoholic origin. One's experience can go further and record the fact that when visual illusions are present, or delusions based upon them, or when the delusions are boastful, vainglorious and grandiose, then alcohol may be directly or indirectly the cause. One of the most frequent symptoms of mental disturbance caused by chronic indulgence in alcohol is a loss of memory; the nouns go before the adjectives and proper names first, so that language becomes poor, primitive, and lacks precision, and such is most marked in persons who have taken to alcohol late in life before they became accustomed to the action of the poison and toleration was established. A change in the disposition from what it was before to querulousness and impatience is also very marked as the result of chronic drinking. There is a tendency to the development of a hostile attitude of mind and to react intolerantly and furiously, the person becoming aggressive, violent, and threatening, indeed in some cases after fury and violence in some cases after alcohol resembles more that of epilepsy than any other disease. The

benevolent emotions suffer especially, and altruism gives way to the most selfish egotism; prudence and moderation disappear and the mind eventually becomes a listless and disorderly chaos, without purpose and without method.

Sensory Effects.—What are the sensory effects of alcohol? Alcohol blurs and dulls the sensibility, giving rise to loss of feeling in the extremities and when common sensation is affected nervous cramp often occurs. In consequence of these, mistaken ideas are aroused and complaints made as to electricity, machines, or the gnawing effects of animals. It is these sensory disturbances which often originate delusions of persecution and violent retaliation on the part of both sexes.

Women are more prone to these disturbances and to anomalies of sensation than men, and the grocer's license is probably responsible for more women being in asylums than ever the publican's license, as drinking in the one case is done openly and to some extent is controlled by public opinion, whilst in the other it is accompanied by deception, stealth, and lying.

Motor Effects.—Alcohol has a peculiar affinity for that part of the brain which is connected with the "muscular sense"—a sense which interprets the equilibrium of the upright position and that of the limbs. Even before the ordinary sensation is affected the "muscular sense" is often attacked. At present not very much is known of the muscular element of thought but the sense of distances is impaired, and alcohol is destructive to this, even in continued small doses.

Mechanics, such as engineers,

watch-makers, instrument-makers, even clerks and those who are dependent for their living upon a highly cultured and educated muscular sense are brought into asylums, and it is among the skilled craftsmen, the best workers, that alcohol plays its worst havoc; and consequent distress is not limited to themselves for it involves those dependent upon them, who are frequently pauperized through their incapacity. It is inevitable that those who drink should suffer from tremors, and these occur in the muscles most used being evident even to the layman in the trembling lips, hands, and voice of those who indulge in alcohol.

General Susceptibility to Alcohol.

—It is a true maxim that "what is one man's meat is another man's poison." Drink in small doses is literally death to some persons, whereas others tolerate it in larger quantities. Those who have suffered from head injuries are especially prone to its ravages, and the brain worker rather than the manual laborer suffers the most, in fact, the stress upon a particular organ often determines the seat of least resistance to alcohol. As already stated, alcohol has a special affinity for the nervous system, although other organs suffer as well, for it frequently causes death through disease of the great glands of the system, e. g., the liver and kidneys. The heart also and the great blood-vessels may be affected, death resulting from apoplexy, cerebral softening, or general arteriosclerosis. The determination of the organ attacked depends much upon the family tendency in the individual, and it is well known that there is for each person a *locus resistencie minoris* which tests the strength of the chain in its weakest link. This is well exemplified

in our own experience when we find one person becoming garrulous and silly under the influence of alcohol, another irritable, aggressive, and noisy, whereas in a third the muscular system becomes mostly affected as is evidenced by the utter inability to stand or move, although the same amount of the same form of alcohol has been partaken of by each.

Further, through the unbridling of the inhibitions, alcohol impels to other forms of indulgence, and many are the cases of rapidly progressive and fatal insanity, termed "general paralysis," which are admitted into asylums, primarily the result of a deficient self-restraint and of a sudden and passionate yielding to temptation. Children and young people are more susceptible than the old, upon whom alcohol in small doses has the least deleterious and the greatest therapeutic effects.

This susceptibility of persons to the effects of alcohol is the "personal equation" of the individual as it has been called, and it is a dominant factor in the incidence to or immunity from other diseases also. One word may be said here about the vexed question of heredity, and whatever view is accepted as to the transmissibility of acquired character, all must be agreed that the delicate material of growth is unavoidably affected by intemperance. The children of drunken parents are themselves feeble apart from the neglect of offspring involved.

The tendency to convulsive forms of mental diseases such as epilepsy, chorea and hysteria, when the father is a drunkard, and to the more degenerate forms characterized by idiocy, imbecility, and dementia, and the criminal type, may be looked upon as established facts.

General Results of Alcohol.—It is difficult to state whether any special form of alcohol produces any particular effect, but there is no doubt in my mind that the deleterious effects may be combined from the category of mixed poisons represented in the different alcohols. Beer drinkers get dull and demented, whereas spirit drinkers are more often cunning and suspicious. Such poisons as absinthe must exercise a harmful influence quite apart from the effects of the alcohol served with it. The cheap spirits, whether called "whiskey" or "Australian brandy," variously manufactured from maize, molasses, rice, or potatoes, or even from the destructive distillation of wood, produce very injurious effects. We know that the quantities of beer drunk by the poorer class cause considerable malnutrition from the fermentation, inducing gastric catarrh. All are acquainted with the wasting dropsy, and lowered vitality brought about by spirit drinking which hardens and destroys the fin mucous membrane of the alimentary tract and the various servicable glands, whose secretions pour through it. In this connection may also be pointed out the tendency there is in drinkers to die from consumption and many drinkers take the infection in the different bar parlors, where expectoration and other dirty habits are seen.

We know the evil effects of alcohol in the subjects of surgical operation, also by the deaths that take place from slight wounds in confined beer drinkers. The statistics of insurance societies all tell the same story of the "bad lives" of drinkers as against the "good lives" of abstainers, which is an irrefutable and overwhelming testimony against alcohol. Of all the evil results of alcohol intemperance the most sad and far reaching is insanity, and the statistics of the asylums of London tell a gruesome story in this connection. Since the opening of Claybury Asylum in 1893, now nearly 13 years ago, the statistics of the first 12 years show that out of the 10,688 persons (4739 males, 5949 females) who have been received into this asylum, no less than 1057 males and 742 females have been admitted through drink, as an exciting or predisposing cause of their insanity, a proportion of 17 per cent of the total, or 22 per cent, of the men and 12 per cent, of the women. During this period a total of 42,694 persons have been admitted into all the asylums of London, of whom 7182 persons, viz., 16 per cent, were definitely ascertained to be through drink.

When we consider the misery and degradation of the individuals themselves and the privation and poverty of those dependent upon them, also the economic aspect of losing the work and usefulness of 7182 persons, mostly men and women in the prime of life, and to feel that there has been the further burden of their maintenance through the rates, upon the more sober and industrious section of the community who are thus compelled to keep these persons—most of them for the rest of their natural lives—this aspect alone of the drink question may well cause us to pause and wonder what we can do to promote temperance.

Remedies.—This paper would not be complete without few remedial hints, although such was not originally intended. The picture is so sad that an effort should be made to reconstruct our social scheme in this particular. We as medical men have now abandoned the maxim of "the

survival of the fittest" for "fitting the man to survive." There is only a certain limited amount of force and therefore of work in the world, but we can raise the potentiality of this by improving the individual as a working unit. If we can produce a favorable environment we can improve the unit and may thus counteract some of the inherited frailties, vices of organization as they are termed, and in this way we can remove some fertile causes of drink.

In all the affairs of life, conduct counts for much and "example is always better than precept." The impressions given to the young by example and by social usages, instruction as to the evil effects of alcohol, the value of clean lives, the care that should be exercised by everyone to keep his life and person clean—the pleasure of open-air living, the importance of fresh air and light, of good food, and how to select and cook it to the best advantage—all these are inestimable auxiliaries in the cause of temperance. Increased facilities for healthy outdoor exercises and recreation, such as bicycling, and the controlling factor of public opinion as to the value of temperance in all things, also assist the cause of temperance. Man is a gregarious animal and the conscious self is greatly influenced by the opinion of others. I have therefore great faith in "communal vigilance" and I believe in the enrolling of postulants in the cause of temperance, which encourages the feeling of brotherhood, and that we are not alone in the cause. This community of purpose and effect helps to raise our cause to a creed and to encourage the enlisting of further recruits. It is for this reason that I believe in temperance clubs, bands of hope, and all such associations where children are

taught to look upon drunkenness as "bad form" and a vice, and to despise it as well as the drunkard; where a healthy public opinion is formed among themselves and where each member is pledged to self-respect and sobriety. To teach the young how to become good citizens, that life has its duties as well as its privileges and rights, is to teach temperance. I also believe in lectures such as are held by our diocesan authorities and by the various agencies united in the temperance cause. Further, I believe in the united action of all these agencies, so that pressure may be brought to bear upon the legislature to raise the health and vigor of the people and to lessen disease and morality through the action of alcohol.

The legislature, usually blind and deaf when no political interests are at stake, but ready to pass academic and non-committee resolutions as to the value of "local option" in some of the colonies, has, nevertheless, by the Inebriates Act of 1898, extended in 1903, emphatically come to our aid by enabling the police court authorities to send to certified reformatories, and by the Secretary of State's order to State reformatories, those characters who disgrace our streets and contaminate our youth. Until this period, these persons, through a long life of debauch, immorality, violence, and crime, gave constant trouble to the police in the streets and to prison authorities when detained, during their innumerable penal sentences; and for them prison discipline in State reformatories for long periods is the only adequate treatment.

Whether cure ever occurs in these reformatories is another matter, but the exhibition of this form of vice in our streets is thus done away with, and we are free to direct our atten-

tion to a more hopeful field, viz., the rising generation, in whose interests and that of morality, we earnestly appeal for a more vigorous control

of the drink traffic and for power to diminish the facilities for obtaining it which glare with specious temptation at nearly every street corner.

REFORMABLE AND IRRIFORMABLE INEBRIATES

The English inspector of inebriate asylums, Dr. Brantthwaite, in a recent report, gives some very interesting facts. Our readers will observe that these statements and comments have a very vital interest to us, and apply to problems that are constantly presented. The following are some quotations from the report, referring to the judicial commitment of inebriates and their economic aspects.

Thus far in its history it would seem as if the Inebriates Act has been mainly used to clear the streets for the protection of law-abiding citizens, for the sake of economy, and to prevent the baneful influence which unrestrained habituals exercise over their young and susceptible associates. We who are in close touch with work under the Act have no objection to the use of our accommodation for these laudable purposes, on the contrary, we distinctly consider that a full acceptance of these principles is essential to success. But we also desire to deal with a larger proportion of improvable cases, persons who have not yet become so bad as to need removal solely for economic reasons. Two reformatories have been specially reserved for really improvable inmates, but, although only capable of holding in the aggregate about 80, some difficulty has been experienced in finding, amongst our 800 inmates, a sufficient number of good cases to

fill them. In short, we want persons who are reformable as well as those who are irreformable, and it is a matter for regret that many persons are not sent until long after the reformable stage has passed.

Let me cite one instance as illustration. A short time ago a woman, known to be a heavy drinker, appeared at a police court charged with drunk and disorderly behaviour. She still retained enough self-respect to appear in court clean and tidy, and there was no history of immorality against her. The magistrates therefore agreed that she was "not bad enough" to be sent to a reformatory, and committed her for a month to prison. It was her seventeenth conviction, five having occurred during the previous 12 months. She had been cautioned twice, paid five fines, been imprisoned three times for one week, three times for two weeks, and the month in question made the fourth for that period. She has again been convicted of drunkenness (at least once), and again imprisoned, but she has not yet been sent to a reformatory: she is therefore presumably still considered not bad enough, not sufficiently hopeless, immoral, or hantastic to be dealt with under the Inebriates Act. When a few more years have passed over her head and her record approaches in length and character to the sample case I publish, she will probably be committed.

But when she is eventually sent to a reformatory she will be one more woman disposed of to clear the streets, and the efforts which will then be made for her reformation will be blamed for their inefficiency. Nearly all the cases hitherto committed, either under Section 1 or 2, might have been sent to reformatories on an average about five years before they were eventually so treated. At the commencement of those five years they were already inebriates qualified for committal, and, at that time, probably capable of reformation. But the subsequent years of neglect, with their oft-repeated sentences, their resulting mental deterioration, organic disease, squalor, and immorality, effectually removed all hope, and now leave us to deal with something that must be detained for the good of others, but which is past the possibility of reformation.

Amongst the thousands of persons convicted of drunkenness each year, and of indictable offences of which drunkenness forms a part, there are many who are still capable of a little self-control, decent when sober, amenable to reason, and reformable. This is the stage when they should be committed, not five years hence. Any man or woman who is known to be an excessive drinker, and who has become so bad as to commit crime, or fall into the hands of the police four times in a year, needs some energetic measure without further delay.

Such a person will never recover of his or her own accord, nor will over-repeated doses of prison do the slightest good; knowing this, it seems little short of refined cruelty to persist in treatment of that nature, year after year. Penal sentences for drunkenness have proved the reverse of curative, and, when an inebriate becomes

used to the week-in-and-week-out of prison, the process ceases to be deterrent. The only excuse for its continuance is custom. Surely after a century of constant trial, with no results but those that are bad, we are more than justified in calling for the adoption of some other procedure. This is not the first attempt I have made to drive home, to those who are responsible for committal, the necessity for earlier attention to these cases. I may reasonably be accused of repetition, but this must be risked in the interests of those for whom I plead. It is sad, beyond measure to be in personal touch, daily, with literally hundreds of persons who have been sent too late, with the certainty that many of them might have been sent in time to cure.

Now as to my second point, the desirability of recommittal, and early recommittal, in the case of persons who relapse, after the completion of a first reformatory sentence. Of the 418 persons committed during last year we find only nine who had previously been subjected to detention in inebriate reformatories. Furthermore, out of the total number of discharges to the end of 1904 (555), only 51 have been sent back to us for a second term of detention. These are small recommittal figures when compared with the number of persons who are known to have relapsed on termination of sentence, and extremely small when any adequate number is added to represent the almost certain failure of many persons, not actually known to have relapsed, but recognized as being too mentally defective to have the least possible chance of remaining sober for long. Probably the chief explanation of the small number of recommitments is to be found in the attitude of some

judicial authorities, who are apt to conclude that a person who has once been subjected to a period of detention, with bad results, is therefore hopeless, and not worth further effort. This is anything but a safe assumption, for I already know of some cases where benefit has followed a second term, after an unsuccessful first. Moreover, I shall hope to show later, even should a case prove to be absolutely irreformable, that reformatory to a reformatory is preferable to reversion to the eternal cycle of street disorder, police court, prison. There is however, a further reason for the few reformatals and for delay in reformatals, which does not affect procedure under Section 1 of the act, but which, I have reason to believe operates with some force against case of reformatals in the case of Section 2. I refer to the necessity for waiting until four fresh offences, and convictions, can be recorded against an ex-convict ere he or she again becomes liable to be dealt with under the Inebriates Act. Many magistrates, police court officials, and missionaries, have met my inquiries by giving this reason for inaction, and have pointed out the desirability of an earlier power of recommitting persons who have been proved to be habitual drunkards, and have already been committed to reformatories for that reason. I think the difficulty is real, and one which undoubtedly militates against early reformatals. It certainly seems a complete waste of expenditure, both in energy and public money, to be compelled to wait until an inebriate has lost all advantage from his previous detention before a further attempt at reformation can be made.

Any person who is an inebriate, and who, in consequence of that state,

commits an offence which is punishable by imprisonment or penal servitude, may be sentenced (at Assizes or Quarter Sessions) to detention in an inebriate reformatory instead of being sentenced in the ordinary way to penal detention in a prison.

This section, by rendering possible the special treatment of a morbid condition which causes crime, approves a most important principle. It recognizes that merely punishing the offender for the commission of his crime is not sufficient, that the offending person is only in a modified degree responsible for his criminal action, and that the force which impelled him to its commission is only partly, if at all, under his control. It acknowledges that the crime is the result of the condition, and that it is practically useless to punish for the crime and leave the condition untouched.

Obviously the mere infliction of punishment for an offence, neglecting altogether the incentive, is false policy, especially when that incentive is, more or less, a constant quantity. The inevitable result of ignoring the cause is to secure a repetition of the crime. A virulent, unabated, cause leads to constant repetition of offence to oft-repeated unavailing punishment, and to the ultimate creation of a well-known type of prison recidivist.

Such a person, when the process is complete, becomes demented past all hope of reform, worse than useless from an economic point of view, and a constant burden upon public funds. Drunkenness predisposes to crime and when an offence is committed through drunkenness, that factor, as an active cause, demands more attention than it has hitherto received.

The suggested substitution of reformatory treatment for prison detention, undoubtedly has a humane pur-

pose, but the utility of the exchange is really urged on scientific and economic grounds, more than on sentimental ones. Experience has made it plain that crime in inebriates means continual crime if the inebriety is left alone; mere punishment proves to be neither deterrent nor curative, and it is evident that some new procedure is absolutely necessary if any successful attempt is to be made to diminish the enormous burden which falls upon public funds from the detention of criminals, and criminal lunatics, whose ill-doing and disease are in direct association with the condition in question.

Although Section 1 of the Act introduces this new element in the treatment of drink-caused crime, the penal and deterrent principles, which are always associated with discipline and deprivation of liberty, are still retained. The mental attitude of persons who are now under detention makes it very clear that a sentence of two or three years (in a reformatory) is considered far more severe than the few months of alternative prison sentence which would otherwise have been imposed. Therefore the substituted power which is given to judges by this Act includes the reformatory principle without detracting from the deterrent. Seeing that the newer method offers nothing but advantage, it is difficult to understand what objection can possibly be raised against its general use.

The restriction of the length of a reformatory sentence to three years as a maximum, might be advanced as an argument against its applicability to the more serious forms of drink-caused crime, were it not for the fact that power is given to the court to inflict in addition, a previous

prison sentence to any extent which may be desired. But, granted that the deterrent effect of a reformatory sentence for the more serious offences is not sufficiently severe, there still remain many of the milder drink-caused crimes (commonly punished by the award of a prison sentence of from 12 to 18 months) which might be dealt with quite adequately by a three years reformatory sentence. This course would increase rather than decrease the deterrent influence, and, at the same time, would afford to the prisoner the additional advantages which are associated with longer detention in a reformatory under special conditions. Many offences against the person, and a few against property, are recognized accomplices to a drunken outbreak.

An excitable inebriate runs amok, and during his attack of frenzy, it is a matter of accident whether the head of his boon companion, or a pane of glass, suffers from his violence. Assaults, malicious wounding, wounding not amounting to felony, and wilful damage, are offences commonly met with as the result of drunkenness.

These are certain to recur when retribution is placed solely upon the deterrent influence of punishment, and so long as no attempt is made to counteract the intemperance. During 1903, 272 persons were prosecuted for felonious wounding, and 945 for wounding not amounting to felony; 856 of the total number being committed for trial at Assizes or Quarter Sessions. It is certain that a very large proportion of these were led into crime through drink, and yet only one was sent to an inebriate reformatory.

Neglect of children, attempted suicide, and larceny, are also very often drink-caused, and are crimes

which render offending persons liable to the application of Section 1 of the Inebriates Act.

It would be extremely interesting, if it were possible, to trace the final result in regard to the large number of drink-caused attempted suicides discharged or handed over to the care of friends.

Our experience, however, teaches us definitely that any habitual drunkard who shows a tendency to suicide during heavy drinking, or during the period of remorse which follows an outbreak, will suffer a recurrence of this tendency whenever circumstances are favorable, and sooner or later will make a successful attempt on his life. I have known many inebriates with such a tendency, and a large number of them have ended their days in this manner. A slight study of the reports of inquests upon drink suicides will clearly demonstrate that many of the victims had previously shown a tendency to suicide when under the influence of drink, or had actually attempted it before the final successful effort. But, the tendency to suicide in habitual drunkards is rarely present except when under the influence of drink. I have seldom found any such inclination during intervals of sobriety, or even during enforced abstinence. On the contrary, there is almost always a feeling of abhorrence at the idea, and there is very often a fear of its possible occurrence during moments of future irresponsibility.

Amongst something like 8000 inebriates, who have been detained in licensed retreats and certified reformatories, up to the present time, only five have attempted suicide during their period of detention.

One of the five was suffering from melancholia and was on the point of

being sent for asylum care, a second was actually in (unrecognized) delirium tremens, a third was found, post-mortem, to be suffering from organic brain disease, a fourth took poison in a fit of remorse and disgust following an attack of drunkenness, and only one case was not accounted for (so far as I know) by brain trouble or by the immediate effects of drink.

From this we may safely infer that suicide in habitual drunkards almost invariably occurs when the inebriate is actually under the influence of liquor, and when such a person is kept forcibly from drink, or is weaned from his excess, that there is little more fear of suicide than amongst any similar number of persons of moderate drinking habits. Consequently, in attempted suicide, we again encounter an offense which, in inebriates, is due solely to drunkenness, an offense which demands rational treatment in the shape of more definite attention to its cause. In dealing with any person charged at court, our efforts must be directed towards preventing reversion to drunkenness, if we desire to prevent a repetition of attempt at suicide. The handing of such a person to the care of friends is too feeble an effort at protection, indeed it is practically a worthless one. Such a course seems too much like shifting the responsibility of protection upon persons who have already proved themselves incapable of keeping the offender from drink otherwise he would hardly have been charged with the offense in question. Besides which, the cases so charged at police courts are mostly drawn from the working classes; few attempt at suicide by persons in better position become known to the police. It is almost impossible to keep an inebriate from drink in an ordinary

middle-class private house with the advantage of spare hands to assist in the responsibility; how much more impossible therefore will it be in a workman's dwelling with few hands to help, and those probably away the greater part of each working day.

Penal treatment cannot be considered a suitable alternative, for detention in prison only increases degradation and results in a further loss of self-respect; it does not in any way modify the virulence of the cause, therefore it is not preventive, and the sentences are too short to be in any sense curative. The only logical course, whenever it can be followed, is committal to reformatory care, and this, I think, should be the one commonly taken.

Most inebriates charged with attempted suicide are otherwise law-abiding citizens; they have not been hardened and degraded by long years of drunkenness, police court, and prison, like those persons who are sent to reformatories under Section 2 of the Act.

The very attempt at suicide is often evidence of some remaining self-respect and due to a realization of the apparent hopelessness of the future. Such persons have desired to do better, but have felt themselves unable any longer to fight a losing battle. Because of this relic of self-respect and desire to do better they are hopeful cases to deal with, and have a fair chance of recovery if properly taken in hand. In visiting reformatories I find the "attempted suicide" and "venality to children" cases are easy to distinguish without actual knowledge of their history; they form a class by themselves, inviting treatment under the best conditions.

In these circumstances it is regrettable that so many cases are inade-

quately dealt with, when, by committal to suitable care, they might be afforded a real opportunity for reformation. So long as it remains impossible for the police court magistrate to send attempted suicides direct to inebriate reformatories, it seems reasonable to hope that he will more often consider the desirability of remand for trial at sessions on an indictment which includes the two necessary counts—attempted suicide and habitual drunkenness. I am convinced that such a course, if freely taken, would materially reduce the yearly number of suicides. Present procedure is doing practically nothing towards that end.

At the time of writing there are nearly 600 inmates under detention; roughly, 800 in certified inebriate reformatories, and the remainder in State reformatories. The latter have been removed thereto on account of refractory or violent behaviour. Amongst this collection of persons we meet many curious and interesting types, and much material is available for scientific study and clinical research. In my last report (see extract, page 95) I made a rough classification of inmates based upon their mental characteristics, which is fully supported by subsequent experience.

In regard to those who were distinctly defective I pointed out the similarity which exists, in general conduct, to ordinary cases of more advanced mental disease found in asylums. I then wrote of the finished article as handed to us for detention and treatment. This year I propose to pay more attention to the influences which tend to the making, and indicate from this standpoint, the necessity which exists for the general adoption of better preventive and curative methods. Every succeeding year's experience tends to confirm the

opinion that the mental defectives amongst our inmates to-day are the backward, feeble-minded, and neurotic children of yesterday, many of whom had their been taken in hand, were so slightly defective at the start as to be capable of improvement, and might have been made decent members of the community. Instead of which they were neglected during youth and when immorality, incapacity for self-control and incapacity for self-support became evident by irregular conduct, they were treated with harshness instead of pity, and closed with prison as remedy. The ultimate result, as we find it is the joint effect of a bad start, bad environment and injudicious subsequent treatment. The management of defective children is a subject which does not directly belong to our province, but with the environment and early treatment of adult offenders we have much to do. Young delinquents should not be subjected to the conservative influence of old inebriate detectives, unless we wish to make them inebriate too, and confirm or increase their defect. When a young defective gives evidence of his condition, by the exhibition of imperfect inhibitory control, he should be placed under proper treatment as soon as it is rendered possible by law, instead of being imprisoned until every vestige of mental stability has disappeared.

*The History Case Reformatory House
man H. H. R. Fournier a Case
Case.*

The woman was born in a northern city in the year 1862, and is therefore 43 at the present time. Her father was a farmer, who was much addicted to drink, and a man of very bad character, especially when under

husband with his five children when the latter were very young. Most of the drink taken by the parents when together, and by the father after he was left alone, was brought into the house, which became a regular resort for neighbors, who gathered together for drinking purposes. There is a history of one of the children having been beaten when very young for refusing to drink from a neighbor's glass, and it is certain that they all saw nothing but drunkenness and quarreling from their infancy. The individual in whom we are at present interested, when quite a girl, went into domestic service at a public-house, where she remained some time. After leaving her situation she returned to her father's house, and then commenced publicly to drink to excess. When at home, at the age of 17, she stole some money and clothing belonging to her father and brother, who prosecuted her, with the result that she was sentenced to two months imprisonment on April 10th, 1880. After her discharge from this sentence she earned her living by prostitution, and became an habitual drunkard in every sense of the term.

Her history during the 23 years, comprises a life story replete with degeneracy, immorality and crime. Starting in 1880 as a girl of 17, she has been in and out of prison or reformatory, until the present time (April, 1902), when, as a woman of 43, she is still in prison completing a sentence of three months imposed in January last.

During the 23 years period over which our record extends she has been before the police courts 219 times.

Therefore, of the last 23 years of her existence, she has spent, in the

what her condition was when she arrived for reformatory treatment. Her previous history we know, and it is sufficient to say that she had already been charged 212 times out of the total above mentioned and had already suffered more than 180 terms of imprisonment. In general appearance she was of stunted growth, and of imperfect physical development. Her face was of low type, bearing plainly the stamp of defective mental power, she had a very low forehead, vacant eyes, and an expression the word "animal" fits describes. Her conduct under detention was, at times, exceedingly bad. She had a fixed delusion that other persons were always talking about her to her disadvantage ("quizzing her"), and she took violent likes and dislikes without apparent cause. This constantly gave rise to trouble and rendered work in association impossible; she was, in fact, kept away from others as much as possible during the greater part of her detention. She was quick tempered, taking offence on the slightest cause, or more often on an imaginary cause, due to her delusion.

One or two accidental glances from another inmate were, at all times, sufficient to start her off. Her temper, whilst it lasted, was passionate in the extreme, and during her outbursts she would lose all control over herself, shake with passion, be very violent, and act generally like a little tigress; quite careless whether she injured herself or others. If she hurt herself she did not seem aware of the fact until she came round, which usually occurred in about half an hour. These furious outbursts were generally followed by penitence and depression. During her period of reformatory detention the woman gained in physical

title. When she obtained her discharge from expiry of sentence, she was still defective mentally, quite unfit for freedom, unfit to control herself, or to fight for an honest living, on equal terms with her normal fellows. Who can wonder then at the sequel, or be surprised that she failed to accomplish what she had no power to undertake—the proper care of herself.

She returned to her old ways immediately after restraint was withdrawn, was again brought before the magistrate, and the old regime was recommenced. She has been committed to prison eight times for drunk and disorderly conduct, three times for willful damage, and once for an assault on police, during the 24 months which have elapsed since she left the reformatory, and she has spent 18 of those months in prison.

This has proved a longer story than I anticipated, but I felt, and still feel, the need of a clear understanding as to what is meant by an "irreformable" case. The practical proof of irreformatibility in this instance, however, is not so strong as I should have wished, for the woman only had the advantage of two years' treatment, instead of the three she might have had, and she has not been recommitted.

But her mental improvement during those two years was so slight that there is little reason to hope that any longer period of detention would have turned her into a reformatory inmate. Her case, therefore, will suit our present purpose.

A few facts about this woman's history are worthy of emphasis.

First, she came of a bad stock, her father gave evidence of lack of mental control which was inherited by her. Secondly, being a woman of weak phys-

opinion that the mental defectives amongst our inmates to-day are the backward, rebellious-minded, and neurotic children of yesterday, many of whom had they been taken in hand, were so slightly defective at the start as to be capable of improvement, and might have been made decent members of the community. Instead of which they were neglected during youth, and when morally incapable for self-control and incapacity for self-support, became evident by irregular conduct, they were treated with harshness instead of pity, and closed with prison as remedy. The ultimate result, as we find it is the joint effect of a bad start, bad environment and injudicious subsequent treatment. The management of defective children is a subject which does not directly belong to our province, but with the environment and early treatment of adult offenders we have much to do. Young defectives should not be subjected to the constant influence of old inmates who infects, unless we wish to make them inebriate too, and confirm or increase their defect. When a young defective gives evidence of his condition, by exhibition of imperfect inhibitory control, he should be placed under proper treatment so soon as it is rendered possible by law, instead of being imprisoned until every vestige of mental stability has disappeared.

The History of an Irreformable Inmate Who Represents a Large Class

The woman was born in a northern city in the year 1862, and is there five 43 at the present time. Her father was a laborer, who was much addicted to drink, and a man of very violent temper, especially when under the influence of drink. Her mother was also a drunkard, who left her

husband with his five children when the father was very young. Most of the drink taken by the parents when together, and by the father after he was left alone, was brought into the house, which became a regular resort for neighbors, who gathered together for drinking purposes. There is a history of one of the children having been beaten when very young for refusing to drink from a neighbor's glass, and it is certain that they all saw nothing but drunkenness and quarreling from their infancy. The individual in whom we are at present interested, when quite a girl, went into domestic service at a public-house, where she remained some time. After leaving her situation she returned to her father's house, and then commenced publicly to drink to excess. When at home, at the age of 17, she stole some money and clothing belonging to her father and brother, who prosecuted her, with the result that she was sentenced to two months imprisonment on April 14th, 1880. After her discharge from this sentence she earned her living by prostitution, and became an habitual drunkard in every sense of the term.

Her history during the 25 years, completes a life story replete with drunkenness, immorality and crime. Starting in 1880 as a girl of 17, she has been in and out of prison or reformatory, until the present time (April, 1906), when, as a woman of 43, she is still in prison completing a sentence of three months imposed in January last.

During the 25 years period over which our record extends she has been before the police courts 219 times.

Therefore, of the last 25 years of her existence, she has spent, in the aggregate, nearly 17 in prison and two in a reformatory. Now let us see

what her condition was when she arrived for reformatory treatment. Her previous history we know, and it is sufficient to say that she had already been charged 212 times out of the total have mentioned and had already suffered more than 180 terms of imprisonment. In general appearance she was of stunted growth, and of imperfect physical development. Her face was of low type, bearing plainly the stamp of defective mental power, she had a very low forehead, vacant eyes, and an expression the word "animal" fitly describes. Her conduct under detention was, at times, exceedingly bad. She had a fixed delusion that other persons were always talking about her to her disadvantage ("gossiping her"), and she took violent fits and dislikes without apparent cause. This conduct gave rise to trouble and rendered work in association impossible; she was, in fact, kept away from others, as much as possible during the greater part of her detention. She was quiet, temperate, taking offence on the slightest cause, or more often on an imaginary cause, due to her delusion.

One or two accidental glances from another inmate were, at all times, sufficient to start her off. Her temper, whilst it lasted, was passionate in the extreme, and during her outbursts she would lose all control over herself, shake with passion, be very violent, and act generally like a little tigress; quite careless whether she injured herself or others. If she hurt herself she did not seem aware of the fact until she came round, which usually occurred in about half an hour. These furious outbursts were generally followed by penitence and depression. During her period of reformatory detention the woman gained in physical condition, but mentally improved but

little. When she obtained her discharge from expiry of sentence, she was still defective mentally, quite unfit for freedom, unfit to control herself, or to fight for an honest living on equal terms with her normal fellows. Who can wonder then at the sequel, or be surprised that she failed to accomplish what she had no power to undertake—the proper care of herself.

She returned to her old ways immediately after restraint was withdrawn, was again brought before the magistrate, and the old regime was recommenced. She has been committed to prison eight times for drunk and disorderly conduct, three times for wilful damage, and once for an assault on police, during the 24 months which have elapsed since she left the reformatory, and she has spent 18 of those months in prison.

This has proved a longer story than I anticipated, but I felt, and still feel, the need of a clear understanding as to what is meant by an "irreformable" case. The practical proof of irreformability in this instance, however, is not so strong as I should have wished, for the woman only had the advantage of two years' treatment, instead of the three she might have had, and she has not been recommitted.

But her mental improvement during those two years was so slight that there is little reason to hope that any longer period of detention would have turned her into a reformatory inmate. Her case, therefore, will suit our present purpose.

A few facts about this woman's history are worthy of emphasis.

First, she came of a bad stock, her father gave evidence of lack of mental control which was inherited by her. Secondly, being a woman of weak re-

stance she was greatly influenced towards the making of her life, by early association with drunkenness in others.

Thirdly, her first prison detention and the constant repetition of prison sentences during the 20 years which followed, completely removed all sense of self-respect, without in the least degree helping towards the removal of the cause of her repeated offences.

Fourthly, whatever her mental condition was in early life, at the time she was committed to a reformatory she was a hopeless permanent defective, one who should be detained continuously in her own interests and in that of the community. Fifthly, although she was not reformed by her reformatory sentence, or greatly improved in mental condition, she was at least kept for two years clean, sober and inoffensive, so far as the public is concerned, at an expense, but little (if any) greater than she cost the country for detention in prison, police court proceedings, and other expensive incident to her previous and subsequent life; and, finally, her sentence to a reformatory for a long period, instead of to many short periods in prison, prevented her (for the term of the sentence) from exercising a baneful influence over her young and susceptible associates, making other drunkards for us to deal with in future in the way that she was made in her early days, by association with others of her kind.

It may be argued that the case I have described is an exceptional one, but this is not so. Quite a third of those who have been sent to reformatories since the work commenced are persons of this type, and possibly are other third but little better. This is not at all surprising when we call to

mind that the majority of police court "habituals," if not originally defective, have been rendered hopelessly irreformable by long years of irrational treatment. Until this first race of old stagers dies out, we recognize, and magistrates must recognize also, so far as actual reformation is concerned, that the material to work upon is about as bad as it can possibly be.

If magistrates can only be persuaded to commit freely, and recommend, for the next five years irrespective of results, the reformatory system will get nearer to proving its utility; but, if judicial authorities hesitate, because the percentage of good results is small, amongst the first few thousand cases, then the work is doomed to failure. All efforts are useless without the co-operation of magistrates, and it rests with them to give, or withhold, the power to demonstrate the possibility of lessening drunkenness, mental defect, lunacy, crime, and domestic misery, by systematic attention to the "habituals" (irreformable or otherwise) who so largely contribute to all these conditions.

A member of the county council to consider this matter said: "These cases are a constant nuisance to us, a constant danger, and a constant expense; they breed their like, and make others follow their bad example. Cautions from the bench are of no value, fines are useless, and prison makes them worse. We must detain them for longer periods, and take care of them for our own advantage, under conditions which may also do them good. If we do no lasting good to the majority of the first draw from the courts, we at least relieve the community of them for three years, a period which may be repeated if the first produces no satisfactory result. We keep them from making fresh

cases for us to deal with in future, and, so long as we have charge of them we know what they cost us, which is not the case at present. Without any curbs the debit and credit side, in my opinion, will balance; if we do happen to cure some of them permanently, well and good, we may call those cases sheer profit. That's how I look at it."

To illustrate the persons I call "irreformables" I have selected a typical case as example, and propose to deal with the better class in a similar manner. The case I have chosen for my present purpose is that of a married woman (C. D.), now about 41 years of age, who was the daughter of a small shopkeeper. There was no definite history of drunkenness in the parents, but the woman confessed that her mother possibly drank "more than was good for her sometimes." An uncle was "silly" during the latter part of his life, and needed "to be taken care of." One brother "died of drink," but a second brother and two sisters are quite sober, respectable people. The woman cannot say when she began to drink to excess, but she "thinks" it was about 1890. Her outbreaks were periodical at first occurring about every three months, but they increased in frequency as time went on; during 1894 she began to drink almost continuously. In 1895 she was locked up for being drunk and disorderly in the street, and was sentenced to one month's imprisonment. This sobered her for a time, and for about a year she kept fairly right with only occasional attacks. Later she drifted into her old state and was again sentenced to a month's imprisonment in 1897. She was better for a short time after that sentence, but not long. With the aid of friends, however, she managed to keep out of

the hands of the police until 1899, when a sentence of two months followed an exceptionally bad charge of disorderly conduct. After release from prison she immediately relapsed and seems to have lost all control over herself; she says she felt, as if the worst had happened and "that nothing worse could possibly happen." She left her home and for the remainder of that year was constantly in trouble, barely out of prison before she was in again. In December of the same year she was sentenced to three years reformatory detention.

When admitted to the reformatory she was in bad health, but before six months had elapsed her physical condition became excellent. She was irritable and somewhat excitable during the early months of her detention, but these symptoms disappeared with her return to good health. Except being easily influenced by her surroundings, good or bad, there remained at the end of the first year no evidence of mental instability. She was of good character during the whole period of detention, worked willingly, and became a general favorite. She was allowed out on license in February, 1902, when she returned to her home and her husband. She has not touched liquor since. She has been seen regularly by friends who take an interest in her, and she was visited by an officer of the reformatory in April of the present year (1905). All reports concerning her behaviour and the condition of her home are excellent.

We have already noted the main features in the history of the first case, the second will be found to show contrast in many important details. Although in the case of C. D. there was a fairly strong history of neurotic heredity, her parents were at least

respectable, and her early associations were good. She did not begin to drink till later in life, and when she did she had the advantage of help from friends to keep her from going too rapidly to the bad. With the exception of two offences, for which she was punished, there is no serious record against her until the beginning of the year 1899, which ended by finding her in a reformatory. That year, however, was a bad one, and had she been dealt with subsequently in the same way as A. B., there is every probability that her fate would have been identical; a few more such years of short sentence prison treatment interspersed with periods of liberty marked by drunkenness and offence, would certainly have added one more person to the irreformable class.

But, luckily for her, she was charged before a seditary magistrate who understood the advantage of striking early and striking hard. After only one year of a regular police court drunken history this woman was sentenced to three years in a reformatory, whereas A. B., after more than 20 years of similar existence, was grudgingly given a two years' sentence. The longer sentence allowed fully two years to be spent under detention and permitted the greater part of a third year being spent on license under modified supervision, a course which materially assisted the final result. If we had been compelled to discharge the woman after a two years' sentence without the intervening license, her chances of recovery would have been minimized!

Stated shortly, the reformability of these persons apparently depends largely upon two mental factors (1) the severity or otherwise of inherited neurosis; and (2), the defect which

is added by long continued prison treatment. If the former condition we cannot alter, the best must be made of the material which comes to hand; the latter can be removed, and should cease to be an influence to be reckoned with. I believe that, although other conditions were to some extent favourable, the main factor in C. B.'s reformability rested in her shorter period of prison treatment, and, other things being equal, I am of opinion that the possibility of return will always bear an inverse ratio to the duration of such treatment.

The financial advantages to be gained by the general adoption of reformatory treatment, and the abandonment of persistent penal methods, in regard to both irreformable and reformable inebriates.

It hardly seems necessary to do more than put into concrete form certain inferences which are obvious from the preceding sections of this chapter. Police court inebriates, by reason of their helpless condition, are a constant charge upon public funds, and, unless prevented, will continue to be so for the rest of their lives. A great deal of money is uselessly spent upon them which cannot be considered as other than utterly thrown away. Those cases which have been hauled up, fined, and imprisoned, for years, now chronic and apparently irreformable, cost us anything up to 20 lbs. or 30 lbs. a year, on the lowest computation, and their name is legion.

Besides being expensive they are an intolerable nuisance and a danger, they reproduce their like, and by their influence and example they are making other drunkards for us to pay for in future. They become delusionally insane, and add to the lunacy bill. They become diseased, prematurely aged, or decrepit, and the burden of

their maintenance falls upon charity or the poor law. They die and are buried by public money. Are those amongst us who are political economists, and who control public expenditure, satisfied to consider this outlay inevitable? Satisfied to pay this money year after year without hope of return, accepting, with scarcely an effort of resistance, the certainty of added expenditure as the result of unrestrained multiplication?

But this is hardly likely to be the case. There are few who are willing to see money spent without adequate return, and I am convinced that the position only needs bringing home, to be fully realised. When an apparently irreformable case requires to be dealt with, let us stop our in-and-out-of-prison process and send it for reformatory treatment; making detention as nearly continuous as the law allows, by sending again and again, if such a course prove necessary. If the maintenance expense in a reformatory be more than the case would cost if left at liberty, it will be but little more, and will at any rate give the inmate an opportunity of recovery, and afford us some return for our money, a chance of future relief which we should not otherwise have. During the period of detention we should prevent reproduction of the species in more ways than one, and we should save the community from danger and

annoyance, for the term of each sentence. By preventing the inebriate from committing crime we should lessen it generally, and by enforcing sobriety in these cases we diminish their tendency to acute insanity. It seems a course which, at any rate, is worthy of fair and continued trial, and a fair trial is all we ask.

With regard to the economy of committing reformable persons to institution care, at the very start of their career, there can be no possible doubt. The reformable case I describe is a good example of the value of such a course. The first bad and expensive year (1899) was the evident start of many to follow. The woman would certainly have become a permanent charge had not her reformatory sentence cut the story short. As it is, money may be said to have been already saved in this case. The total freedom from expense on this woman's account, during three years of respectability and liberty, enables us to spread over a period of five years the 70 lbs. spent upon her in the reformatory. The average expenditure for the five years is therefore about 15 lbs. a year, which is not more than half the amount that would have been incurred had the system of short prison sentences been persisted in. And, in addition, a wastrel has been turned into a wage-earning and self-respecting woman.

A MORPHIAMIAC ON TRIAL FOR MURDER

By T. D. Crothers, M. D., Hartford, Conn

Dr. J. B. Matthews of Greensboro, N. C., was indicted for the murder of his wife, and tried for the crime in that city February, 1906. On the

morning of December 1st, 1905, his wife was found in an extreme stage of morphine poisoning, three physicians were called and a great variety

of means were used to resuscitate her, without effect, she died in about eight hours after the physicians were called. The prisoner was in the room at the time and was under the influence of morphine, and acted in a childish, confused manner, he wished the physicians and nurses to leave the room, claiming that he wished to pray with his wife. Failing in this, he was detected secretly injecting by a hypodermic syringe some solution into the arm of his wife. It was forcibly taken from him and he made no explanation. In the course of an hour after this event his wife was seized with convulsions and died. The doctors assumed that this solution was strychnine, subsequent examination proved it to be morphia, as a large quantity of it remained undissolved in the barrel of the syringe. His foolish conduct and efforts to bribe the physicians to report the case as one of heart disease and his obstreperous conduct in all efforts made to restore her, suggested murder and design on his part. On the trial it was claimed that the morphia was given by the prisoner, and that his attempt to make the case fatal by adding other poisons secretly was evidence of his sanity. The prosecution insisted that the convulsions preceding her death were due to strychnine, and although the contents of the syringe which was retained did not show it clearly, the analysis was not exhaustive enough. The defence proved that the prisoner came from a neurotic family, in which several members were insane drinking and paranoiac, and that early in life he was nervous, excitable and tried to commit suicide by taking morphia on the death of a girl he was engaged to be married to. He was restored with great difficulty and his conduct from this time on, was

erratic and changeable. Going from one occupation to another he finally became a druggist, then graduated as a physician. He used spirits at intervals to excess, and finally became a morphia taker. He was an energetic physician, made friends, but drank and took morphia to such an extent that he had to change his location for practice. His wife became a morphia taker after marriage, and they seemed to be very amicable in their relations, a little boy of six-years old increased the happiness of their home life. The prisoner asserted that the night before the death of his wife, she had taken a large dose of strychnine with a suicidal intent, and that he had given her morphia at short intervals as an antidote and this accounted for the condition of narcotic poison found in the morning when the physicians were they claim he still possessed sufficient by expert witnesses, that the prisoner was insane, that his use of spirit and drugs following a neurotic inheritance and predisposition developed into a morphiomania and dementia, and that he was irresponsible and could not plan or realize the nature of his crime. The prosecution declared that there was a motive in the crime, and his secret attempt to administer a drug was evidence of this. While acknowledging his use of morphia, they claim he still possessed sufficient reasoning to understand the nature and consequences of his act, and that the contents of the syringe were both strychnine and morphia put in recklessly and water poured on it, and injected before it was dissolved, also that her death was directly due to the strychnine injected. The usual hypothetical questions pro and con, were answered and described by the various experts, and the jury decided the prisoner guilty of murder in the

second degree. He was sentenced to twenty years to prison and bailed out, pending an appeal, and sent to a sanitarium for treatment. Six months after he left the sanitarium he committed suicide in a low boarding house. Some of the conclusions of special medical interest are as follows: The prisoner was from inheritance a neuropath and psychopath. His early erratic conduct and use of spirits and attempted suicide showed unsoundness and instability. Later morphia was used alternately with spirits. And the latter was taken to great excess. Mental changes were noticed in his untruthfulness, want of pride and *pein* efforts to take advantage. He smoked cigarettes excessively and was considered insane and reckless by his patrons. The comatose state of his wife, which he explained as due to her

attempt at suicide, was not unusual, she having been stupid from morphia before, his secretive act to increase her stupor was insane under the circumstances. It was one of the confused, impulsive acts indicating an unreasoning brain. His whole life was a continuous history of a psychopath becoming a morphiomaniac, and dying by his own hands. The prosecution committed the same blunder seen in other parts of the country in attempting to determine the sanity and responsibility of a person whose history and conduct was that of a maniac. The trial and verdict was a medico-legal farrer to determine degrees of responsibility in a morphiomaniac whose conduct was so obviously unsound and irresponsible as to be above all question. Such a case should have been tried by a lunacy commission and consigned to an insane asylum.

EDITORIAL

Announcement

THE JOURNAL OF INEBRIETY begins its new decade after thirty years of accumulated studies of the disease of inebriety and its curability, by entering upon a new field of physiological and psychological therapeutics in the treatment of these neuroses. Arrangements have been completed by which *The Archives of Physiological Therapy* will be published as a part of THE JOURNAL OF INEBRIETY. This month-ly with a large circulation and ably edited by Dr. Skinner of New Haven and a number of most eminent collaborators has been practically working long parallel lines with THE JOURNAL OF INEBRIETY.

In the opinion of its managers its scientific value could be made more

practical by concentrating its work in some special direction. The disease of inebriety, and its allied neurosis is a new field of the greatest practical interest hence THE JOURNAL OF INEBRIETY has been selected as the medium for continuing the work of *The Archives of Physiological Therapy*. Every student will recognize that the scientific treatment of inebriety must be pursued along these lines and that the various means and measures included in this term of physiological therapy are most practical methods of cure and prevention. In this number we present some general preliminary articles giving outlines of the subjects which will be taken up in the future. Both theory and experience indicate the great possibilities of cure in the

therapeutic effects of hot air, radiant light paths, electricity, massage, vibration and psychical measures, and intense interest to see them put to the test of practical use. The disease of inebriety and its curability is now recognized, but the scientific use of rational physiological measures is yet to be studied. The *JOURNAL* enters upon this new field with the purpose of not only clearing up the confusion of drug and specific treatment, but to point out broader fields for the application of scientific measures for the cure and prevention.

Inebriety and Insanity

Dr. Sullivan in his admirable book on Alcoholism makes the following reference to its relation to insanity: In a certain number of cases where the drinker's nervous system was relatively normal, insanity is directly due to alcohol. On the other hand it also happens, and possibly with greater frequency, that instead of being the cause of mental disease, inebriety is its consequence. An individual for example, in the early stage of insanity, or predisposed to disease by inherent weakness of mind, is notoriously apt to show his debility by a tendency to convivial excess, especially if he lives in a *milieu* where such excess is common. This is very often seen in general paralysis, and in other mental disorders; and in one such affection, indeed, which is more often talked of than seen, viz., the so-called dipsomania, the periodic development of an irresistible impulse to excessive drinking may be the only obvious symptom of a psychical degeneracy allied to epilepsy.

Of course, in all cases of this sort the alcoholic poisoning is likely to aggravate the morbid state; and where the original debility of mind is rela-

tively slight, the intoxication may be an important force in insanity. But, though we may thus in a sense speak of alcohol in such circumstances being a cause of this insanity, it is very clear that it is so in a quite different and from a social point of view, in a much less important manner than when it acts as the sole agent in bringing about mental decay in the healthy. It is even conceivable that in some instances its influence in hastening the breaking down of unstable and defective organizations may be of real advantage to the community. It is true, also, no doubt, that many of the degenerates of this type are themselves heredito-alcoholics, and owe their inferiority of brain organically to the parental intoxication, so that ultimately their insanity, too, may be set down to the account of alcoholism.

It is evident, therefore, from the foregoing considerations, that if we are to arrive at a correct estimate of the amount of the alcoholic contribution of mental disease, we must be able to separate these different modes of relation which may connect intemperance and insanity. On this account statistics which show nothing but the co-existence of the two conditions, or which attribute a causal influence to alcoholism on no better grounds than a history of drunkenness prior to the recognition of lunacy, are of small value. And, unfortunately, much of the available information on the matter is open to this objection.

It is a point of first importance to recognize that the direction, duration and general influence which alcohol exerts on the several functions of the body differ enormously in different persons. While the experimental evidence already accumulated formulates some general views of the susceptibility of alcohol and its influence, there

must be recognized a wide degree of individual variation; hence dogmatic statements of positive results noted in persons will not be sustained, although in a large number of instances they occur. Thus in one instance a person will show continuous exhilaration and buoyancy from the effects of spirits, in another, a short period of excitement, of an exaggerated type of exhilaration, is followed by depression and mental stupidity, while both have taken the same amount of spirits under similar circumstances, the difference is in the body itself. The susceptibility or immunity to its action would explain this.

There are other psycho-physical conditions and personal equations that act as disturbing factors so that it cannot be expected that the physiological action of alcohol would be the same, only in the general way, and this is confirmed by clinical experience and laboratory research.

Opium Prohibition in China

Many years ago the emperor of China issued an edict punishing by death all persons who continued to smoke opium after a certain time. The opium war with England coming on later made it impossible to carry out this law. Now that England has agreed not to force the sale of opium on the country, the emperor has forbidden the cultivation of the poppy altogether, and after ten years its use must be totally abolished. It is calculated that forty per cent. of the people of China use opium, and hence forth every one is registered and the amount that he uses daily. Anyone who begins the use of opium will not be permitted to register, and will be punished as a criminal. Smokers of over sixty years of age will be regarded with great latitude and favor, but

persons under sixty years of age must decrease the amount of opium used twenty per cent. per annum. After ten years those addicted to the drug will have their names publicly posted, and will not be allowed to take any position or enjoy the freedom of healthy persons. In the case of officials the drug must be abandoned at once, or within a recent time and never taken up again, exceptions, however, are made to princes, dukes and viceroys who are over sixty, as long as they carry on their duties correctly, they will be permitted to smoke opium, but the amount must be less and less. Arrangements are to be made to distribute prescriptions and medicines, calculated to counteract the effect of the drug, and efforts will be made to assist anyone who finds it difficult to give it up. The decree sets forth that the government is determined to forever prohibit the use of opium, and the subjects are given fair warning, that there will be no change or variation from this rule and that anyone from this time forward who begins the use of opium, will do so at his peril, and will incur the severest penalties. The result of this effort will be regarded with the greatest of interest.

The Study of Inebriety in England

In 1879 Parliament passed an Inebriate Act, providing for the organization and licensing of institutions for the control and care of inebriates and the appointing of a government inspector to take charge and regulate the organization, care and treatment of such persons. Dr. R. W. Branthwaite, for many years the superintendent of the Dalrymple Home for Inebriates, was made inspector. From that time yearly reports have been issued of the work and its progress. Beginning with four institutions, the

number has now reached 21, 11 of them are government or city institutions, supported and controlled by the town and authorities where they exist and receiving by commitment from the courts or by private legal measures. There were 1873 patients received during the year in these institutions. There were nine private institutions licensed by the state and dependent on the incomes from the patients, which received 418 patients during the last year, thus for 1905 there were 2291 patients treated in regularly organized institutions. The inspector's report for this year is a most suggestive volume of statistics and facts concerning this work. The condition of the institutions, their management, the history and condition of the patient, the treatment given them and the results, the statistics of the cost and financial operations of the institutions are all detailed. The close connection between insanity and inebriety and the influence of heredity is brought out from unmistakable data, together with many other facts of great practical interest.

The plan of having all institutions treating inebriates licensed and placed under government control and inspection is an immense advance over our present loose methods of permitting any one to open institutions and treat inebriates by any ways and means possible. No one can open an institution for the promotion of secret cures and every manager and physician has a degree of responsibility to conduct and treat such patients by scientific and reasonable methods. Every state in the Union should insist that every home or asylum for the treatment of inebriates should be on the same plane as that of insanity, and should come under government supervision. If

this was done the whole subject would be lifted out of its present confused condition and assume a reality of the most practical character. We should then know from authoritative data facts that are now vague and unsupported. We shall quote freely from the inspector's report, for it outlines work that should be done in this country.

* * * * *

It is a curious fact that when an institution for the care of inebriates is badly managed and runs behind financially, it is pronounced a failure and forthwith the authority advise that it be changed. The principle is said to be wrong and the institution a blunder. It never occurs that the causes rest entirely in the management. The patients are misunderstood and are treated according to theories which do not apply and cannot be made practical. The inebriate is a most difficult patient to control and treat rationally. He is both sane and insane, his training and experience have given him great sharpness in some directions as well as stupidity in others. He is a maniac and a dement, he has delusions and hallucinations all mixed up in a most complex way and the attempts to treat him by rules and formulas which have proved valuable in an insane asylum or prison are failures. He is not exactly at home in a sanatorium, except in the very early stages, and it is exceedingly difficult to find any place where the treatment can be carried out that is adapted to his peculiar condition. He needs special treatment and special study in special surroundings by a broad minded management that is capable of adapting means and measures required for the time and occasion. The asylum at Binghamton was declared a failure simply because its managers and superintendents were incapable and did not

understand the work. Every other institution that has suspended or changed has done so for precisely the same reasons. The patients were unknown and the means necessary to restore them were not understood. Prison, workhouses, hospitals, insane asylums and other methods and means which have been found valuable in other patients have proved incompetent for the inebriate. Quack cures and specific drugs with chemical restraint fail and still the struggle goes on. What is needed today is management by skilled men who understand the inebriate and his malady and know how to adapt means and measures for his restoration. Dr. Brockway at Elmira proved beyond question that youthful criminals could be restored and made useful citizens, not by the institution, but by his genius and capacity to adapt means fitted for their maladies. Reformatories before his day were failures to a large degree, but now conducted on broad principles, they are curative in the highest sense. Inebriate hospitals are looking for some genius of a manager who will bring out the facts and show their practical adaptability and thus turn all these efforts into successful curative and restorative agents for the inebriate. It is the failures of the present inebriate asylums that should stimulate renewed efforts to comprehend the subject and its wants.

Malaria and Alcohol

A recent writer has been studying the diagnosis of persons said to suffer from malaria. He concludes that Dr. Osler's statement is confirmed, that no malaria is ever seen north of Mason and Dixon's line, unless it was imported. Also that the cases of so-called malaria are simply toxic

poisonings not due to the germ of malaria. Another author believes that a large percentage of so-called malarious cases are due to the moderate and excessive use of beer and spirits. Persons using spirits and eating heartily, are always poisoned by fermented toxins, accumulated in the intestinal track, and circulating through the blood. These poisons may manifest themselves in chills and fevers, coming on with regularity resembling malaria. Large doses of quinine fail to neutralize and check paroxysms. Depressive states of the nervous system with derangement of the liver and general constitutional disturbances are all marked symptoms. It is the common observation in hospitals where inebriates are treated to more periodical chills and fevers and other marked symptoms of malaria, and the accepted explanation is that they are due to some malarious germ dating from former infections. Quinine seems to have little effect, but salines and baths are almost specific remedies. These conclusions are certainly very significant, and along the lines of other observations, and we hope our readers will make studies in this direction to throw farther light on this most interesting subject.

Spirit Drinking and Alcohol

The U. S. Commissioner of Labor sent out 7,000 circulars to firms employing large numbers of men, asking the question, how far would the fact of drinking bar a man from obtaining employment in their business, and was total abstinence, an absolute qualification for employment? There were 6,976, of these, 5,363

answered that no one would be employed who was known to be drinking, and everyone found using spirits was discharged. The general reason given by all these were the unprofitability, and the losses, which invariably followed from men known to be drinking. The remaining 1,613 answered that excessive drinkers were promptly discharged, but that moderate drinking was not considered a bar to the employment of men, but that such persons, were regarded as less reliable in most instances. Many of them added that drinking persons were not employed in responsible situations or places requiring great judgment, and accuracy of thought. These facts are significant, and show that the working man has no chance to rise in the world if he uses spirits.

If the labor unions would better their situation, and unite for more continued prosperity they would recognize that long hours and low wages, and other wrongs are the results of the saloons, and the rum sellers, and not, of the manufacturers. All employers of labor find it to retain interest to pay high wages, and retain good men, keeping them constantly employed, but the beer drinkers, and the agitators, and the men who spend their money in saloons are uncertain, dangerous help.

If the workmen would combine against rum sellers, beer shops, saloons, there would be no anarchists, strikers, agitators or demagogues, and there would be no Sunday concerts and spies, and wild scenes of dissipation. Employers of workmen have no confidence in patrons of the saloon, hence they seek to get all they can out of them, knowing that they are likely any time to strike, and leave their work. If workmen were sober and

temperate there would be no need of labor unions, each man would take care of his own interests.

A great revolution must take place, in this direction, before this interest is settled.

The Poster Movement

A few years ago the authorities of Paris printed and posted on all the bill-boards of the city and surrounding country, a series of startling announcements, concerning the danger of alcohol. A year later another immense poster, gave the views of a dozen or more physicians, on the dangers of alcohol, and this poster was headed "The Verdict of Science."

The most startling statements were made, and appeals to the people to shun alcohol as the most dangerous poison, whether in the form of wine, beer or cider. It was the opinion of thoughtful men that this Poster crusade was a very practical and effective movement.

Last year the city of Nottingham in England, kept the bill boards of the town covered for three or more months with similar great startling posters of the danger of alcohol and alcoholic drinking.

Of course, the brewers complained, and the question arose, whether this method was within the range of sanitary work? The authorities of Paris decided that it was, and that the abuse of alcohol was a matter of public menace which requires extraordinary efforts to educate the people. The authorities of Nottingham took the same ground, and one of their posters read as follows: "The physical deterioration from alcohol," then followed a series of statements of the deadly character of alcohol, and the special liability to tuberculosis,

and all inflammatory disorders. Other cities of England, have been urged to officially engage in this work. This is probably one of the movements that will attract much attention in the future. It is seriously questioned already, whether startling posters kept on the bill boards of large cities would show any practical decrease in the number of spirit drinkers, also whether it might not startle many men to abstinence?

Duration of Intoxication

The duration of Inebriates has come into question again. An unknown writer has given a study of a number of persons whom he claims to have used spirits to excess for a period from 20 to 40 years. The conclusion he urges is, that spirits have very little influence on the duration of life.

Such statements would hardly require notice, they are so opposed by all studies and observations, but the author makes a statement that "Many of these persons, were intoxicated daily and weekly, for these long, long periods" and cites Dr. Dana of New York, as having said that "one thousand intoxications is the limit of duration and yet persons may go farther."

These statements seem to be so extravagant, that we have no hesitation in challenging their accuracy. Some years ago when these statements appeared, I made some inquiries in some of the large hospitals, and could find no records that would indicate the possibility of anyone having been intoxicated more than one hundred times. Since then I have boldly denied the statements and challenged proof.

The term "intoxication" is used to represent a state of delirium and coma, of from one to several hours duration. This is literally, a shock to the brain and suspension of the vital forces, and it is absolutely impossible for recovery to take place sufficiently to tolerate the recurrence of such attacks in any great numbers.

An imbecile or idiot whose brain is already paralyzed might have frequent attacks of this kind, but there is a limit to endurance in this. In police courts where persons are repeatedly arrested for intoxication, there is a certain limit rarely exceeding one hundred attacks; usually, long before this the patient becomes insane or dies. The statement that the man was drunk, every week of his life, is not true. He may have shown the effects of alcohol in his talk and manner, but to be intoxicated is a most serious condition, from which recovery is slow, and the injury is continuous.

The periodic drinker may at long intervals be intoxicated, but there is a certain restoration in the free intervals. This may go on for years, but the number of intoxications will be found limited.

The continuous drinker in exceptional cases may use spirits 20 years or more, but long before this period, he is degenerate, and broken down, and careful inquiry will show that profound intoxication has been the exception and not the rule.

The brain and nervous system cannot bear the shocks of many intoxications. And this fact is not realized, and the loose statements concerning it need revising and restudying in many ways.

PHYSIOLOGICAL THERAPY

In entering upon this new department of special study of physiological means and methods for the treatment, prevention and control of spirit and drug neurosis, we are taking a very advanced step, sustained by all recent researches. The present confusional state of the therapeutic of spirit and drug diseases, and the empirical pretensions and claims of specious, call for some exact scientific study along physiological lines. This department will take up the special subjects of electro-therapy, mechano-therapy, hydro-therapy, dieto-therapy, arcadio-therapy, psycho-therapy and other physiological means and measures for the cure and prevention of insanity. We shall in this way furnish and group a variety of facts and experiences that will afford the most substantial and practical help to both institutions and persons who are studying insanity and its means of cure.

The Physiological Action of Hot Air on the Body

The physiological action of hot air is predominantly reflex through the spinal sympathetic, the area of skin treated being so great that the capillary circulation is able to dissipate the heat before it penetrates deeply enough to exert its action directly to any great extent, herein differing from the local application.

Microscopic and chemical examinations made in connection with patients under treatment by the writer have demonstrated that the following phenomena are susceptible of immediate induction by the body hot-air

1. The number of the blood corpuscles is increased in dif-

ferent cases from fifteen to fifty per cent. Second, the red blood cells are increased from ten to twenty per cent. Third, the quantity of urine passed in the twenty-four hours succeeding the treatment is usually increased from twenty-five to one hundred per cent. over that passed in the twenty-four hours preceding. In a few instances, however, a decrease in the quantity has been observed.

Fourth, the quantity of urea excreted in the twenty-four hours succeeding the treatment is increased from fifteen to sixty per cent. over that excreted in the twenty-four hours previous.

These effects persist with decreasing intensity, for from four to forty-eight hours and sometimes longer, the heat varying in different diseases and with different patients. It will be observed from the above that the beneficial effect of body hot-air is not entirely due to the induction of hyperthermia and superficial hyperemia, as is frequently stated, but that its influence involves phenomena of much greater profundity than would be explicable upon such an hypothesis. When we consider the large number of pathological conditions in which the reconstructive functions are deficient, the modifications in the composition of the blood noted above assume an interesting significance; and when we think of the number and variety of diseases which are dependent wholly or in part upon the retention in the system of products of suboxidation the sphere of action of the body hot air treatment, as indicated by its effect upon oxidation and the excretory function, becomes extended within

The general phenomena induced by

the body application are as follows: The mouth temperature rises from one to five degrees Fahrenheit, according to the length and intensity of the application, and the susceptibility to stimulation of the individual patient's deep nerve centers. The pulse is accelerated from thirty to fifty beats per minute, and is markedly increased in volume. If it was weak before treatment it now becomes strong.

If the application is continued too long it loses its volume and strength, becoming rapid, small, and soft, but sometimes retains its volume, becoming very soft and slow. Under these conditions the patient becomes dizzy, faint and nauseated. The respiration deepens and the rate increases five to ten cycles per minute, but it is not accompanied by any oppression—rather the reverse, in fact.

The capillary areas become injected, but this phenomenon is not as marked in the regions actually in contact with the heat as with the local treatment. The fact that the capillaries of the face which is never subjected to the heat, share this general disention even when constantly under the influence of the breeze from an electric fan, demonstrates the profundity of the reflex obtained.

The patient reeks with perspiration; the acidity of which is markedly increased over that normally exhibited. The sensation is not disagreeable to the patients, but quite the reverse usually.

A pleasant languor ensues after about ten minutes, and lasts for an hour or two, and the patient usually becomes drowsy and sleeps.

If the treatment is continued too long the languor gives place to exhaustion, with cardiac palpitation and oppressed breathing, which some-

PHYSIOLOGICAL THERAPY

times persists for hours.

By this profound stimulation of the deep trophic centers we secure a more rapid and complete oxidation of effete materials which are clogging metabolic processes, into normal excretory products,—urea for the kidneys, CO₂ for the lungs, etc.—which are then easily disposed of by the appropriate organs, and a rapid production of more vigorous and healthier cell elements which are much better able than their predecessors to resist toxemia and microbe invasion. We not only obtain a corrective influence in nutritional disorders whose origin is in the deep sympathetic, but if the patient is suffering from an infectious invasion we increase vastly the resisting power of his phagocytes and tissue elements. The profuse perspiration carries out with it also a certain amount of promanics and thus assists in relieving the depression of nerve centers due to systemic toxemia. The functional activity of every organ and tissue in the body is immediately augmented, but this exaltation of function is not followed by a reactionary debility. Patients frequently continue to improve generally for months after a course of body hot-air treatments.

It will be seen that the physiological action of hot air is in line with that of hydrotherapy, electricity, the Turkish bath, and massage, but under some conditions is much more profound than any of them. It is, however, usually advantageous and, as will be seen later, sometimes necessary to combine electrical modalities with hot air in order to accomplish certain results.

Neither alone will do the work of both together. Massage in the same way is sometimes useful, but very rarely necessary.

Dr. C. E. SKINNER.

Electrotherapy

Dr. A. D. Rockwell of New York, one of the most distinguished and pioneer students of electricity and medicine, makes the following strong plea for conservatism and scientific study of electricity and its doses in the treatment of nervous diseases. The following extract taken from the New York Medical Journal is suggestive and worthy of study.

"Electricity in its several forms, says the writer, is undoubtedly here as a permanent addition to our methods of treatment. It has been compelled to push its way through much indifference, sometimes actual opposition, and it behoves those who are directly interested in an agent which has already served us well, not to hinder its progress by claiming for it more than it is capable of giving."

In surveying the current literature of electro-therapeutics, one cannot but be impressed with a certain lack of judicial fairness that prevails. This want of judicial candor works in a two-fold way, very much according to the temperament and environment of the individual. On the other hand, the enthusiast becomes an altogether illogical pessimist and denies the efficacy of the agent which he has crudely tested. On the other, enthusiasm develops in the opposite direction, and over-confidence and overstatement characterize every public utterance or written report. The one encouraging feature in the development of electrotherapy is, that the more we know about physical methods, the more are we inclined to exercise rational judgment in testing them.

At the present day there are few so rash as to claim that much can be done through electricity for grave organic and structural changes, al-

though occasionally we find some over-ardent disciples exploiting the use of electricity and other physical methods in the anaxies, etc. In such cases it is charitable to ascribe these statements of cures, in the majority of instances to misconception, to a faulty diagnostic sense rather than to willful misrepresentation. It is so easy, if one's experience is limited to mistake a functional condition for one that is structural, especially when the milder strongly stimulates the graver disease, as is so often the case.

It is no very difficult matter to decide in any given case whether electricity is indicated or contraindicated, and if indicated what manifestation is most likely to yield results. To indicate the measure of benefit to be expected is quite another matter.

Rhinosinuses vary, and it is difficult to accurately gauge the extent or severity of existent pathological conditions. Fortunately, there are comparatively few contraindications for the use of electricity in chronic conditions of disease. With a good working knowledge of physics and a skilled technique, if it does no good, it need do no harm, but lacking these essentials, it is more than likely that acutely painful and hyperæsthetic conditions will become aggravated with more or less permanent injury, as a possible result. For let it not be forgotten that this agent is double-edged and cuts both ways. It may act as a stimulant or an ugly irritant, or in many a hyperæsthetic condition of the nervous system, as a prompt and un-equated sedative.

It is simply a question of technique and differentiation in the choice of modalities. If one is to be master of an efficient technique, without which the use of electricity in medicine will result in a fruitless quest, he must be

familiar both with its physics and physiology. Above all, he must study Ohm's law, a law competent to explain all the phenomena with which it has to do, and which if clearly and generally understood, would do much to stem the unfortunate and increasing disregard of that most important manifestation of the continuous current, commonly termed the galvanic.

Reverting to the fundamental idea of the nutritional effects of electricity upon which in great measure must be based its utility in medicine, Dr. Rockwell emphasizes the fact that its greatest value lies in its general, rather than in its local administration. Where one local pathological condition is benefited by a purely local application, many constitutional conditions with their varied localized symptoms, are benefited by general applications. Both analogy and experience teach that the full nutritional effects of electricity can be obtained only as it affects either directly or reflexly the whole central and peripheral nervous system, including the entire muscular and circulatory system under their control. It acts, therefore, not merely as a stimulant or a sedative. If this were so the cause of electrotherapeutics would have little vitality. Its well-attested action is nutritive and constitutional as well as local. As Niemeyer recognized long ago, referring, however, only to the constant current, "we have in it a means more powerful than any other in modifying the nutritive conditions of parts that are deeply seated." Whatever the modality employed, in varying degree, the disposition and capacity for both mental and physical effort is undoubtedly increased by these general applications. There are indeed very much, as do

other tonic remedies, whether medicinal or hygienic. In selected cases there follows improvement in sleep, a more vigorous digestion with increased power of assimilation. The rationale of these results depends undoubtedly upon the power of electricity to modify physiological function, either by an increase, a diminution, or some modification of quality. To no one method of general application alone can be ascribed the power to produce these results.

With the requisite equipment we have at our command high frequency currents with the methods of autocondensation and autocondensation, static electricity with its various methods of application, the galvanic current with its central and generalized methods, and last, but not least, the older and well-attested, but now neglected method of general faradization. While fully recognizing and carefully testing every new process in the evolution of electrotherapeutics, there are two strong and sufficient reasons why the author urges a recrudescence of general faradization.

1. Because in a long and varied experience he has found that general faradization has an individual merit, at least equal to any other of the general methods and not infrequently a merit and an effect all its own. To do the best work, one should be well equipped, and he who has abandoned general faradization or who knows not its technique is by so much the poorer in the therapeutical possibilities of the agent employed.

2. Admitting the value of general faradization another argument for its study and more general use is the slight expense even of the very best apparatus. It certainly requires more skill to administer a satisfactory application of general faradization than that required by most of the other

methods, and to this, conjoined to the partial disrobing of the patient, and the time and labor required of the physician, is to be ascribed, in part at least, this neglect of a most important part of our art.

The question of dosage is an important one, and especially so in its relation to the galvanic current, first because of its chemical or electrolytic power and its profound influence upon the central nervous system, and again because it is the only manifestation of electricity that is both physiologically exact and the slightest variation of which can be measured with absolute accuracy and satisfaction. In the use of the galvanic current for the relief of deep seated neuritis, as in scatica, for the pain due to parenchymatous degeneration and internal cancer, and especially for the relief of that ordinarily intractable disease, exophthalmic goitre, we must have massive doses. On the theory of hyperthyroidization as the causative factor in this condition, surgery steps in to limit this excess of secretion by partial resection of the gland, or the ligation of the nutrient arteries, while medicine attempts a neutralization of the toxins by an antitoxine. Much as has been accomplished by surgery in certain cases, and valuable as may be the antitoxine treatment, the writer is constrained to say from a very large experience in the treatment of Basedow's disease, that with the galvanic current the results are quite as good, if not better, than those offered by surgery or antitoxine. Its disadvantage is that it is slow in its action, although there are some notable exceptions.

But the dose must be massive. There is no use for suggestion here. The idea that two or three milliamperes can be of any real essential ser-

vice is based upon faulty observation, inadequate experience, and an imperfect appreciation of the physics of electricity. The question arises, "What constitutes a massive dose?"

The writer answers, barring its surgical uses where an anesthetic is demanded, that a massive dose of the galvanic current is where it is carried up to, but not beyond, the point of endurance, but without injury to the skin. An analogous condition confronts us in the use of the X-Ray when deep penetration is desired without injury to the skin. This is best accomplished as is now agreed by using tubes of high capacity and great penetrating power, rather than tubes of low capacity, where the effect is expended upon the skin. The size and quality of the electrode combined with current strength determining the penetration and localization of the current, as the vacuum of the tube and the force actuating it determine the efficiency of the rays.

Bearing in mind the law that the greater the area the less the resistance, it follows that in order to get the best effects in deep seated pathological conditions the area covered by the electrodes should be as great as the nature of the parts permits. The nature of the electrode is also of importance, and in sculptor's clay of the proper consistence we have an ideal electrode for the purpose of giving the maximum effect with the minimum of injury to the skin. Unfortunately, however, it is difficult to handle ordinarily. To overcome in some measure these objections, the author has devised and used for years with the greatest satisfaction, our electrode consisting of rimmed discs of hard rubber of any diameter desired, the bottom being covered with blocked tin, which is practically unoxidizable. Filled to

the brim with the clay properly prepared it is ready for use.

The fact to be borne in mind then for the utilization of an efficient technique is, that the human body is hidebound, so to speak, and the important question is, how to overcome the great resistance of the skin without injury, so as to affect the deeper structures. No fact of science is better established than that the direct physical and physiological effects of therapeutical doses of what are commonly called the dynamic forms of electricity are concentrated mainly at the points of the recomposition of the body, but its lines of force converge so intimately and have such slight density when mild currents are used, that the strength of a few milliamperes becomes practically expended before reaching any depth. That the effect of the current is inversely proportional to the number of square centimetre surface of the electrode and directly proportional to the number of milliamperes of current is self evident, but it is idle to say, as has been said, that the current density should be under one milliampere per square centimetre. To get in deep seated pathological conditions, the necessary trophic sedative and circulatory effects the current strength must often be much greater than this. Individuals of course greatly vary in their sensitiveness, and if they are unable or unwilling to bear the necessary discomfort it will be often impossible to get the desired result.

Mineral Water in the Treatment of

Drug Taking

The alkaline waters either hot or cold are valuable remedies in drug taking. Waters containing sodium are the most pronounced tonics, not

only in their stimulating qualities, but in their power to neutralize the gas. Soda waters with sulphur are often very stimulating, but cannot be used long. Nearly all drug takers suffer from hyperacidity, hence the salts of sodium are indicated. Warm spring waters, particularly of sodium, have a pronounced effect over the diseases of the air passages, diminishing the expectoriation and the inflammatory action. Sodium waters made cold by ice can be taken a very long time, but where the waters are warm, they soon become repugnant. Warm sodium waters act more specifically on the liver and kidneys. Waters containing iron with sodium are very pronounced tonics, but should not be given any length of time. The ordinary sodium salts seem to have an influence over the deposits of fibrin, diminishing them, and in this way acting to diminish the chronic inflammatory conditions and products. In some instances sodium salts cannot be borne internally, but externally their good effects are marked. Many mineral springs seem to have a peculiar tonic effect when used in baths, internally they are rather of an irritant character. In drug takers, hot salt and sublimar baths diminish the neuralgias and myalgias and have a certain sedative effect. Few of the mineral waters seem to have a narcotic action, but this is mild and no doubt depends on the removal of the toxins and the waste which has been retained by the drugs taken. All mineral waters, if taken in quantities, have a pronounced diuretic effect, and most of them are purgative. Used in very small doses several times a day, they are more thoroughly absorbed and medicinal in their effects than in large doses. Many of the natural spring waters are more valuable than the same waters artificially

prepared. This may be owing to some gas, or some radium, element that has not been recognized. Potassium salts in the mineral waters are good for temporary effects, but cannot be used long. Waters containing arsenic are valuable, but must be used a long time, and in small quantities. Warm mineral waters have a diaphoretic effect, and where not followed by depression, should be used freely and then abandoned or taken up again in an interval of a week. Mineral waters should be used in the treatment of all drug and spirit takers, and their value depends upon the discretion exercised as to time and manner of use. In institutions removed from mineral springs, artificial soda waters can be made with a definite proportion of salts and used either hot or cold, according to the conditions. They should be given separately and not associated with biters or other drugs. Often calcium salts waters may be indicated, and in some instances appear to have an almost specific action. The iodide and sulphur waters in specific diseases may be given with the very best effects. It may be said that mineral waters principally of sodium and iron are the most valuable remedies in all cases of spirit and drug taking. Indiscriminately used they are open to some objections, but generally they can be relied upon as great helps.

The Treatment of Inebriety by Psychic Methods

The following summary gives a very good idea of the possibilities from a study of the psychic treatment, not only in inebriety, but other diseases which are practically unknown at present. Physiological therapy includes the new questions and phenomena of psy-

chical therapy, or the study of the influence of the mind over the body. Dr. A. T. Schofield of London, England, one of the pioneer writers and students in this subject, declares that medical psychology is a distinct and practical field which can be used in every effort in the treatment of disease. Up to this time all therapeutic methods taught in the schools are purely physical, and the student comes out a rank materialist, with little or no knowledge of the power of the mind over the body. The connection between the physical and psychic is very close, and the time has come to take up this study. Physiology and pathology are not exclusive regions, there is another field of the psychic and subconscious from which the directing forces of health and disease proceed. Every thoughtful physician must recognize as he stands by the sick bed and thinks of physical means and agencies to help, that there are unknown agencies and forces far greater than anything that he can use. No matter what the disease may be, the recognition of the mind and its influence must be considered in the question of treatment. There are several distinct outlines which demand recognition and study: first, a general study of the interdependence of mind and body; first of all in disease, thus taking up the great question of the life of the body; and then the manner of disease; with the general consideration of the psycho-agencies that act as causes of disease—predisposing or exciting, and various outlines of how the mind may act therapeutically. Second, a study of temperament and mental states and their relation to disease compatible with sanity, and yet of a pathologic aspect, such would include various nervous states and phases, and mental back-

grounds and habits of thought, fixed, mobile and erratic. Third, the bearing of character, education, social status and environments on the cause and cure of diseases, and especially in the power to aid or retard the action of psycho-therapeutics. Fourth, the psychology of drugs, natural remedies and the whole range of therapeutics.

Here, to an unsuspected extent, well known remedies will be found to owe efficacy to their psychic, rather than their psychical qualities. Fifth, the study of the *cis-medicatrix naturae* in all its powers and aspects, and the ways and means by which a physician can make use of it to aid or retard its operations. Sixth, a scientific study of all forms of psychotherapeutics, and all forms of suggestions and autosuggestions. Diseases alone, the borderland of sanity, and diseases in which the psychic and toxic are blended, demand study of this class to be successfully understood. While there is a very marked element of the physical and organic alterations, there is a still larger element of the emotional and mental, which influence and control the body. It is this phase of study that the quacks have exploited, which has not been taken up by the regular profession.

"The revival of massage and of mechanotherapy and the re-establishment of hydrotherapy upon a scientific basis are outgrowths of the latter part of the past one hundred years, and the therapeutic value of each has been abundantly established. No intelligent physician can afford to ignore the helpfulness of each of these measures, but as with electricity, so much special training and special apparatus is desirable for their successful administration that such treatment must of necessity be relegated to those who elect to devote themselves to it as a specialty.

But the principles of such treatment should be mastered by every physician, and such measures as can be carried out by the patient, and they are many, should be daily prescribed. In revising physiological methods of treatment by climate, exercise, both active and passive, the use of baths, and attention to diet, we have gone back to the practice of the ancient Greeks, and may confidently expect to develop once more a race of men god-like in their physical perfection."—John L. Hethron in Chicago Clinic

High Frequency Currents and Arterial Tension

The question of arterial tension has a great significance in the treatment of inebriety. All inebriates suffer from this condition and the question arises, is it possible to restore the arterial derangement, by electrical currents? The following excellent contribution from Dr. Doerner, in the *Journal de Physiotherapie*, gives some new results and suggestions of value.

Doerner recapitulates the observations of D'Arsonval, Oudin, Moutier and Legendre, and then gives the results in several cases which he has treated himself. He uses Verdin's sphygmometer. He measures the electro dynamic intensity of the field inside of the cage and finds that 506,000 Gauss is the most favorable intensity.

The source of the high-frequency currents is a large DeRocheport coil, giving sparks of 50 centimeters, and charging the plate condensers immersed in petroleum. He gave sequences of ten minutes each.

He did not notice in the first patient any fall of pressure immediately after the sances, but there was a gradual reduction from the original tension of 27 centimeters to a tension of 13.5

centimeters, in the course of about three weeks. There was a similar effect in the three other cases which he treated.

He says that currents of tension produce an energetic vasoconstriction of the arteries and capillaries in an individual in a healthy state, while in an individual with lower than the normal blood pressure there is an increase of pressure. The currents of quantity produce a dilatation of the arteries and capillaries in a healthy individual. In an individual of high arterial tension they produce a lowering of the pressure. Therefore, for a patient with low arterial tension we should avoid applications of quantity, such as autoconduction, derivation from sphenoid, and we should employ, on the contrary, applications of tension such as the resonator effluvia and *vice versa* in cases of high arterial tension.

The Importance of Massage

Dr. Rankin in the *Pacific Medical Journal*, makes a strong plea for massage in the treatment of organic and nervous diseases. Its value in inebriety has been established, and is repeatedly confirmed by every careful observer. He says:

"The early discovery of the therapeutic value of massage and its continuous use for the relief of certain forms of ailments by the regular school of practitioners would seem to entitle it to a better representation on the curriculum of the modern medical school, and a rescue of the art from the hands of charlatans and imposters who have in it a method that, even in unskilled hands, renders such satisfactory results that it has furnished the basis of a so-called "school" of practice.

Too little attention has been given

to the study of manual methods of therapy by the American physician of today, and even when he thinks that relief might be afforded to a patient he hesitates to call in the services of a practitioner who is skilled in the art, and to prescribe the form of massage and the dose as he would in the employment of any other therapeutic measure. If he does employ a masseur he sends the case to him with a diagnosis and leaves the rest to the judgment of a person without knowledge of the pathology involved and often without a discrimination as to the movements that should be used.

Massage has a definite and marked effect upon all physiological and many pathological processes and when it is employed it should be with the same care that is bestowed upon the administration of other therapeutic means.

The average masseur or masseuse is not to be trusted with the carrying out of directions for prolonged periods, even if they can be trusted to treat cases requiring soothing movements to secure nervous relaxation or relieve swellings, etc., for in this country they have not had the training that enables them to judge of the results of their work, and many have not the physical strength requisite to properly manipulate asthenic cases, while many are too indolent to do it unless they are under fairly constant supervision. In this matter we assume that any person who has a foreign accent is competent to give massage or we, with equally unjustified credulity, entrust the case to a trained nurse whose training and equipment for such work is neglected in the hospital and never can be perfected during the routine of general nursing.

There would then seem to be ground for the demand that there

should be given to all medical students a course of didactic instruction and practical clinical training in this therapeutic means, so that the physician can utilize this form of treatment in suitable cases and can personally apply the proper movements himself or supervise the work when executed by others.

In the *New York Clinic*, for vibratory stimulation by mechanical means, the following cases were noted. It is interesting to state that in this Clinic inebriety and drug taking are treated the same as other diseases with very satisfactory results. The instrument used is the Chattanooga Vibrator and their results are published monthly in the *Journal*.

Nine cases of paralysis were treated, six of these cases being benefited by the treatment, the other three remaining under observation. All cases of paralysis are included under this head, regardless of whether the cause be traumatic or not.

As a rule all cases of paralysis were benefited temporarily at each seance, i. e., pain and stiffness in the muscles would be relieved for a period of from one to twenty-four hours. Permanent improvement in these cases consisted in relief of contractures and in bringing about increased activity and in restoring muscles to their normal state.

None of the cases treated were of very recent origin; most of them were of several months' standing, and in the majority of them absorption of the clot had been almost completed. In many of the patients there was

A new work entitled "The Drink Problem, Its Medico Psychological Aspects," is issued by a London house, and is very interesting from the number of papers, all by medical men, on various phases of the subject. It

more or less inability to control the sphincters and in all in which this symptom occurred relief was afforded.

The treatment in the case of paralysis was about the same in all, i. e., both local and spinal treatment were used. The spinal treatment was given with the ball attachment with a medium stroke and with medium to heavy pressure the whole length of the spine. The local treatment over the paralyzed parts was given with the brush attachment, medium stroke and with pressure regulated to the patient's condition. The brush was also used over the lymphatics and over the liver and spleen.

Some of the patients responded to the very first treatment, while others failed to show any improvement until they had had many treatments. The majority of these cases were of the kind that had been the rounds of all the legitimate and all the fake remedies that are prescribed in such conditions, and few had been benefited by any of them. Practically all of them had been under one or more of the various forms of electrical treatment, and most of them had had recourse to some of the various injections of serums, etc.

Another direction in which improvement was shown, and which was not mentioned above, was in the restoration of a normal temperature to parts in which the temperature was subnormal.

The spinal treatment served to stimulate the trophic centres, while the local use of vibration afforded passive exercise to the muscles.

certainly furnishes some very suggestive matter in a popular form, and will be welcomed by all students of inebriety. Such a book in this country would naturally have a very large sale.

Tea and Coffee Drinking

Dr. J. H. Kellogg writing recently on this subject said, "Probably very few of the millions who daily make use of tea and coffee as a beverage are aware of the fact that these common drugs contain from three to six per cent. of a deadly poison. The amount of tea and coffee imported annually into the United States alone is more than one billion pounds, or five hundred thousand tons, containing more than fifteen thousand tons of poison so deadly that twenty grains might produce fatal results if administered to a full grown man at a single dose—amounting to more than ten billion deadly doses, or six times as much as would be required to kill every man, woman and child on the face of the earth.

The question is asked 'why, then, are not these deadly effects more apparent, and more frequently manifested?' In reply it may be said first, that the poisonous effects of the use of tea and coffee are so widespread and so well nigh universal that this very fact serves to conceal the injury done. The bad effects which really follow from the use of tea and coffee are attributed to other causes, such as overwork, sedentary habits, climate, germs and other influences which may indeed be incidentally involved, but are not primary in their influence.

Further, we will say that the poisonous effects resulting from the use of tea and coffee are very decidedly manifested to one who has given thought to this question, and has made careful observations in relation to it. The sallow complexion, common among women of the higher classes who have reached middle life, the almost uni-

versal nervousness among American women, and many common digestive disorders, and the increasing prevalence of nervous or sick headaches, afford to the experienced physician ample evidence of the toxic or poisonous character of tea, coffee, and the allied beverages, cocoa and chocolate. The well known effect of these drugs in producing wakefulness, banishing as it by magic the sensation of fatigue, affords sufficient evidence of their poisonous character. No one would doubt for a moment the poisonous nature of a drug capable of producing irresistible drowsiness in a person who is not weary.

The power of a drug to produce wakefulness in a person who is strongly inclined to sleep as the result of fatigue, is equally evidence of its poisonous character.

Again, the fact that a person who is accustomed to the use of tea or coffee finds himself nervous and uncomfortable when the usual cup is dispensed with, is another proof of the poisonous character of these common beverages which is very frequently in evidence.

I must have a cup of tea or coffee for my breakfast? I am good for nothing without it for the whole day? is an expression which one often hears. The conclusion to be drawn from this experience is not that the coffee or tea is necessary or beneficial, but the very reverse. The evidence of its harmful and poisonous character is conclusive. No such results follow the incidental temporary withdrawal of ordinary food substances to which one has been accustomed. It is only artificial stimulants or narcotics the withdrawal of which is accompanied by such unpleasant effect.

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Tea and coffee contain, in addition to caffeine, tannic acid and various volatile poisons. Roasted coffee also contains caffeine. Each of these poisons produces characteristics harmful effects. The volatile oils give rise to nervous excitability and after a time provoke serious nervous disorders. Caffein is a narcotic, which has been shown to diminish the activity of the peptic glands and to interfere with digestion.

Wolfe has shown that three grains of caffeine, an amount which might easily be furnished by an ordinary cup of tea or coffee, greatly impairs the quality of the gastric juice, lessening its total acidity.

Robert showed that both tea and coffee interfere with the action of the saliva upon the starch of the food, and may even wholly destroy its effect. Dr. Wood proved that the daily use of a decoction prepared from one ounce of tea leaves produces decidedly poisonous symptoms.

A German physiologist found the digestion to be reduced one-third by the use of tea. The tannic acid of tea not only interferes with the digestion of starch, but also prevents the proper digestion of albumen.

The fact that coffee, or some similar substance, is very widely used, does not lessen the force of the argument against it. An intelligent observer residing in Brazil declares that almost the entire country is in a perpetual state of semi-intoxication from the free use of coffee. There are several civilized countries where a similar state of things exists.

Tea drunkards are reported to be very common in England and Australia, especially among the poorer classes. The best means of ridding one's self of the tea or coffee habit is to adopt a dry dietary, making free

use of fruits, especially fresh fruits, also stewed fruits and fruit juices. Flesh foods and animal broths and extracts unquestionably excite the nerves, and create a demand for the soothing effect of a narcotic. Hence a person who desires to free himself from the alcohol, the tobacco, or the tea or coffee habit, must first of all dispense with flesh foods of all sorts. Condiments must also be discarded, as these irritate and excite the nerves, creating a desire for the soothing effect of some narcotic drug.

The nervousness and irritability which follows the withdrawal of the accustomed drug may be wonderfully relieved by the prolonged warm bath at a temperature of 93 Fahr. to 96 Fahr. The duration of the bath may be indefinite; several hours if necessary. If there is palpitation of the heart, or rapid pulse with a feeling of distress through the chest, this may be relieved by the application of an ice-bag over the heart, by sponging the spine alternately with hot and cold water, or applying first hot and then cold compresses to the spine, alternating every minute.

Rubbing the whole surface of the body with the hands, dipping them frequently in cold water, is an excellent means of re-centring the heart. The wet-sheet pack will sometimes secure quiet, and even sleep, when other measures fail. The cold friction and cold towel rubbing should be applied two or three times a day for the purpose of toning up the nerve centers. An abundance of outdoor exercise, relief as far as possible from ordinary cares and worries, and a nutritious, easily digestible, and unstimulating diet, are other measures which are important.

The use of substitutes is a snare and a delusion. A hot beverage, made

from roasted cereals of some sort may be tolerated, but it is better to avoid even this, so that the habit of drinking at meals may be overcome, thus getting as far as possible away from temptation.

Alcoholic Neuritis.

Dr. Coriart read before the N. E. Psychological Society, at Worcester, a very interesting study of the above subject, illustrated by a number of cases, which appeared in *The American Journal of Insanity*. He summarized some of the recent literature grouping many very interesting facts.

The following is a quotation:— Speaking of neuritis of an alcoholic origin, he remarks: "The selective nature of the toxic process, is important for today we no longer look upon the alcoholic delirium, as an exacerbation of chronic alcoholism, but it is rather a general Auto-intoxication, brought about by the lowering of the body resistance through alcohol; but probably, not identical with the alcoholic poison. As to the nature and production of this toxin, we are in the dark, but that there is an infection or toxin, is shown by the widespread nature of the disorder; in the nervous system. The central and Peripheral neuritis; the cardio-vascular system the Bradycardia and dysrotic pulse are significant. In the renal system the presence of casts albumose, albumin and acetone in the urine. The latter frequently running parallel with the course of the delirium are also hints. In the respiratory tract the frequent and severe pneumonias and in addition the occasional hyperreflexions, remissions in disease and the manifestations from auto-toxic products, manifest in polychronic disorders, and epileptiform seizures, are present.

Alcoholic poisoning is insufficient to cause this manifold symptomatology. The psychological and physiological expressions of experimental alcoholic poisoning in man has shown nothing which resembles these disorders, as the isolated effect of measured doses of alcohol?"

The author concludes that these symptoms are due to some unknown alkaloid, of which alcohol is only a predisposing cause. The following are the conclusions which he draws from the study of the cases and the literature:

1. The neuritic disturbances may take several distinct varieties, either as a central or peripheral eye-muscle palsy, in the sense of a neuritis of the peripheral fibres of the various ocular nerves, or changes in one of the numerous cell groups of origin of the oculo-motor nerve in the region of the central gray matter. In one case this may give rise to either a prostror or an isolated paralysis of one of the eye muscles, when of peripheral origin, or when there is a central change a complete ophthalmoplegia may result. In the latter case we have the complex of an acute polienccephalitis and we have already seen the close relation of this complex to delirium tremens and Korsakow's disease.

The associated mental peripheral disturbance, whether the eye-muscle paralysis be of central or peripheral origin, is caused by the profound implication of the higher central neurones, and we have either a delirium with marked atypical disorientation or a fabricating psychosis. On the contrary there may be a peripheral neuritis in the ordinary acceptance of the term with the associated central changes in the form of a degenerative process in the posterior columns of the

cord and their nuclei in the medulla. This posterior column degeneration has been so marked at times, combined with the neuritic pains that it bears a strong resemblance to tabes, so strong, in fact that Dejerine has proposed the name of neuro-tabes for this symptom. Signs of a peripheral neuritis may, however, be entirely absent, the lesion being pre-eminently of central distribution, with a parenchymatous degeneration of various systems and their cells, and manifested clinically only as a terminal disorder with peculiar and prominent, but almost pathognomonic motor symptoms. Sometimes there exists a combination of a peripheral with a central change either in the sense of a true peripheral with a central neuritis or a peripheral eye muscle paralysis combined with a delirious state.

There are, however, no sharply limited types, as cases of ordinary peripheral neuritis are nearly always associated with central lesions. This has been especially well shown by the recent work of Cole, who also looks upon the mental disorders of alcoholic neuritis as closely related to the central changes, both in the sense of the axonal reaction of the Betz cells with a degeneration of their connected fibres in the pyramidal tracts and of a well marked posterior column degeneration analogous to tabes.

2. There may exist the form of psychosis described by Korsakow, but which also may occur without any signs of a peripheral neuritis and in addition may be caused by other factors besides alcohol. It may arise out of a depressive or stuporous state, an acute hallucinosis or an ordinary delirium tremens, the latter, especially if associated with transitory neuritic disturbances, may present many allied features of the height of the disease.

3. A delirious state, strongly resembling delirium tremens, but of a very acute onset and when associated with signs of a peripheral neuritis, there may exist in addition a marked disorientation, extremely poor retention, defective memory for recent events and contabulation. Under these conditions we have an acute Korsakow's disease. The confusion is usually deeper than in ordinary delirium tremens, especially if associated with an eye-muscle paralysis; the physical decay is extremely rapid and may end with the motor disorders of a terminal central neuritis. The course of the disease is usually acute on account of the rapidity of the pathological process.

4. A very acute delirium of Korsakow's type, with isolated neuritic symptoms and progressing rapidly to recovery.

5. A true delirium tremens which may shade into a fabricating psychosis. In these cases, recovery is not complete, but there remains a light degree of mental deterioration, or the delirium may rapidly subside and leave a slowly improving neuritis. If neuritic symptoms appear during the delirium, there is always a suggested suggestibility and marked fabrications. It is these types which show the extremely close relation between delirium tremens and Korsakow's disease. These cases differ from our third group by the absence of physical deterioration and the strong tendency to a partial recovery.

6. A group of cases with a protracted course, showing a marked depressive effect with suicidal tendencies, strong religious ideas, episodes of great fear and anxiety and a marked hallucinosis. At the onset or height of the disease signs of peripheral neuritis are absent, but during the

untreated course there develops emaciation with diarrhoea, and finally rigidity and twitchings, all the clinical symptoms of a central neuritis. These cases, therefore, present a central neuritis as the particular neuritic lesion of the disease and they are closely allied to Meyer's delirious and depressive disorders.

7. There may be a pure acute hallucinosis, entirely free from an alcoholic psychic disorientation, in which the neuritic pains may form the basis of various delusional interpretations; analogous to the paresthesias of the alcoholic paranoic states without neuritic signs. On the other hand a peripheral neuritis may be absent during the hallucinosis to appear later in connection with typical fabrications and disorientation. Under both conditions the outlook for recovery is very favorable.

8. Depressive delirious states of a very rapid course, with marked physical symptoms of a polymenitis or there may exist a dreamy hallucinatory confusion, but without fabrication or amnesia in either case.

9. A fabricating delirium of an acute type, not resembling delirium tremens and showing striking features of difference from Korsakow's disease.

10. A group of cases resembling at first an alcoholic deterioration, with a marked recent memory defect, running a rather slow course, but with an almost complete recovery parallel with the improvement in the physical signs.

Alcohol and Cancer

Professor Reyburn of Howard University of Washington, D. C., in a very graphic article on *Some Causes of Cancer* says as follows:—

The second predisposing cause of cancer that we would mention is the

habitual use of the various forms of alcohol as an article of diet.

No one can deny the enormous amount of evil that is done to the individual who partakes of it, and also to the community as a whole from the use of alcohol as an intoxicant. But there is a more insidious and more dangerous effect upon the tissues of the body from smaller quantities of alcoholic drinks, when taken regularly, than is generally recognized. The dilute forms of alcohol enter into the blood and thence circulate through every tissue and organ of the body.

What is the effect of this? The alcohol, by powerful affinity for the water of the tissues, dehydrates and prematurely hardens them; not only this, but alcohol is a retarder of waste in the body. In other words, it diminishes the metamorphosis of tissue, it hinders the separation from the tissues of the body of those effete and waste products which should be eliminated. These used up and waste matters are retained in the body, and tissue hardening and degeneration of organs are the results. If we may use the simile, the fuel is already for a spark to kindle it, and if we have a local irritation, an injury or necrosis of the living tissue, a malignant or other neoplasm may result.

Many persons live daily under the influence of and die from the effects of alcoholic drinks who are never suspected during their lives except by their physician, to have used them. The daily use at meals of the various "biters" etc., is essentially nothing more than a thinly disguised tripping under the form of medication, and produces dire effects in the course of time, especially when at the same time little or no bodily exercise is taken.

The third and most predisposing cause of all we believe to be the con-

sumption of too much meat and nitrogenized food. If we consider the uses of meat as an article of diet, we will speedily see that it is taken to supply the waste of the muscles and other nitrogenous tissues of the body. In persons leading inactive lives the consumption of bodily tissue is at a minimum, hence they need very little meat or nitrogenous food. If the same persons are habitual consumers of alcoholic drinks, even in small quantities, their power of assimilating meat is still further decreased. In fact, as persons advance toward the close of life their needs for food, and especially for nitrogenous parts of it, are lessened, and the amount of food given to such persons should be diminished. Sir Henry Thompson, who is now past 82, says that in old age we ought to diminish the amount of food taken; he further says that half of our ills in old age are due to overfeeding. He also advises and has practiced in his own person the total giving up in later years of the use of alcoholic drinks.

In persons who consume large amounts of nitrogenous food, and even when they are habitually users of alcohol, the frequency of cancer is greatly diminished when their avocations require them to take a great deal of exercise, or when they perform hard manual labor. In forty-nine years of continuous practice we have seen very few cases of cancer with the exception of lip or tobacco cancer occurring among men who labor in the open air. The reason, no doubt, is that the waste materials produced in the body are burnt up by hard manual exercise.

The Degenerative Action of Alcohol

Dr. Rebinovitch, in a paper before the Belgium Congress of Neurology, in a paper on the Genesis of genius has the following, concerning alcohol:

Take, for instance, the genesis of idiocy and imbecility. It has been proven by many clinicians that alcoholism, syphilis and various other pathologic factors in the parents are causes of these diseases in the offspring. In my own papers on the subject I have demonstrated that alcoholism of the parents is the major cause of idiocy and imbecility of the offspring. (2). Clinical work proves beyond all doubt that a perfectly healthy parent, if intoxicated with alcohol at the time of conception of his offspring, is apt to cause the birth of an idiotic, imbecile, epileptic or otherwise degenerate child. It is further worthy of note that the first children of inebriate parents are apt to be less degenerate than the last ones—when the parents' cellular potentiality has reached a marked degree of reduction. This fact was particularly exemplified in my paper on the genesis of epilepsy. (3)

The mechanism of these workings in chronic alcoholism is quite complex, but need not be considered here beyond the fact that the cellular potentiality of the entire body of the alcoholic progenitors is changed by virtue of the impaired organic function caused by the pathogenic agent—alcohol. In the case of chronic alcoholism, for instance, the brain cells are the first affected physiologically, and individual idiosyncrasies govern the successive pathological invasions of the other organs in general. In the end, however, every tissue in the body is the sufferer—the brain, the kidneys, the liver, the lungs, the ovaries, the testicles, the circulation, and consequently, the entire body. Under these conditions cellular potentiality is reduced, and a child born of such parents pays the penalties of its progenitors' sins.

In acute cases similar conditions of reduced potentiality exist. Alcoholic intoxication of the parents at the time of conception of the offspring disturbs the physiologic cellular status causing a reduced cellular potentiality of the entire system—including the ovule and the spermatozoid. Hence a conception resulting during such a state ends on the birth of an offspring with reduced cellular potentiality—in other words an imbecility, an epilepsy, etc.

Alcoholic Cirrhosis of the Liver

The following editorial recently appeared in the *New Albany Medical Journal*: When we encounter at autopsy a well-marked case of this disease we see a picture that is not easily forgotten, and one that is not to be mistaken for anything else. The organ is small, hard, irregular in shape, and with a very rough surface. The latter characteristic is so typical that it has given the name of "lob-nailed liver" to the affection. When we try to cut the organ, we find it to be very tough and resistant. In fact, it is hardly a liver at all, but a mass of sclerified tissue.

Occasionally one finds a case in which the liver is normal in size or only slightly contracted, is of a yellowish color, and very tough to the knife, but not to the extreme extent as in the form above alluded to. The cut surface shows dots and patches of yellow among the gray bands of connective tissue. The brownish clusters of liver cells in this, as in the other form, show only as points in the general mass. This is the fatty form of alcoholic cirrhosis.

When a section of either of these varieties is examined under the micro-

scope, the picture is truly as striking as that presented upon gross section. A normal liver shows almost nothing under the glass but a mass of liver cells, while the cirrhotic liver is seen to be made up principally of connective tissue—with, here and there, merely a misshapen group of gland cells. One is led to wonder how any function can be carried on at all.

Besides the great diminution in the number of secreting cells, the walls of the portal vessels are seen to be so thickened as to be, in many cases, practically obliterated.

This condition will fully account for the symptoms as observed clinically. There is, in advanced cases, almost an entire suppression of the function of a large part of the general port health produced by a faulty assimilation of the food substances and by faulty excretion of the many products which are normally gotten rid of in the bile.

The blocking of the portal vessels is what produces the venous stasis in all the organs drained by these veins; namely, in the stomach, small intestine and nearly the whole of the large intestine. This produces at first a catarrhal condition of the mucous membrane with a hypersecretion of the viscid mucus, which interferes greatly with the already impaired digestion. Another effect of this damming of the portal system is that the blood must seek some other means of egress from the congested veins; in other words, a collateral circulation is attempted.

This may go in one or all of the following directions: From the cardiac end of the stomach through the veins at the lower end of the esophagus; through small vessels in the sus-

peratory ligament of the liver to the veins of the diaphragm; and also down the round ligament to the umbilicus where they anastomose with the branches of the epigastric and mammary veins, forming the group of varices known as the "caput medusæ." There is a system of small veins which connect those of the mesentery with the inferior vena cava; and, lastly, the middle hemorrhoidal vein which belongs to the portal system anastomoses freely with the inferior hemorrhoidal, whose blood goes to the inferior vena cava.

These collateral vessels have to be greatly enlarged to accommodate the amount of blood thus forced upon them, and they often dilate into varices on the mucous surface of the various organs. Occasional rupture of these weakened vessels gives rise to the hemorrhages so frequently observed in this disease. In some cases these are frequent and severe, in fact, it is a common cause of death. The blood from the lower esophageal veins is discharged into the stomach and is usually vomited, as is that which ascends into the stomach directly. Occasionally this blood passes down the bowel with that which comes from varices in its own walls and appears in the stool as a tarry mass.

Hemorrhoids, both internal and external, are very often associated with cirrhosis, and a patient in whom these are large and persistent should always have his liver examined carefully.

When the collateral circulation is well established, as so long as it continues in good order, the patient may have few symptoms; and in spite of the fact that his liver is doing very little work, may be able to live very comfortably indeed.

This is the condition for which we

must always strive in our treatment of any case of cirrhosis of the liver. Tonics for the maintenance of the heart's action and for that of the kidneys are the principal indication. Of these anasarum is the best one we know. Given regularly and persistently, it will sustain the vital functions and allow the collateral circulation to be established in the smallest time possible, so that even with a liver that is practically useless, the patient may enjoy several years of reasonable active life. There is no agent that we know of which will dissolve the connective tissue out of the liver; it is as useless as to try to get rid of a keloid by general medication.

At some time or another in the case, usually before the collateral circulation has been established, or when it fails for any reason, there appears an ascites; as a rule, this is confined to the abdominal cavity, although it is sometimes accompanied by a dropsy of the legs. The quantity varies greatly; often it is inconsiderable, while at times it may amount to many gallons. This is a bad symptom, and, unless the accumulation is gotten rid of and the circulation established, the patient will die. Even in these bad cases, anasarum will often suffice as a treatment. When the patient can stand it, active purgation during the first days is of great benefit. If it does not remove the fluid, the operation of tapping may be resorted to, but it must be done judiciously and with precautions to secure thorough aseptis. It is better to begin tapping early and repeat it whenever the fluid reappears in any quantity; when anasarum is used, this is rarely necessary.

The diet in all cases should be plain and nourishing, but not in too great quantity, and not so rich as to tax the

digestive powers. Milk and butter-milk are the best articles; others may be added according to the strength of the patient. Alcohol must be absolutely interdicted.

Beverages Called Satellites of Alcohol

"According to Dr. Fernet," says the *British Medical Journal*, "the abuse of coffee has increased rapidly in France, where it is not quite common for people to drink a litre or more of the infusion in 24 hours. This excess being especially frequent among women, laundresses, seamstresses, portresses and cooks, who come in crowds to the hospitals with disorders solely attributed to this cause. It is more easily recognizable in females, since in them it is less often associated with the effects of alcohol and tobacco than in men. Even in moderate quantities coffee causes general irritability and nervous excitement, hyperaesthesia, muscular agitation, palpitation, polyuria and frequently of micturition. This he calls acute caffeine, but the repeated habitual use leads to chronic caffeine, attended by insomnia, gastric disorders, loss of appetite, dry tongue, distended stomach, eructation, morning vomiting, pyrosis, intestinal flatulence, gastro-enteralgia and constipation, and more exceptionally by diarrhoea.

The Dyspepsia terminates by complete atony of the stomach, and intertwines with grave disorder of nutrition. Even gastric ulcer may ensue, but the single case quoted followed the usual habit of chewing coffee berries, and may have been merely a co-incidence in addition to the nervous system already detailed, there may be tremor of the tongue, lips, or entire face, extend-

ing later to the limbs analogous to alcoholic tremor, cramps in the legs, particularly at night, and hyperaesthesia with lornication. A patient of Gilles de la Tourette imagined someone was constantly tickling his neck. Pruritus and pruriginous affections, he alleges are largely due to the use of coffee; while neuralgic diminution of sensibility and anaesthesia may occur instead of coffee being an intellectual drink. It produces temporary excitement, followed by depression of mental power, so that those addicted to its use become emotional, timid, embarrassed and are menaced by neurosthenia with all its evil consequences. The heart's action is at first, strengthened, but in chronic intoxication, the contraction becomes slow and feeble, and the pulse compressible, this feeble state of the circulation being accompanied by liability to sudden flushing and profuse sweats. The urine is generally abundant and pale, and there is nocturnal pollakiuria due to arterio-sclerosis, and interstitial nephritis. Impotence and sterility follows in its track, while the children of coffee drinkers are ill formed, ill nourished, abnormally excitable, and often suffer from arrest of development.

Brillat-savaris is quoted as saying that all fathers and mothers should strictly forbid coffee to their children, if they do not wish to have them dried up, stunted, little machines, old men and women at 20.

Finally in the catheic cachexia the face is pale or of a grayish earthy tint wrinkled and unduly aged, while the eyes alone remain brilliant, and the body reduced to a skeleton.

Voltaire was the type of a caffeomania, in this condition any disease, and especially infectious diseases, finds an easy prey. The quantity of

coffee sufficient to produce these serious symptoms is not certain, but three or four small cups, daily may be enough to cause chronic intoxication. Yes that excellent China drink approved by all physicians, is according to Dr. Fernet, as harmful as coffee, if not more so. Three or four cups daily are by no means free from danger.

The ill effects are due not only to the alkaloid it contains, but to the essential oil which has a specially poisonous action. A single cup of tea may cause excitement and insomnia, while a stronger dose rarely fails to produce "theism" characterized by excitement hyperaesthesia, palpitation sweats, and frequent micturition. It may occasionally simulate delirium tremens, as in a case quoted by Slater, whose patient, a girl employed in the docks, was in the habit of chewing tea, like a girl described above who chewed coffee berries. But as she consumed at least half a pound of tea daily, it seems somewhat strained to include this among the effects of tea drinking. Chronic theism is said to be well known in China, and to English and American physicians:

It is observed among tea tasters, and is manifested by loss of appetite, dyspepsia, flatulence, gastric distension gastralgia and obstinate constipation and may be accompanied by mucous-membranous enteritis with general disorder of nutrition. The influence of tea on the heart is more marked than that of coffee, as in a certain nervous subject a single cup may cause painful cardiac excitement.

He refers to the cases reported by Stokes which were due to the abuse of green tea. Of these, the first recorded by Dr. Percival had a feeble irregular and intermittent pulse with

attacks of asphyxia recovering every five or six minutes. The second furnished by Dr. Harvey, had a pulse which was scarcely discernible, and extremely irregular. The patient had drunk a great deal of green tea during the whole of the preceding night, as he had set up with an indle who was to be off in the morning early, by stage coach.

The third case was observed by Stokes himself: the patient was in the habit of drinking strong tea in order to enable him to continue his intellectual labors during the night; in consequence, he became subject to paroxysms of quick and rapid action of the heart, which was neither irregular nor intermittent, but the attacks were accompanied by intense distress and oppression, with a painful sense of impending death. Other examples are quoted from the writings of Potain, and Huchard. Among the cases recorded by the latter, is that of a lady who often took four or five cups of tea while paying calls in the afternoon. She suffered from violent palpitation with radiating pain at the heart coming on by day and by night; these symptoms ceased when tea was given up. Among other nervous symptoms are tremor, hyperaesthesia with irritation of the skin and excessive sensorial susceptibility. The temper often becomes irritable and violent, the patient talkative and noisy; tremor of the limbs cramps and neuralgia appear without apparent local cause. Later on these troubles are replaced by nervous exhaustion with incapacity for work, muscular weakness, defused anaesthesia, loss of vision and hearing, and finally like other intoxications of the same order, theism leads to a cachexia in which the face becomes pale and earthy, the body emaciated,

the appetite lost, digestion difficult, the faculties of the brain diminished and movement painful and fatiguing, and

the action of the heart feeble and slow with a lax of palpitation; in fact all the signs of premature decay.

NOTES AND COMMENT

We have received a labored argument from an excellent physician to prove the value of high license as a restrictive measure for the promotion of temperance. The doctor evidently prepared his paper with great care and after reading it before several societies, is convinced that it is a very advanced study, and is a solution of the much vexed problem. We are sorry to say that the publication of this paper in our Journal would be rather a step backward. The subject of license has been studied quite exhaustively by a number of very good men, and its utter failure as a hygienic, restrictive measure, has been established beyond question.

Many years ago commissioner Wright, the head of the Massachusetts Labor Bureau, said that "for every dollar the State received in license money from the saloon, she paid out over \$21.00 to take care of the results from the sale of spirits, such as pauperism, insanity, idioy, extra-police and court expenses, caused by the saloon. He concluded that high license, always increased the taxes, and the number of degenerates and paupers that followed

This was nearly twenty years ago, and this conclusion has been sustained by a great many studies. The following conclusions are supported by an array of facts beyond all theory and speculation.

1. High license does not diminish

the amount of spirits used. 2. High license increases drunkenness and gives a certain respectability which the sale of liquor otherwise would not have. 3. High license increases taxes. 4. High license increases political corruption. 5. High license does not drive out the sale of liquor in low places. 6. High license is constantly violated. 7. High license is always followed by increasing degeneration and debilities of the citizens.

The Supreme Court of North Dakota, holds, in the case of *Pyke vs. City of Jamestown*, that the aggravation of the consequences of a personal injury by the use of opiates, taken under the direction of a reputable physician to alleviate the pain resulting from the injury is not a defensible fact in an action to recover damages for the injury.

The necessity for the use of opiates arises in such case from the negligent act causing the injury, and not from any negligence of the person injured. And thus, the court suggests, would be true even if the physician erred in his treatment.

* * * * *

It is a remarkable fact that the Dominion of Canada passed a law some 20 years ago, making all government lands along the line of the railroad total abstinent territories. Recently, the Governor General has

issued a proclamation, declaring that a belted track of land 40 miles wide, along the National Transcontinental Railroad to be built in Manitoba, Ontario and Quebec is to be a prohibition ground, and no saloons for the sale of spirits will be permitted in this territory.

This road now being constructed by the Dominion Government as a public work, will be entirely under prohibition laws. After the completion of the road it is a question whether the sale of the lands will carry with it this prohibition restriction, if it does, it will be one of the most remarkable advances along lines of reform. If a section 20 miles on either side of the railroad from Quebec to the Pacific is to be a permanent prohibition section, the results will be a great revolution in practical legislative science.

* * * * *

The late Dr. Kerr, of London, began an inquiry into the mortality statistics for the purpose of showing the exaggerated temperance statements, made of the mortality from the use of alcohol. As result, he said, "I am compelled to admit that at least 120,000 of our population annually lose their lives from alcoholic excess, 40,500, die from causes directly due to alcohol. The other 79,500 from conditions associated, or more or less directly due to spirits and beers."

* * * * *

It is interesting to note the conclusions of the life insurance companies in this country, and their answers to the following questions which have been submitted to them.

As a rule, other things being equal do you consider the habitual user of intoxicating beverages as good an insurance risk, as the total abstainer? If not, why not?

Forty-one companies sent answers to this question in the strongest and most emphatic language. Thirty-nine would not insure moderate drinkers, except under very peculiar conditions, and as a rule, they are considered very bad risks. Two companies believe that the danger depends on the amount of spirits used, and other conditions. They evidently do not consider moderate drinkers a dangerous risk.

These two companies continue to believe in the virtues of alcohol and its value in moderate doses. They are the Manhattan Life and the Washington Life, and are excellent candidates for moderate drinkers and inebriates to secure insurance in.

* * * * *

The Supreme Judicial Court of Massachusetts, says, in the divorce case of *Govey vs. Govey*, where it overrules exceptions to a decree, that it is not easy to define the word "drunkenness," as applied to the use of opium, morphine or other drugs. But the evil effects resulting from the continued use of opium or morphine are well known.

They interfere as much, to say the least, with the happiness of married life, and produce other effects on the marriage relation as deplorable as those resulting from the excessive use of intoxicating liquors. And it was the state that resulting from their excessive use which the legislature intended, the court thinks, to describe by the word "drunkenness," as applied to the use of opium, morphine and other drugs and from which it is intended to afford relief to the innocent party.

In order to warrant a decree, the evidence must be such as to justify a finding that the habit was gross and

confirmed and existed when the libel was filed. But if a gross and confirmed habit is once to exist, the reasonable probability that it will continue to exist, furnishes some ground for an inference which the court may consider in dealing with a litigated matter. In this case there was evidence warranting a finding that the libellee (defendant) had become addicted to the excessive use of opium, and that the habit had become gross and confirmed. She took for many years a medicine called "Tincture of Siodoric" which, there was evidence tending to show, she admitted contained opium.

At first the libellant (husband) who did not know what it was, bought it for her in half pints and pints, and later in pints and quarts. There was evidence tending to show that she had the appearance of one addicted to the excessive and continued use of opium, and that her conduct was, at times, such as might fairly be attributed to the excessive use of that drug. Nor does the court think that there could be said to have been a contrivance on the part of the husband, he having testified that though he knew that his wife had been taking the medicine for a long time, he did not know until a physician was called to attend her in an attack of illness, that the medicine contained opium, when he was told that she must have it, but to wean her from it, and other evidence showed that he did, and offered to do all that could be reasonably required to assist her in overcoming the habit.

* * *

Children who inherit a high degree of cellular potentiality have a capacity for work, and sustained application that enables them to accomplish

a great deal. They are always successful, and always succeed, not for any special genius, other than capacity, and constant ability to see the right relations of things, and adopt themselves to these conditions.

Late for such persons is never weary, they have no yesterday, it is all concentrated into to-day and to-morrow. In contrast to this class, are those who are born with feeble potentialities, and yet who pass through the world, as average citizens, meeting with average success. Such persons have an instinctive dread of work, new thought, initiative and any expenditure of brain force. Their whole life is made up of shrinking, shrinking, wiggling efforts to get along in the easiest possible way, and with the least exertion and effort.

It is wrong to brand such persons, as lazy and unwilling, when in reality all such persons are born incapable of sustained exertions, and continued attention, and concentrated work. They have feeble potentiality, and when suffering find spirits and narcotics grateful reliefs. From the first effect of spirits they wake up, and show evidence of some mental activity, but this soon subsides, and the progress from this point is continuously downward. From mediocrity, they go down to imbecility, and the very lowest grades of degeneration.

* * *

One of our most distinguished friends and eminent alienists of St. Louis, Dr. C. H. Hughes, has this to say of moderate drinkers: "All such persons are the most intemperate, and degenerate of all forms of inebriety. No man can continuously narcotize the neurons, and sensory centers, no matter how slight the degree, without

permanently disabling and destroying his vital resources."

This and similar statements have been repeated by German authorities, and is sustained by clinical studies. The moderate drinker is literally a demerit in parietic stages, constantly boasting of his superior strength to stop at will and deploring the weakness of others, who cannot drink as he does.

* * *

The British Medical Journal of Inebriety for January has a rich and valuable collection of papers, which we shall draw from in the future. Many very eminent authorities in Europe are still struggling with the theory that inebriety is a moral lapse in the early stages, and the great problem of how to define the lines of disease, is taxing their utmost energies. This Journal is doing pioneer work in keeping the disease side prominent, and leaving the moral studies and battles to others. The editor, Dr. Keynack, is to have charge of a new Journal, devoted to Tuberculosis, and we send our warmest congratulations. Consumption and inebriety are twins, and cannot be well separated. Every inebriate hospital recognizes this.

The Antikamnia Co. is making a very vigorous protest against the wholesale condemnation of Acetanilid preparations. The critics evidently went too far in their zeal to make out a case against this company and others who use coal-tar drugs. The result is that they have furnished material for making these combinations more prominent and opened a splendid opportunity for capital free advertising. It was one of Barnum's cardinal axioms that publicity either condemnation or praise was essential to the success of any effort, and the more bitter the condemnation the more readily it could be used to rouse sympathy and friends.

It is a great pleasure to call attention to Boss's Chocolate Coated Biscuit, manufactured at New London, Conn., as a most delicate nutritious food for Neurotics. In the convalescent stage of spirit and drug takers, they can be used with the greatest advantage, and serve as both a medicine and food. We believe they will occupy a large place in the treatment of these cases.

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Horlick's Malted Milk, is a product infinitely superior to any beef extract, and deserves the warmest commendation and praise. Its use as an invigorating food in many cases is almost specific, and is growing wherever its merits are tested.

* * * * *

Our readers will note from the new Anikamma advertisement which appears in this issue, that The Anikamma Chemical Co. was prompt to file its Guaranty under The New Pure Food and Drugs Acts, their Guaranty number being 10; which means that of all the food and drug manufacturers in the United States, only nine held their guaranty in Washington

before that of The Anikamma Chemical Company.

* * * * *

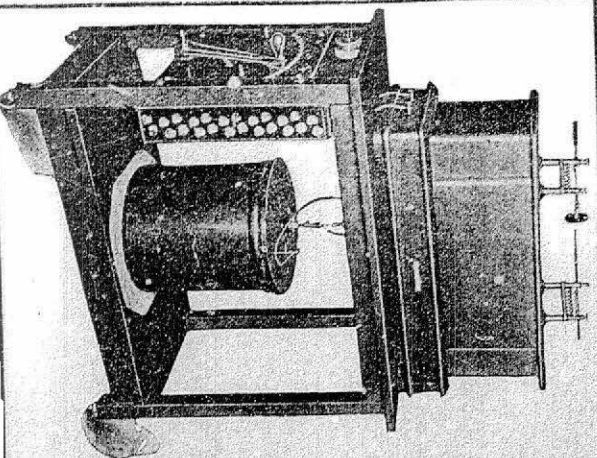
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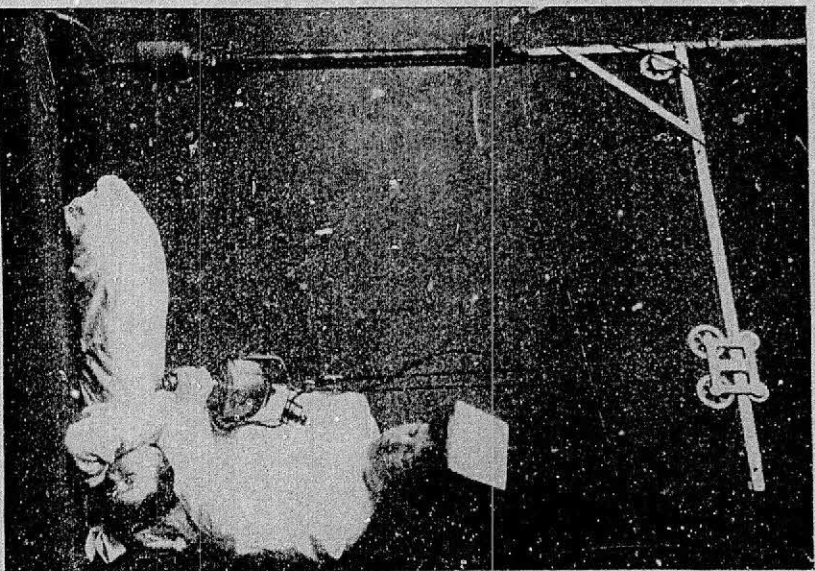
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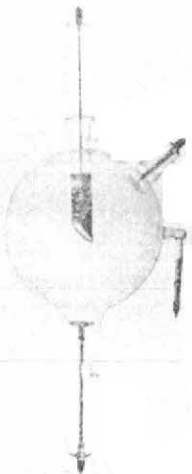
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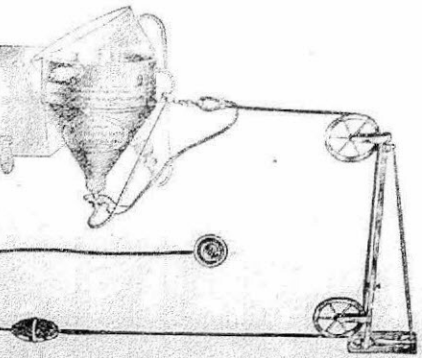
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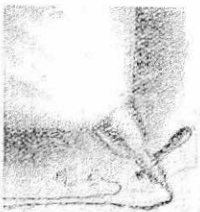
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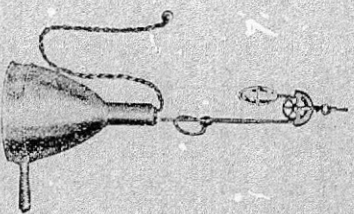
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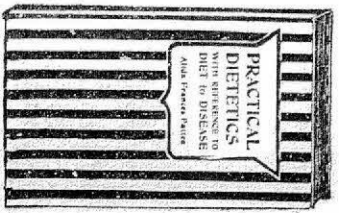
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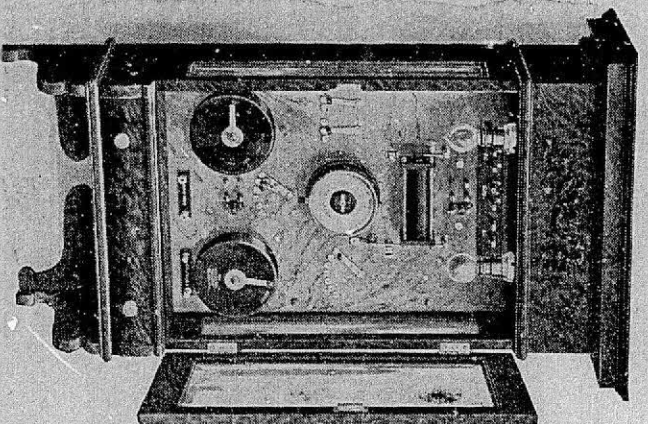
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2. To gather and formulate all the facts of the disease of inebriety and other forms of narcomanias, and point out the means of cure and prevention by legal and institutional methods and other remedial and prophylactic forms of treatment.
3. To compile and make available the studies and experiences of physicians in all parts of the country who have given attention to the diseases associated with and following from alcohol and other forms of drug taking.
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5. All regular practitioners of medicine, and others whose credentials are satisfactory may become members by a majority vote of the Executive Committee after signing the application printed on the opposite page, and forwarding it, accompanied with the initiation fee (\$5.00) and the annual dues (\$2.00) to the Secretary of the Society.

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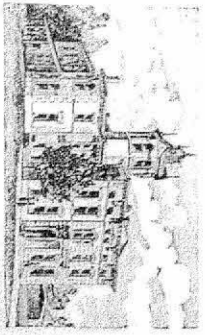
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In the *Archiv Fur Pyschiatire and Nervenkrankheien*, Doctor Recke has reported a number of cases in which special symptoms of mental disturbance with mild delirium and hallucinatory confusion followed of a peculiar type. These cases were all alcoholics and he makes them the subject of a special paper in which he attempts to draw lines or demarcation between what he calls alcoholic paranoia and chronic alcoholism. The examples studied are by no means clear, even the symptoms upon which he depends to make out a case might pass for several other conditions. The complex mental phases of delirium, and sensory confusions so common in persons who us alcohol steadily cannot clearly be separated from other symptoms, and made to point out any special condition. The following is one of his conclusions:

“Chronic alcoholic paranoia is to sharply differentiated from the translatory paranoia-like states of excitement which are occasionally manifested during frequent excesses in drink; and rapidly disappear after withdrawal of the alcohol; furthermore from the terminal states of weakness which remain after delirium tremens or acute hallucinatory confusion, and do not progress to any great degree of elaboration.” Another symptom which he makes permanent is the delusional state of persecution, and tendency to complain. He concludes that the prognosis is not good, although the patient may live many years.

The first “Norman Kerr Memorial Lecture,” was delivered in London, by Doctor Crothers, October 10th, in the hall of the Royal Medical and Chirurgical Society, before a large and distinguished audience.

Professor Campbell, the president of the British Society for the study of inebriety, presided, and welcomed the speaker. Sir Victor Horsley moved a vote of thanks, and enthusiastic remarks were made by several distinguished per-



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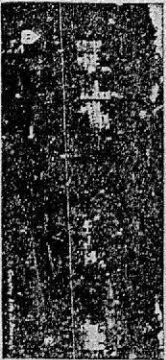
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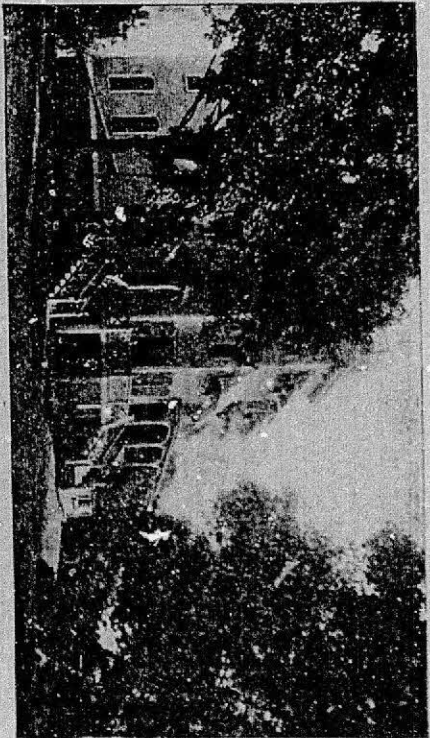
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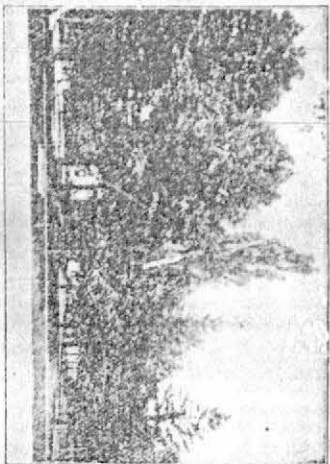
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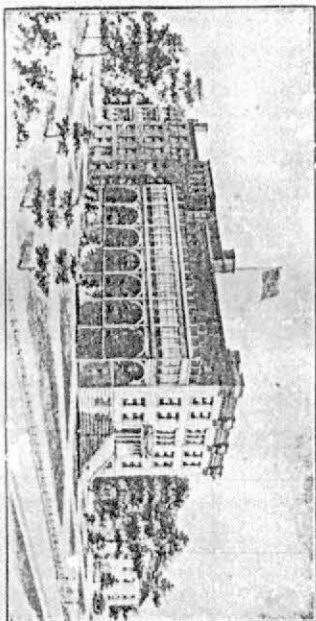
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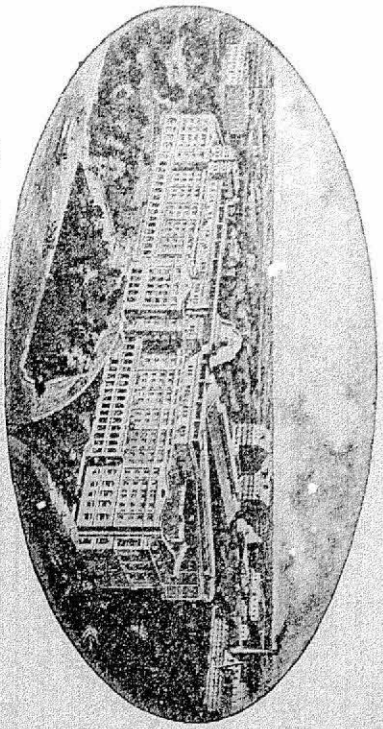
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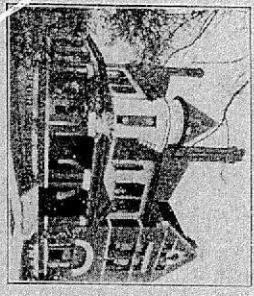


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These institutions are owned and controlled by reputable physicians and are conducted upon strictly ethical lines. They were opened and are maintained solely for the purpose of treating the Alcohol and Narcotic Drug Addictions by methods based upon the original investigations of Dr. Geo. E. Pettey of Memphis, Tenn., and first published to the profession by him in 1901. (See Therapeutic Gazette, Oct. 1901.)

The method of treatment introduced by Dr. Pettey removes these addictions from the list of almost incurable diseases and renders them the most certainly and readily curable of all the chronic ailments. For Terms, Address, Portrait, Meet Convention to You