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indorsed by the Association.

THE USE OF COCAINE AND ACCIDENTS RESULT-
ING FROM IT—CLINICAL CONCLUSIONS.*

By DR. E. DELBOSE.

Our aim being to legitimize the judicious and correct employment of cocaine, we shall take good care not to present this substance as being absolutely inoffensive. There have been cases of poisoning, and cases so serious that they have terminated fatally; but we believe that this toxicity has been greatly exaggerated.

And first of all this habit of considering all unexpected phenomena as being indicative of poisoning cannot be too strongly inveighed against. It must be acknowledged that the physiological properties of cocaine are not well known; they are even so little known that we do not yet know how to administer it internally. Thus it happens that when this medicament, employed under more or less favorable conditions, is absorbed and manifests its normal properties by modifying, although in a very slight degree, certain functions of the organism, immediately a cry is raised of poisoning.

* Continued from July number.

But, looking at it in this way, few substances would be absolutely inoffensive. How often does the administration of a medicine *not* produce the effect expected of it? And if the unexpected should happen must we call it poisoning? Thus, a common purgative administered under certain conditions may produce vomiting, but no passage of fecal matter; in order to be logical we should say that such a patient is sick as one is sick who, from overeating, has a fit of indigestion, and is attacked by violent nausea. Even this is much more serious than certain phenomena produced by cocaine and dignified by the name of poisoning.

For example, a patient is analgesiated by the alkaloid, turns pale on seeing the operator handle his instruments, his heart beats faster, and these symptoms, due to simple emotion, are looked upon as toxic and are so recorded. Medical literature is full of such statements. If we wished to relate all the observations recorded by the dentists, one volume would not suffice.

For example, Dr. Roux, in the *Revue Médicale*, February, 1889, writes as follows: "The number of fatal poisonings by cocaine reached last October the respectable number of 126." M. Roux, in reply to a letter of ours on the subject, gave us the sources of his information. He acknowledged having made a mistake. He should not have said 126 fatal cases, but 126 cases, of which some were fatal; he did not know the exact number of the latter. His conclusions were drawn from a compilation made by Drs. Dumont and Berne. Dr. Dumont, in his turn, was indebted chiefly to the works of Mattison on cocaine.

We have read an analysis of this work in the *Tribune Médicale* of January, 1888. At the beginning of the article four cases are made mention of; but, on reading the work carefully, we have been able to find nothing more about them. In fact, some observations are recorded in such vague terms that we often cannot determine whether they ended happily or not. How, then, can we discuss facts recorded with so little precision? We shall content ourselves with our own statistics.

What makes us think that we possess the correct and almost complete records of cocaine is that in a recent article by Professor Lepine in the *Semaine Médicale*, May 22, 1889, we have found few records of which we had not previous knowledge.

But before proceeding, we must confess something. It is evident that in this table (the author here alludes to a table of 77 cases which lack of space prevents us from reproducing), the poisonings have not been presented in their order of gravity, but according to the dose employed. We are obliged to acknowledge that our records are not complete for a dose less than 0.05. When, with the same dose of cocaine, several cases presented the same symptoms, we recorded but a few such. But starting from 0.05, the dose usually employed, we have recorded, without exception, every case that came to our knowledge.

Let us first of all examine those poisonings due to a quantity of cocaine less than 5 centigrams. In the first place, what are we to think of those provoked by almost infinitesimal doses? Can we seriously believe them to be due to intoxication? We must then believe cocaine to be the most dangerous of the alkaloids. We are inclined, therefore, to believe with Unkowsky and Hugenschmidt that emotion plays a prominent part in the development of certain accidents.

The following record made by Hugenschmidt is a striking proof of this theory. He was called upon to administer cocaine to a woman 60 years of age, who had to undergo a painful dental operation. She was very much excited and persuaded that the medicament to be used was exceedingly dangerous. Under such conditions, Hugenschmidt refused to administer cocaine, but, pressed by the woman to do so, he pretended to yield and injected ten drops of distilled water. In less than thirty seconds the patient complained of terrible pains in the head, rose quickly, made a few steps, and sank on a lounge, crying, "I am dying." A syncope ensued lasting half an hour.

Now suppose Dr. Hugenschmidt not to have injected distilled water; these symptoms would have been credited to cocaine, and we should have a rather serious case of poisoning, since there was syncope lasting half an hour. We are inclined to believe that a great number of cases are attributed to a like cause.

What, now, are the symptoms when the dose is less than 0.05? On consulting our table we find that the most common are: pale face, cold sweat, vertigo, weakness, dry throat, embarrassed respiration and syncope. But a simple emotion is perfectly capable of producing all these. Besides, in confirmation of this hypothesis, we may remark that in many observations the subjects were sickly, impressionable, nervous, or hysterical.

We do not, however, by any means refuse credence to all these cases; even below 5 centigrams cocaine may have active effects. But we refuse to attach any weight whatever to these accidents, which are also of rare occurrence, since for one case where disagreeable symptoms have shown themselves, we could cite fifty where all went well. We believe rather in an idiosyncrasy which, outside of all nervous heredity, renders one patient more sensitive than another to the action of the alkaloid. Cocaine, therefore, should be placed among those substances for which there exists individual susceptibilities.

From this we conclude that a dose inferior to 0.05 may be employed with impunity. The few accidents that may result will be perhaps disagreeable, but never dangerous.

But may we use 1.10? Looking at our table, we see that the administration of 0.05 has been fatal. Let us study this case in detail. It is of capital importance for, if the death was truly due to cocaine, the employment of this drug should be prohibited. It was at the meeting of the Ophthalmological Society of Paris, Oct. 2, 1888, that M. Abadie reported this observation.

“A woman 71 years old, for entropium, received in the eyelid the contents of a Pravaz syringe, containing a solution of

5 p. c. cocaine. At first no sensation; but scarcely was the operation finished when the patient staggered, lost consciousness, the face became livid, the lips blue, as in asphyxia. Artificial respiration was used, two injections of ether, caffeine. Respiration reëstablished, patient uttered a few words, and M. Abadie left, believing her to be saved. Next day he learned that the patient had succumbed in the night, five hours after the accident. No autopsy; but the daughter informed him that three months previously her mother had fallen in the same manner, and remained six hours unconscious.

This report gives rise to an exchange of observations between the colleagues of M. Abadie. Gorecki did not believe in intoxication, neither did Meyer, because the patient had the face livid and the respiration stertorous, phenomena which do not belong to cocaine poisoning, but rather to cerebral apoplexy, when taken in connection with the age and previous history of the patient.

Now do we recognize the effects of cocaine in this case? Poisoning by this substance has never caused congestion of the face. We need only look over our statistics to see that the face is always of a corpse-like pallor. It is true that the face might have been congested if the victim had had convulsions, but she fell down unconscious with no convulsive movements. This again obliges us to discredit cocaine poisoning, for in all the observations we have been able to collect there is not a single case in which death has not been preceded by convulsions. Can we then place accidents exhibiting symptoms contrary to those produced by cocaine to the credit of cocaine? We rather support the opinion of M. Meyer, and attribute this death to cerebral apoplexy.

Cocaine, then, cannot kill at 0.05, nay more, even in larger doses as high as 0.10, it is not dangerous. Nevertheless, the cases reported do present phenomena of a grave appearance. Thus, we have some observations with convulsive movements, but this symptom has been chiefly observed in nervous and hysterical subjects, and cocaine is well calculated to cause ner-

vous accidents in those who have these symptoms in the germ. Besides, we certainly do not deny individual predispositions, idiosyncrasies which manifest themselves in proportion to the quantity of active substance used.

As to the other symptoms, some of them may be explained in the same manner as the above ones. It is beyond doubt that the state of superexcitation, the emotion inseparable from the idea of the operation, is among timid subjects the origin of certain troubles of the eyesight, of vertigo, and even of syncope.

There may be cited in objection to our theory cases resembling that of Howel Way, who, as an experiment, injected into himself one grain of cocaine, and was, as he himself reports, at a hair's breadth from death. It seems easy to explain these accidents on realizing the proprieties of cocaine. We know that one of the chief effects of this substance, employed in weak doses, is the exaltation of the sympathetic system, with consecutive diminution of the caliber of the vessels under the predominant action of the vaso-constrictor fibres. Hence, anemia of the base of the encephalon, giving rise to vertigo and troubles of the respiratory and circulatory systems. In presence of these symptoms an emotion, which may well be taken for a legitimate one, will seize upon the patient and make him think, instinctively, and in spite of himself, of a real danger. The effect of the emotion, added to the action of the cocaine, will still further slow the cerebral circulation; the two phenomena will then react, the one on the other, and syncope will be imminent. This we think was the case with Howel Way: and many other cases may be explained in the same manner.

These phenomena, which at first sight appear to be of exceptional gravity, are not to be feared. To prove this, it is enough to make the patient inhale two or three drops of nitrite of amyl to bring back the cerebral circulation to its normal state, and make every sign of syncope disappear immediately. This was the case with Howard Way and with many of patients, as is proved by numerous observations. We see, then,

that 0.10 centigrams of cocaine give rise to symptoms more frightening than dangerous.

Let us now study the poisonings which have followed doses of from 0.10 to 0.20 centigrams. Here again we find ourselves in the presence of accidents at first sight of very dangerous character, but this gravity is more apparent than real. Two or three drops of nitrite of amyl generally cause the symptoms to disappear.

We must, however, call attention to a new phenomenon, little dangerous in itself, but interesting to note because it indicates a more energetic action of the drug on the system. We allude to the cerebral excitation. A good example of this has been reported by M. Reclus, and runs thus:

A man aged 40, very nervous, impressionable, came to be operated upon for a lipoma in the shoulder. He dreaded the operation, the result of which he feared. The field of operation was anesthetized with 15 centigrams of cocaine. The operation was begun, the excitement of the patient increased, he began to weep, then got mad with himself for doing so, and was seized with fits of fury, followed by maudlin ones. Finally there was extraordinary loquacity, little in harmony with his naturally cold and reserved character. These symptoms lasted three hours.

Regarding this case, it may be said that it is extremely annoying to a patient that he should blurt out unwittingly matters of which he would be very reticent when in his normal condition. But this is not a sufficient reason for us to deprive ourselves of the advantages offered to us by cocaine. Are we not often compelled to search the past life of our patients in order to arrive at our conclusions? Besides anesthetics in general and chloroform in particular are subject to the same reproach. How often do we see patients under the influence of chloroform recount episodes in their lives, and enter into the most private details? Consequently this phenomenon of cerebral excitation must not be regarded as an obstacle to the use of cocaine.

What must make us more circumspect are the convulsions which have occurred with doses less than 0.20. This is an indication that cocaine has not contented itself with exciting the excito-motor centers, but that it is exercising a truly toxic action on those centers. Happily, convulsions are far from being the rule. In the two observations we have made, in the first case the cocaine was injected into a region very rich in blood-vessels, for hemorrhoids; in the second a highly concentrated solution was used. Thus, in both cases, there was essentially rapid absorption, and if we may credit our experience, this is one of the conditions most favorable to the exhibition of convulsive symptoms. We conclude, therefore, that cocaine may be employed in doses of 20 centigrams; however, we shall not recommend this dose in view of the phenomena we have mentioned. It is true that we could easily cite numbers of cases reported by M. Reclus when 20 centigrams have produced no evil symptoms, not even paleness of face.

But beyond this dose we think that the greatest care should be taken in the employment of cocaine. Accidents are multiplied, the symptoms become more and more grave, and although we reach the enormous quantity of 0.75 before finding the first case of death, yet we believe that 0.20 should not be passed.

We shall not discuss the cases of death we have been able to collect, but shall content ourselves with citing them, with a few details.

M. Sims, in the *Medical News*, July 11, 1888, reports the following case: "A man 29 years of age was injected in the urethra with one drachm (nearly 4 grains) of a solution of cocaine at 20 p. c. Hardly was the syringe withdrawn than the patient began to be delirious. The eyes contracted, the pupils dilated, he foamed at the mouth, respiration nearly ceased, and the whole body was shaken by violent convulsions, which increased in violence. Respiration became more and more feeble, and the patient died twenty minutes after the operation. At the autopsy the lungs were found normal, but greatly hyperemiated, heart healthy (right ventricle empty, left filled

with post mortem clots). Abdominal viscera and brain also greatly congested. Mucous membrane of urethra healthy.

The case of Professor Kolomin is too well known for us to enter into details. Cocaine employed for itching of rectum. Injection into rectum of 24 grains. Twenty or thirty minutes afterwards symptoms of poisoning. Loss of consciousness, violent epileptiform convulsions, cessation of respiration. Ether, nitrite of amyl, artificial respiration, bathing with irritating substances, all useless; death in three hours.

Another case is reported in the Bulletin Médical of February 24, 1889.

A house surgeon of University College Hospital had prescribed 3 gr. 25 of cocaine, which he intended himself to inject into the bladder of a man aged 30, suffering from acute cystitis. He neglected to indicate on the prescription how it was to be employed, and the druggist put it up as a potion. The patient swallowed it. At first there were no symptoms, but at the end of half an hour convulsions set in and the patient died.

Finally, the latest case was published by M. Montalti in the Italian Journal *Lo Sperimentali*.

This case is of medico-legal interest, and is that of a woman who swallowed by mistake 5 grammes of a solution of 30 p. c. chlorhydrate of cocaine, that is, 1.50 of the alkaloid. Fifteen minutes after the drug was swallowed, the patient complained of constriction of the throat, and was seized with an intense desire to vomit, without being able to do so. At the same time the sight was affected, the pupils dilated, the lips became cyanotic, pulse thready, convulsions ensued, and death. At the autopsy a small cavity was found in the right lung; the heart was slightly fatty. The brain, meninges, and abdominal viscera were congested. Death, according to the verdict returned in accordance with the expert testimony, was considered as the result of poisoning by cocaine.

These are, in short, the only causes of death we have been able to find in the authorities, for we refuse to recognize the action of cocaine in the observation published by M. Abadie.

We see that a fatal termination is, on the whole, of rare occurrence. If we were to examine the records of chloroform we should find the mortality table very much higher. Besides, cocaine is fatal only in fairly large doses. We must also remark that the evolution of the phenomena depends much on the administration of the drug. Thus, in the observation recorded by M. Montalti, cocaine was taken internally, and absorbed by the stomach; we think that half the dose, administered subcutaneously, would have been fatal. In fact, all depends on the rapidity with which it is absorbed. Our experiments with rabbits demonstrated this fact perfectly. We had fatal results on injecting into the peritoneum 20 centigrams per kilo. of the animal; and 5 centigrams injected into the auricular vein produced a like result. The size of the dose is then somewhat relative, and we might administer with impunity to the stomach a dose that we dare not inject into the cellular tissue.

This distinction is not a useless one, but deserves to be taken into consideration; for a vein may very easily be pricked by the needle, and the solution of cocaine be introduced into the circulation. This must sometimes have happened; and when in the absence of all predisposition a minimum dose of the active substance gives rise to phenomena of exceptional gravity, we should be certainly disposed to believe that the solution had been injected into a vein.

But how to guard against such accidents? This is an easy matter. We need only conform to the method of operation employed by M. Reclus as published by him, and his pupil, Isch Wall, in the *Surgical Review* of Feb. 10, 1889. This method consists in pressing the piston of the syringe as the needle sinks into the tissues. We may perhaps pierce a vein, and introduce a drop of the liquid into the caliber of the vein, but the rest of the solution will certainly be injected into the cellular tissue. We thus avoid introducing the cocaine directly into the circulation and putting it in practically immediate contact with the nervous centers.

The too rapid absorption of this substance presents grave

objections to some writers. Such is the opinion of Professor Wolfler of Groz. Judging from his own statistics, he found that it was possible to inject into the extremities a dose a third greater than into the face. He appears to consider as possible that cocaine introduced in the neighborhood of the brain may reach it in a more immediate manner (by the lymphatic ducts) than by the general circulation.

To avoid as far as possible this too rapid absorption, we must avoid using concentrated solutions. Nothing but good effects will come of so doing.

We know that cocaine produces analgesia by acting directly on the sensory nerve cells; the more attenuated the solution, the more the contact of the liquid with the cells will be multiplied, and yet the total dose of cocaine will be weaker. The 2 p. c. solution seems to us the most desirable. Now, as we have seen, we may use almost with impunity 20 centigrams, so we may inject 10 cubic centimeters of our solution. And what operatory field can we not analgesiate with the contents of 10 Pravaz syringes?

Besides, we think this dose will be rarely necessary, and it would be more prudent not to have recourse to it if we have to do with nervous, anemic, or hysterical patients. If, on account of a peculiar predisposition, accidents should happen, we should inject ether, or, preferably, make the patient inhale two or three drops of nitrite of amyl. In most cases the patient will revive immediately, and recovery will be maintained by caffeine. Should convulsions occur, give chloral. Chloroform and ether are also recommended.

CONCLUSIONS.

Our experiments have confirmed the generally received opinion, that cocaine is less toxic to animals than to man.

In spite of the most minute investigations, we have succeeded in finding in medical literature only *four* cases of fatal poisoning, and it is worthy of note that in these cases the quantity of active substance was always very considerable (0.75; 1.20; 1.20; 1.50).

With a dose of 0.20 by injection and in spite of the apparent gravity of the symptoms, the danger of death has never been real.

We may then use this dose of 0.20, though it will rarely be necessary, for with 0.10 of a 2 p. c. solution, the operatory field anesthetized will be an extensive one.

DIPSOMANIA AS A DEFENSE FOR CRIME.

By JAMES G. KIERNAN, M.D.,

Foreign Associate Member French Medico-Psychological Association; Fellow of the Chicago Academy of Medicine; Lecturer on Forensic Psychiatry, Kent College of Law; Professor of Mental Diseases, Milwaukee Medical College.

Dr. J. P. Gray testified some years ago that¹ " 'Kleptomania' is a word used to express thieving; there is no such insanity. 'Dipsomania,' I call it drunkenness; but I do not call it insanity at all. Pyromania, incendiarism, a crime. All these terms are makeshifts to secure from punishment for crime."

This demagogic evidence at the time represented neither American clinical nor forensic psychiatry. Dr. W. W. Godding,² a pupil of the Ray-Brigham school of American alienists, commenting on this *a priori* cant, feelingly voiced the vast majority of American and European alienists when he remarked: "We cannot deny that the old masters were as keen-sighted observers as ourselves. I dislike to hear drunkenness called dipsomania, as I so often do; but I do not therefore say that dipsomania is only drunkenness. It might improve my standing with the legal fraternity if I should pronounce kleptomania only another name for stealing; but my personal observation convinces me that the insane have sometimes a disposition to steal, which is a direct result of their disease, and for which they are no more accountable than the puerperal maniac is for her oaths."

Judge Doe, of the New Hampshire Supreme Court, affirmed a similar doctrine to that of Dr. Godding in the case of

¹ Trial of Guiteau, Part II, p. 1674.

² Two Hard Cases.

the State vs. Pike. The prisoner being indicted for the murder of one Brown, his counsel claimed that he was "irresponsible by reason of a species of insanity called dipsomania." The lower court instructed the jury that "if they found that the prisoner killed Brown in a manner that would be criminal and unlawful if he was sane, their verdict should be 'Not guilty by reason of insanity,' if the killing was the offspring or product of mental disease in the defendant; that neither delusion, nor knowledge of right and wrong, nor design or cunning in planning and executing the killing and escaping or avoiding detection, nor ability to recognize acquaintances or to labor or transact business or manage affairs, is, as a matter of law, a test of mental disease; but that all symptoms and all tests of mental disease are purely matters of fact to be determined by the jury; that whether there is such a mental disease as dipsomania, and whether defendant had that disease, and whether the killing of Brown was the product of such disease, were questions of fact for the jury." This instruction Judge Doe, in a decision replete with lucid grace of diction, clear logic, and scientific precision, affirmed.¹

This plea was practically a successful one in the case of the People vs. O'Brien, recently tried in Chicago. The chief forensic points involved, and the general history of the case so far as the defense of dipsomania is concerned, are excellently summed up in the following hypothetical case:

"Take a man whose mother was considered insane by her son-in-law and grandson; whose father was a periodical drunkard; whose sister was insane, and was an inmate of an insane hospital; whose other sister was peculiar, and, in the language of a layman, a 'little off'; whose maternal aunt is peculiar, and considered by at least two of her relatives insane; whose maternal first cousin is an idiot; and whose nephew has periods of seeming unconsciousness.

"Assume that this man when sixteen years old worked all night without necessity, and that, when asked in the morning

¹ Lawson's Criminal Defenses: Insanity and Drunkenness.

why he did this, was apparently unable to give either a coherent account of what he did or why he did it. That in mid-winter, when he was about sixteen years of age, he caused the machine knives to be ground to cut grass, although there was no grass to be cut; that on another occasion he ordered cows driven out of an orchard lest they eat the apples, when there were no apples there and snow was on the ground. That this man, now at the age of about 38 years, for a known period of six years immediately prior to the present time has had brief periods when he became morose, restless, gloomy, and absent-minded, and the expression of his eyes and face changed; that then follow violent drinking spells, lasting from four to ten days; that he then drinks intoxicating liquor, with or without company, in great quantities. During these drinking spells he is suspicious, extremely quarrelsome, boisterous, rough, and coarse in manner, and does not discriminate in his violence between friend and foe. That these periods terminate in prostrating sickness; that on recovering from these drinking spells he is pale and looks as though he had passed through a fit of sickness; that between these drinking spells there are irregular intervals of from four to six weeks when he is quiet in manner, neither profane nor vulgar in speech, attentive to his saloon business, and will often refuse intoxicating liquors; that just precedent to, during, and immediately after his drinking spells, his manner is in such marked contrast with the sober periods that he has been thought to be insane and crazy by several persons well acquainted with him. That his conduct during these drinking spells is marked by strange extravagances. On one occasion he took a bear in a buggy for a drive. On another occasion, on Christmas day, in one of his saloons, then well patronized, he ordered the customers and bartender out and locked the place up, and was seemingly unable to give any good reason therefor. On another occasion he shot at a colored man twice, in order, as he stated to the bystanders, "to show them how to kill a nigger." On another occasion he wished to erect a tank in the back yard and to hire a high

dive to dive off the adjacent building. That, about seven years ago he became acquainted with a married woman who had left her husband in California and was visiting in Chicago, and from that time until about the month of May, 1895, he lived with said woman in open adultery, and in said May (while in one of said drinking spells) went with her to the city of Milwaukee, where he was married to her by a justice of the peace: that from that time until November 9th, with the exception of a short interval, he lived with her as his wife: that on or about said November 9th she left him, and did not again live with him; that during the month of September, for a period of about ten days, he drank excessively and had an attack in which he was found wandering dazed about the hall of a hotel between 2 and 3 o'clock in the morning; that at the end thereof he remained sober, attending to his usual vocation as a saloonkeeper until on or about November 9th, when one of his drinking spells began, continuing until his arrest on November 19, 1895; that during Thursday, Friday, Saturday, Sunday, and Monday night, he was very restless and unable to sleep; that frequently during these times he would go about his room with a frightened look, and try the doors and windows, apparently to see that they were locked and fastened, and while so doing would carry a revolver in his hand, and, during the time that he was lying in bed, constantly kept said revolver within his reach. That he, some hours before the homicide, drank much intoxicating liquor; that about 1 o'clock of the day of the homicide, at a messenger service he asked for a messenger boy, and sent a note to his wife—the boy failed to find her, and did not deliver the message; that still later he sent another note, which was not delivered; that afterwards, at his saloon, he drank more liquor; that at or about 4 o'clock of said day he left his saloon and went to where his wife then was with her sister, and rang the bell of the flat adjacent to the door of the flat where his wife was, whereupon his wife, accompanied by her sister, went to the door of their apartments, opened it, and said, "Hello, Brother," and he replied, "Don't touch me." That he had his

hand on his right overcoat pocket; that his wife went ahead, and he followed her to the front parlor; that she said, "Here are those keys;" that he said, "When did you stay with that white-livered — — —?" that she replied, "I never did;" that he then said, "Tell me or I will kill you;" that she said, "I never did;" that then two shots were heard, when the sister ran down to the street crying for help, whereupon certain persons from the street visited said parlor and found the wife lying dead from the effects of two pistol wounds; that one of the windows in the room was broken apparently by the revolver, from which the said fatal shots were fired, being thrown through it; that he, after said homicide, went down the back stairs, through the alley, to the rear of his saloon, and drank liquor; that he was in his saloon when the policeman entered it and said "We want you," and at the same time the officer placed his hand upon him and he replied, "What do you want me for?" and the policeman replied, "I guess you know." That he was then taken without resistance in a patrol wagon to a neighboring police station; that when received at the police station he was searched and some articles of personal property taken from him, among them a diamond pin: that when that was removed he said to the officer in charge, "It is a valuable pin—take good care of it—it is worth \$150." That when asked, "Where is the gun you used?" he replied, "I have used no gun." That then he asked to wash himself and was shown to the wash-room, where he washed his face and hands: that after doing so he looked at himself in the mirror and while so doing stroked his moustache. On the following morning, on his way to the inquest, he asked where he was being taken, and stated to the officer in charge that he wanted a continuance.

This evidence was admitted by Drs. Harriet C. B. Alexander, H. M. Bannister, J. A. Benson, H. N. Moyer, J. C. Spray, and myself, to be sufficient to establish the existence of dipsomania. This psychosis was defined by all these physicians as a periodical insanity, characterized by an irresistible craving for alcohol or narcotics during certain periods, preceded and

followed by mental change in the individual affected. These periods are intermingled with periods of sobriety. The alcoholic element was regarded by all as a mere manifestation determined at the outset of the periods. The victim of dipsomania, in the opinion of all, would be insane during the drinking periods even if alcohol were not used. The position of the defense on the status of dipsomania in nosology was essentially that of Krafft-Ebing, Ritti, Spitzka, Kraepelin, and Schuele. The demarcation made by the experts for the defense between dipsomania and drunkenness was essentially that of Lagrain,¹ thus given recently:

An alcoholic patient becomes insane because he drinks; a dipsomaniac is insane before he commences to drink. Dipsomania may be complicated by alcoholic symptoms, but alcoholism never leads to dipsomania. Alcoholism is an intoxication which has as its cause alcohol; dipsomania has its cause in a defective mental condition, and alcohol is but a secondary factor, which may be replaced by any other poison, leaving to the syndrome all its psychological characters. Dipsomania proceeds in paroxysmal attacks, and the appetite for strong drink is absent during the intervals between the attacks. Alcoholism has no definite course—its development depends directly upon the more or less considerable or prolonged consumption of alcohol.

The hypothetical case, it should here be stated, included, in accordance with the usual system of Judge Russel M. Wing, the chief counsel for the defense, just sufficient evidence to justify the diagnosis of the mental state, of the amount of will power, and of the specific psychosis. The case as presented to the jury contained other factors less incriminatory to the accused and other evidence more strongly demonstrating defective heredity and dipsomania. The State pursued the opposite policy: all evidence implying insanity was omitted from its hypothetical case; it presented also a mutilated copy of the hypothetical case of the defense to its experts. With two excep-

¹ Tuke's Psychological Dictionary.

tions, the experts for the defense just named were not subjected to much cross-examination. Drs. Archibald Church, Sanger Brown, and Richard Dewey appeared for the State. They answered that the subject of the hypothetical case of the State was sane, as every expert for the defense would have done. They also stated that the hypothetical case of the defense had been presented to them and that the subject of it was sane. On cross-examination, Dr. Church gave the same symptoms of dipsomania as those presented by the hypothetical case of the defense, whereupon it was presented to him in its entirety. To it, Dr. Church answered that the person of that hypothetical case was insane with the type of insanity called dipsomania; that his knowledge of right and wrong was doubtful, and that he was the victim of an irresistible impulse. Drs. Sanger, Brown, and Dewey substantially agreed with Dr. Church on cross-examination. The position of all three as to the nosological status of dipsomania was identical with that of the experts for the defense. The position of Drs. Dewey and Brown as to the individual of the hypothetical case of the defense was less emphatically expressed, but was practically identical with that of Dr. Church: the results of whose cross-examination, naturally under the circumstances, strongly influenced the jury. No examination of the accused was made by the experts on either side. The jury was left to decide as to the validity of the two hypothetical cases. On the first ballot the jury stood six for hanging to six for acquittal on the ground of insanity; on the second ballot five for hanging to seven for acquittal on the ground of insanity; the third ballot resulted in a vote of eight for acquittal on the ground of insanity. The jury then agreed on a verdict acquitting the accused on the ground of insanity, conditional on the Court committing the accused to an insane hospital as a still dangerous lunatic. The Court declined to assume such powers, although permitted to do so by the Illinois criminal code. The jury then attempted to find the accused guilty of manslaughter so that he could reach an insane hospital through a penitentiary. Four, however, still

sturdily voted for acquittal on the ground of insanity. The jury was then discharged, unable to agree.

The jury was clearly convinced that dipsomania was a well-defined form of insanity, and that the subject of it was so dangerous as to require permanent insane-hospital treatment. As there was a "hanging" epidemic among juries just precedent to this trial, it must be obvious that even under disadvantageous circumstances the seemingly dangerous defense of dipsomania can be successfully made scientifically before an intelligent jury. Furthermore, the case shows that the pure hypothetical method of presenting evidence is far more just and clear to a jury than when combined with the fact of examination. Examination of an accused person often is a wild absurdity unless the physicians have the clinical history. In court the clinical history cannot be used, as it is practically hearsay evidence. The jury is hence confused, since a conscientious expert, used to legal procedures, will, in accordance with his oath, exclude all but the results of his examination, while the omniscient professional swearer will, in defiance of all laws of evidence, testify to the results of hearsay as facts resultant on examination. Fact witnesses and opinion witnesses should hence, in the interests of justice, be separated. This the Chicago Academy of Medicine, the Chicago Medico-Legal, Pathological, and Medical Societies tried to do by a bill presented to the last Illinois Legislature. This bill, as finally passed, was so emasculated in the interest of certain omniscient medical politicians, the vampires of the courts, as to destroy its essential features and convert it into a new piece of patronage machinery for judges.

I have not dwelt on the time-dishonored mob-law right-and-wrong test, since it, under the decision in the case of *Hopps vs. The People*, can only be used by trick and device of the State's attorney in Illinois.

Certain clinical data are lacking in the case which, from the psychiatric standpoint are of especial interest. The aimless insane performances during puberty suggest that cerebral au-

tomatism, which occurs in periodical types and affiliates these to epileptic mental manifestations. It would be of interest to know whether these performances passed at a later date, as seems probable, into the rather suggestive acts of the "drinking spells," and hence were an expression of a degenerative defect which would be accentuated into irregular periodicity after the age of twenty-five (the expiration of puberty), but masked by alcohol. It has been claimed by Laségue and others that dipsomaniacs never manifest the symptoms of alcoholism. This clinical criterion, as Legrain points out, is erroneous, since many cases are on record where dipsomaniacs, even if their attacks did not last a long time, showed symptoms of alcoholic poisoning—excitement, tremor, delusions, nightmares, hallucinations, etc. That at the expiration of some of the "drinking spells," alcoholic mental states were present, seems clear from the hypothetical case above cited, which also suggests that the individual at the time of the homicide was in a most forensically dubious alcoholic mental state, which, according to testimony of those present at the coroner's inquest, lasted even till then, days after. This testimony was omitted from the hypothetical case of the defense, intentionally, on the system already described.

Identity of dipsomania and voluntary drunkenness was claimed by the State, but this claim was upset by its own experts. Dr. Sanger Brown, for example, took the position that the voluntary drunkard is a sane man who drinks, while the dipsomaniac is an insane man who drinks.

Dr. Harriet C. B. Alexander, an expert for the defense, took the position, on cross-examination, that even during the sober period the legal responsibility of the dipsomaniac was dubious, and in the event of crime, the burden of proof of sanity rested upon the State. This position, from the ordinary legal standpoint of responsibility, is essentially sound. It is in full accord with that recent decision of Judge Harlan of the United States Supreme Court, which wiped out of existence the demagogic decisions of the State Supreme Courts, which

have held that the prisoner must prove his insanity beyond a reasonable doubt—decision inconsistent with abstract justice and anarchically inconsistent with that fundamental principle of the criminal law of English-speaking countries, that every one must be presumed to be innocent until proven guilty.

The State's attorney cross-examined Dr. Alexander and myself as to the forensic bearing of the language used at the time of the homicide on the question of will-power and premeditation. The answer was that taken alone it was purely negative in value, and taken in conjunction with the other factors of the hypothetical case it had no significance; corroborated by other facts bearing on the existence of will-power, it might be of value. This position was based on the fact that delusional threats and suspicions are often uttered during alcoholic, post-periodic, and epileptic mental states of which the utterer has, at the best, but a dazed consciousness. The answer was further based on the broad scientific principle that intelligent acts do not legally or medically offset distinct evidence of insanity. Dr. Alexander was cross-examined most at length, and myself next, although I could hardly call it cross-examination. The policy of the State in this particular was due to the sensible plan of avoiding errors in the record.

The difficulty encountered by the jury in their disposal of the case must be felt by every thinking alienist. Some act embodying a modification of the English "commitment pending Her Majesty's pleasure," suitable to other English-speaking countries, seems desirable. Another desideratum in the interests of justice is a modification of State statutes which put a premium on judicial murder by paying fees for conviction to State's attorneys.

INTOXICATION AND INSANITY.

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I will be glad to limit the meaning of the word intoxication in this paper to the injurious effects on the cerebrum of toxic agents present in the circulation. Toxic agents in the blood, of course, have their chemic effects upon other structures, but in the ordinary interpretation of the word the symptoms of intoxication are those that belong to the brain. I will use the word in that sense.

This organ is exceedingly sensitive to the action of certain agents: so much so, in certain instances, that it seems to be the only organ affected, or affected so far in advance of others that their disturbance is not appreciated. The exceedingly soft colloid character of the functioning central parts of its nerve cells and fibers render them the most sensitive of all the structures of the body to some agents; and their excessively rapid functional motion is most delicately disturbed.

The nervous system, indeed, the whole body, may be divided into sensating and non-sensating structure. This is only a fact in a comparative sense, because there are no defined limits of the property of sensibility anywhere in the living world. The broad generalization is commonly admitted, that all *living* structures are more or less sensitive. In biology there is an advance of grade in this property as we ascend in the classification of species. Within the body of man the property is more decided and distinct in some organs and parts than in others. The nerve centers particularly have it as their function, and, among them, it improves in delicacy and distinctness until we reach the cerebrum, where its most refined excellence is called consciousness. In man, so "central-

ized" is the faculty that all conscious action may be said to be cerebral. Sensibility in the human being is carried to such a degree of centralization that the cerebrum is practically the only sensorium. It is the organ of all "feeling," the physiologic *ego*. The recognition of this as a physiologic fact will explain many phenomena of the brain; in that of intoxication it gives ready explanation to many of the symptoms produced.

In intoxication the conscious feeling of the man is affected and subjectively interests him most. His "feelings" are altered, and he is concerned favorably or unfavorably as he is comforted or discomforted.

In addition to being physiologically the conscious organ, the brain is also the organ that adjusts the entirety we call "the man" to his environment. The other nerve centers have also adjustment as their function, but they adjust the organs of the body internally to each other. The brain adjusts externally.

The comparative excellence of structure and function of one man's brain makes him excellent in his external activities, and the comparative weakness or defectiveness of another man's makes him less excellent or competent. We judge of the integrity and functional capacity of this organ by the *emissions* it makes, which in the aggregate go to make up the exhibitions of the man's intellectual capacity and constitute what we call his conduct and character.

We judge, therefore, of the effect of a toxin and of the degree of intoxication by the man's recital of his own "subjective" feelings; and we judge "objectively" by the "symptoms" shown in his brain's emissions. The symptoms of intoxication have been discussed in medicine since medicine first began. Because it relates seriously to the transcendently most important organ in the body, it is a live question.

There are a great many agents that act intoxicatingly. Some enter the circulation from within the body, are produced there; others are introduced from without.

We hear much said now-a-days about *auto-intoxication*, by which is meant the intoxication that is produced by toxins produced within the body. The unqualified word intoxication popularly means the series of symptoms produced by alcohol, or some other such agent, introduced from without.

The word *insanity* is more properly a popular or a legal term than a medical one, which fact occasions the trouble often found by doctors in giving a medical definition to it for legal use. Legally, insanity relates to conduct alone, and not especially to the brain condition that produces it. The gradually increasing popular recognition of the fact, however, that all conduct, good and bad, excellent and defective, depends upon brain condition, has led, of late years, more and more to the popular and legal reference of all cases of defective conduct to the medical profession, in the same way other defective functions are referred to them.

Properly, because it is a legal term, insanity simply means that the person has reached such a *degree* of aberrant conduct that he has to be supported, controlled, or restrained by others, or by the state — he is disabled to that degree. It is always a question of degree and a matter of opinion. The doctor's opinion is taken as of most value.

Insanity indicates an *extreme* degree of cerebral defectiveness, which implies that there are other grades of impairment above the insane level. This is a fact open to every-day verification, and it is a fact particularly related to the subject before us. Intoxication can be shown to be the cause of different grades of defective conduct ranging all the way upward from the insane level.

Cerebral intoxication varies in the person according to two factors or sets of factors: the first is the character of the agent and the amount of it in the blood; the second is the peculiarity of the particular brain, peculiar in the way of being more or less sensitive to the particular agent, or peculiar in the way of being inherently defective, which abnormality is rendered more apparent by the action of the toxin. In

other words, intoxication varies according to the toxin and the dosage, and according to the abnormality or idiosyncrasy of the particular brain.

Subjectively considered, by the man himself, the toxin produces discomfort or comfort. This is the direction in which he first considers it or principally considers it. In the action of many, probably of most, toxins, the sentient result is that of less conscious activity, which means less sensation, or a more comfortable state.

Consciousness occurs only when there is functional action going on in the cerebrum; when there is no cellular motion, there is no consciousness; this occurs naturally in sleep and artificially in anesthesia; when the brain is partially rendered less capable of functioning by the chemic action of a drug, there is diminished sensibility — more comfort. Comfort is a negative condition, meaning no discomfort. Discomfort is a constant or most frequent condition of many brains to whom all cerebral or bodily effort is more or less painful. Cerebral hyperesthesia is a very frequent condition as a part of neurasthenia or cerebrasthenia. In this condition the oversensitiveness, in time, is increased by the injurious or chemic effect of the toxin. If the agent simply stiffen or slightly harden the delicate structures so as to prevent or to make less their functional activity, it produces less consciousness — more comfort. This varies with the character of the toxin, but in time produces hyperesthesia or neurasthenia.

In intoxication there is more or less a sense of incapacity, dullness, and confusion; sometimes, a more comfortable state because there is lessened sensibility. Sometimes, on the other hand, cerebral effort or activity produces more discomfort, so that, as a sequel to continued intoxication, comes hypersensitiveness with irascibility, irritability, forgetfulness, and worry; all exhibits of cerebral impairment. If the person is naturally erratic or peculiar or hypersensitive, he is rendered more so. A cerebrum tending already toward hypochondria, melancholia, mania, or paranoia, is more inclined that way.

In short, intoxication always injures the cerebrum for the time being, sometimes permanently, and in certain persons increases original defectiveness to the permanency and grade that is called insanity.

Toxins, such as ptomaines, leucomains, and other toxic albuminoids, arise from the disintegrations of disease in the system; and there are also natural waste products which, if retained in the circulation, prove highly toxic, such, for instance, as are eliminated by the kidneys, the liver, the bowels, and the lungs. Infection comes into the circulation from many directions; the scavenging of the system is most important work on that account.

Microbic disintegration of cerebral structure proper is not often seen. Inflammation of tubercular bacilli occurs in the meninges, and other meningeal inflammations are said to be microbic; cerebral syphilis may be this. Upon the true functioning structures of the cerebrum, however, microbes most often have no direct, but indirect effect by the toxins they produce elsewhere.

Diseases affecting the general system, like the exanthems, fill the circulation with toxins. Some brains are very sensitive under these conditions, and delirium is a consequence; there is always more or less confusion, dullness, listlessness, and incapacity, as a consequence of such intoxication. In the extreme of life, *in articulo mortis*, the complete arrest of cerebration from this cause, in a large number of cases, removes the pain and distress of dying.

Cerebral toxicity, from disease in different organs of the body, varies with the organ. Diseases of those organs whose function it is to remove waste toxic material are always serious to the brain. The kidneys, liver, alimentary canal, lungs, and skin are organs of this character. We often have the unre- moved waste toxins of the system in the blood added to those directly produced by the inflammatory disease of the excretory organ. Acute rapid disease of such organs often produces delirium; more chronic disease for this reason sometimes gradu-

ally induces the more permanent condition of insanity. The delirium and the insanity indicate, usually, brains already sensitive, weak, and defective.

In an insane hospital, where the worst cases of defective cerebra are found, it is very easy to note the effects of auto-intoxication. The part the digestive tract plays in the rôle of insanity is often very evident. In conditions of certain forms of dyspepsia, particularly in conditions of constipation or torpidity, auto-intoxication can be shown, and its relief demonstrated by removing the toxin by cathartics and alimentary disinfection. Stercoremia, copremnia, and the common condition, "biliousness," afford instances of it.

A large proportion of the insane suffer from some form of nephritis, and to it can be traced many of their more insane periods or "spells," when the already weak or defective cerebrum is made more aberrant by uro-toxicosis.

Toxemia in women, during gestation, and after their confinement, during uterine involution, especially if there is sepsis, and during lactation, is by no means an uncommon thing. Puerperal mania or insanity in some form, is a result in extreme cases. It is a rare thing that the parturient woman shows no signs of intoxication in some of its milder forms.

A long chapter could be written on auto-intoxication. Literature on this subject is getting more and more abundant. I have said enough to show its importance as it relates to insanity.

Intoxication by agents introduced from without is a frequent occurrence, and, as it relates to brain hygiene, is little appreciated.

As physicians, we would be very much handicapped in our practice if we did not have cerebral toxins among our medicines. They constitute a very popular line of drugs: popular with the doctor, because popular with his patient. All anodynes and anesthetics are of this class. Most frequently the urgent symptom to be relieved in our patient is pain or discomfort. Pain is a brain condition. If disturbed or dis-

tegrating action in distal parts cannot be conveyed to the sensating brain by nerve lines that we have rendered incapable of transmitting by our toxin, there is no sense of it; or, if we render the cerebrum unconscious by our toxin, we accomplish the same object, there is no pain. We accomplish artificial anesthesia with such an agent as chloroform by a complete suspension of cerebral functions, while the functions of the lower centers, which adjust internal actions, are left to continue. If we push the anesthetic farther we suspend them also, fatally to our patient.

Toxins nowadays are known also to have injurious effects upon peripheral nerves. Peripheral neuritis is now ascribed most often to this cause, in conjunction with exposure, fatigue, or some such condition which renders these nerves more sensitive to the toxin. Peripheral pains, such as make so prominent a symptom in grippe and dengue, probably have this source — headaches, sometimes.

I believe it is true, under certain conditions or with some toxins, toxicity can be of the peripheral nerves at the same time and by the same agent that the cerebrum is affected. The difference between an anodyne and an anesthetic may be this: the one affects more generally the nervous system, the other principally the cerebrum. This distinction is necessarily not well drawn. It is a good hypothesis, however, that anodyne or anesthetic effect in the relief of pain or discomfort occurs by the arrest of the function of the transition of motion along nerve lines, or most frequently, by the arrest of conscious motion in the cerebrum. The anodyne, cocaine, administered hypodermically, hardens chemically the nerve lines leaving the locality, so there is no transition of motion to the sensorium from the part, and no pain; though later, we have its anodyne effect on the cerebrum, obtruding in a general way the sense of disintegrating action or pain.

The effects of alcohol, on the other hand, generally begin in the cerebrum; though we do have local anesthesia in the stomach, and in time, in some cases, neuritis in the periphery

as an effect of it. We may correctly suppose that whenever we arrest or abate pain with a toxic agent, we do it most often in the brain by hardening the axis-cylinders of nerve lines, or the central part of nerve cells, in this way preventing or lessening their functional motion. A good deal is being written to show the changes in the nerve cells of the cortex, in the way of emutation, diminution in size, and changes in length and shape of processes by the continued use of certain toxins. Degeneracy of axis-cylinders in nerve lines elsewhere is also reported. The cerebrum (the sensorium) is the most important organ that suffers; it is impaired by the excessive or the continued use of anodynes and anesthetics, in numbers of instances.

In many persons the effect of the continued use of such agents on their peculiarly susceptible or defective cerebra is so injurious as to increase the original condition of over-sensitiveness to neurasthenia, or to carry their original defectiveness or weakness to the stage of permanency and degree called insanity. The continued use of such agents as luxuries, because of the artificial comfort they give, works widespread harm. The popular and extensive use of alcohol and nicotin as luxuries, not to mention other toxins, leads to increase of cerebral and neurotic defectiveness and disease and, in some, induces the extreme cerebral condition of insanity. A narcomaniac or an inebriate, in the large majority of cases, has had an original defect of brain, preceding his drink habit, that has been rendered more decided by repeated intoxication. The brain is a very much abused organ, and one sorely omitted in our private and public sanitation. In the use of such agents as luxuries, the brain effect is the one sought after, and in proportion to the amount taken and the length of time, injury is done. Intoxication, owing to inherent peculiarities, is more injurious to some brains than to others.

ON THE EFFECT OF ACUTE ALCOHOL POISONING
ON SIMPLE PSYCHICAL PROCESSES.

From The Medical Pioneer.

Among the numerous, interesting, and valuable papers presented at the International Congress against the misuse of alcoholic liquors in Basle, last year, there was none more important from a medical point of view than that of Dr. C. Fürer, assistant in the Clinic of Psychology, Leidelberg, having the above title. This paper has just been published in full in the printed report of the Congress, and we shall now give an account of it. It gives the results of an inquiry into the effects of a single dose of alcohol, varying in quantity, but fairly large and of the kind and duration of the after effects of a single moderate "excess" of alcohol. The experiments of which the principal results are here given have been partly previously published by Professor Kraepelin, and are partly the outcome of Dr. Fürer's own experiments.

All articles of food or drink capable of affecting the mental processes were rejected during the experiments, and control experiments without alcohol were always instituted.

One series of experiments consisted of determining the time between the giving of a signal (saying "a") and the announcement that it had been heard, this being measured by a clock, which was set in motion on giving the signal and stopped by the person experimented on. (This gave the so-called "simple reaction.") In the next series there were two signals (saying "a" or "o"), the one to be acknowledged by the right hand, the other by the left (decision reaction). The average of 100 experiments was taken and, in the case of the decision reaction, the proportion of mistakes.

In a series of experiments on association of words, the act of opening the lips to say the word set an electric current in motion, and the response set free another, and the time was measured as before.

In experiments to estimate time, the person sat with shut eyes, and concentrated his attention on intervals of time (30 seconds), which were marked by calling the word "now." Then twenty-five times running he had to estimate the time between two such calls, which was checked by a watch.

Another series of experiments was made on the action of alcohol on muscular activity and its checking of muscular fatigue. Trials were made with the ordinary hand dynamometer, and also with an ergograph, after the model of that of Mosso. A finger was hooked in a loop of string which passed over a pulley and lifted a lever when the finger was bent, and this lever marked a line on a revolving drum. The rest of the hand was fixed, and the finger was bent at regular intervals following the movement of a metronome.

Kraepelin's experiments were made with varying doses of alcohol. The lowest dose was $7\frac{1}{2}$ grammes (about two fluid drachms) and the highest 60 grammes (about two fluid ounces) of alcohol, equal to from one-fifth to two litres of 4 per cent. Munich beer. The result was that for all the psychological processes investigated (simple and decision reactions, association experiments, addition, learning by heart and reading, dynamometer trials and estimations of time), with doses of from 30 to 45 grammes (1 to $1\frac{1}{2}$ fl. oz.) of alcohol ($\frac{3}{4}$ to 1 litre of beer or $\frac{1}{2}$ to $\frac{3}{4}$ litre of light wine) a more or less increased difficulty or embarrassment was shown. The duration of this difficulty increased with the size of the dose, with certain variations which depended on the temporary condition or idiosyncrasy of the person experimented on. This difficulty continued after each dose from three-quarters of an hour to several hours.

The results with regard to these processes separately was that, with the simple reaction and reaction of decision there was at first a state of excitement, inasmuch as the time of re-

action was shorter than under normal conditions. But this excitement lasted only a short time, giving place to a notable depression. With larger doses the depression came on at once as a rule, or the shortening of time was but very brief. This showed that alcohol, as was before known, possessed the property of producing a quickening of movement. This has been commonly observed in company after the use of intoxicating drinks; the inclination shows itself in individuals to gesticulate and respond generally to various stimuli, while afterwards a gradually increasing slowness of movement takes place.

But the experiment also shows that after even such small quantities as $7\frac{1}{2}$ grammes (2 fluid drachms) the appearance of paralysis (to which we must attribute the lengthening of the reaction-line) is inevitable, and that at the best an improvement can only be said to occur at the very commencement.

In the association experiments we also find a preliminary stimulation in that the time taken for establishing the association is a little shorter. But yet this by no means appears to be an improvement of power, but rather the reverse, if the character of the associations is taken into consideration. For instance, the external associations, specially rhyme, improve at the expense of the internal ones. The external associations, however, represent those of least value. We here find also that experiment is in accordance with the facts observed in common life. We can readily place the tendency to make poor jokes under the influence of alcohol on the level of association of rhyme, as in both cases it happens that a connection of thoughts, or, properly speaking, of words only, is less due to thought than to external associations. The increased output of the reflex-motor processes (speech) caused at first by alcohol plays a part here also, and this can be explained by the fact that certain inhibitions are removed which, in normal circumstances, would prevent the expression of less worthy associations. Besides this paralysis of inhibition we can also recognize a paralysis of the higher psychological powers in so far that while there is a freer entrance of associations of a lower de-

gree, based, for instance, on resemblance of sound, higher associations depending on ideas, at least of the first rank, are found to be impossible. During the succeeding depression the deterioration continues, and the times are longer, and this is also in accordance with general experience.

The same preliminary improvement and subsequent deterioration is found in the *reading experiments*, in which they had to read as much as possible in a certain time without regard to the sense: the number of syllables was greater at first and afterwards less.

A combination of reflex processes and mental work in a narrow sense was found in the experiment on *learning by heart*. At first we also find here as a rule a facilitation of repetition and learning, although in some of the subjects there was a diminution of the rapidity of learning from the beginning. With doses of 30 grammes (about 1 fluid ounce) of alcohol diminution as a rule sets in from the first. The repetition consisted chiefly of the motor element of speech.

The *addition* experiments showed that, just as with the association experiments (commencing with 20 grammes [about 5 drachms] of alcohol) there was a deterioration, inasmuch as for this kind of mental work the time required proved considerably longer than under normal conditions and the amount of work done in a given time was less.

The experiments which aimed at the investigation of the performance of work by the dynamometer and ergograph showed that there was a temporary facilitation, demonstrated by a higher mark of the pointer of the dynamometer and a higher point of the ergograph curve, but that the fatigue of the muscle set in very soon: the curve of the ergograph soon fell below the normal level. The curve is indeed longer than that furnished under, for example, the influence of tea, yet close investigation shows clearly that the increase of work performed is only apparent. The last part of the curve is only a very slight elevation. The time during which the muscle would work was indeed longer, but the total amount of work

does not correspond to the length of time it took; this amount under alcohol is decidedly less. The conclusion is that under the influence of alcohol the muscle will work longer and do less. This throws an interesting light on the popular idea that the use of alcohol facilitates bodily work. Experiment shows clearly how the subjective sensation of increased corporeal power comes about. The individual under the influence of alcohol is able to do some work for a longer time, but the diminished value of the work is not evident to him, the fatigue is regarded as coming on normally while it is nevertheless in consequence of a special paralyzing effect of alcohol. The fatigue which comes on without alcohol a little earlier leads to an earlier rest and then the work is resumed with really fresh power, and in the same period more is done, both in quantity and quality, than under alcohol.

In the experiments on the estimation of time symptoms of fatigue set in earlier under the influence of alcohol.

Summing up these results we find most decidedly that even with very small doses ($7\frac{1}{2}$ grammes or 2 fl. drachms) the weakening or paralyzing action of alcohol sets in in the course of each experiment, and that only an improvement of the motor process is experienced, but that this improvement is very doubtful, as the quality of the work is not so good. The quantity of alcohol which *perhaps* may exercise a purely stimulating effect on the bodily functions, if such a quantity can after all be defined, must be very small, far smaller than can come in question in practical life, as a commonly taken quantity of alcohol. It must be less than $7\frac{1}{2}$ grammes of alcohol, and in one-fifth of a litre (about a quarter of a pint) of Munich beer and one-tenth litre of white wine (one wineglassful) there is more than this quantity. With the use of such surely trifling quantities of spirituous liquors, the paralyzing action must be taken into the bargain.

Turning now to the results of the experiments on intoxication. It is expressly noted that in every case there was only slight intoxication, so little that in most its existence was only

noticeable to the subject of the experiment, and not at all to the bystanders. There were never any after-symptoms. During the experiment there was never the feeling that it could affect his work. This subjective feeling of the resultlessness of the experiment was confirmed from another side. The experiments were so arranged that a normal experiment of the same length corresponded to each trial of intoxication and embraced decision, association, learning by heart, and addition. There were, in the course of one such group of experiments, 3,600 trials of decision, about 30,000 numbers added and about 19,000 numbers learnt by heart. A very temperate life was lived, the use of tea, coffee, tobacco, and other things which might affect the nerves, was abandoned and all fatigue avoided. All the experiments gave in the main the same results. Individual differences never showed that any of the works performed was improved.

The following tables make clear the conclusions of the text:

TABLE I. — DECISIONS.

| Normal Condition. | | | | | | | |
|-------------------|-----------|-----|-----|-----|-----|-----|-----|
| 1st day. | | | | | | | |
| 13th shortest, | . . . | 313 | 363 | 358 | 306 | 336 | 346 |
| Mean, | | 398 | 418 | 421 | 374 | 409 | 412 |
| 13th longest, | | 475 | 477 | 479 | 473 | 504 | 474 |
| Spread, | | 162 | 114 | 121 | 167 | 168 | 128 |
| Mistakes, % | | 5 | 1 | 1 | 4 | 6 | 5 |
| 2d day. | | | | | | | |
| 13th shortest, | | 345 | 354 | 340 | 329 | 307 | 335 |
| Mean, | | 419 | 446 | 419 | 418 | 366 | 411 |
| 13th longest, | | 499 | 502 | 493 | 485 | 449 | 489 |
| Spread, | | 154 | 148 | 153 | 156 | 142 | 154 |
| Mistakes, % | | 2 | 1 | 3 | 4 | 2 | 7 |

| | 3d day. | | | | | |
|--------------------------|---------|-----|-----|-----|-----|-----|
| 13th shortest, | 362 | 354 | 360 | 317 | 335 | 376 |
| Mean, | 428 | 420 | 471 | 390 | 404 | 460 |
| 13th longest, | 499 | 506 | 556 | 465 | 474 | 528 |
| Spread, | 137 | 152 | 196 | 148 | 139 | 152 |
| Mistakes, % | 8 | 3 | 1 | 4 | 6 | 3 |

After Morning Intoxication.

| | 1st day. | | | | | |
|--------------------------|----------|-----|-----|-----|-----|-----|
| 13th shortest, | 348 | 221 | 221 | 271 | 240 | 264 |
| Mean, | 406 | 380 | 400 | 428 | 364 | 400 |
| 13th longest, | 469 | 476 | 540 | 516 | 463 | 482 |
| Spread, | 121 | 255 | 219 | 245 | 223 | 218 |
| Mistakes, % | 1 | 16 | 18 | 11 | 19 | 19 |

| | 2d day. | | | | | |
|--------------------------|---------|-----|-----|-----|-----|-----|
| 13th shortest, | 277 | 294 | 323 | 333 | 299 | 280 |
| Mean, | 378 | 408 | 405 | 434 | 399 | 396 |
| 13th longest, | 478 | 507 | 512 | 540 | 510 | 500 |
| Spread, | 201 | 213 | 189 | 207 | 211 | 220 |
| Mistakes, % | 16 | 10 | 22 | 18 | 18 | 16 |

| | 3d day. | | | | | |
|--------------------------|---------|-----|-----|-----|-----|-----|
| 13th shortest, | 337 | 331 | 264 | 231 | 248 | 258 |
| Mean, | 406 | 396 | 314 | 293 | 300 | 304 |
| 13th longest, | 485 | 472 | 377 | 354 | 362 | 364 |
| Spread, | 148 | 141 | 113 | 123 | 114 | 106 |
| Mistakes, % | 8 | 2 | 3 | 7 | 3 | 6 |

Each column gives the result of 100 acts of decision. The numbers signify thousandths of a second. The thirteenth shortest reaction is given, and the thirteenth longest, as well

as the average, and the difference between the longest and shortest or "spread" of the reaction-times. This, in the normal condition, is not very considerable, although difference must be expected because the trials were made on different days, and times of the day. The lowest row of figures gives the percentage of mistakes made.

In the case of the intoxication trials, half a litre (about 18 ounces) of Greek wine was taken, equal to about 2 litres ($3\frac{1}{2}$ pints) of small beer. The first column shows the condition just before taking the alcohol. The figures alter entirely afterwards. The "spread" of the reaction times is much increased and also the percentage of mistakes. We find that some very short reactions occur (the effect of alcohol in stimulating the motor-processes) [this is probably due to the action being more automatic or reflex and less directed by voluntary or will power — E. Medical Pioneer] in connection with particularly long times in which the paralyzing effect is already showing itself. Looking at the mistakes we find that the shortening of the time of reaction in very many cases indicates a deterioration, as the question is evidently not how to make an accurate decision, but simply to move a hand at the signal, whether the right or the wrong one.

It is also very interesting and extremely important that this paralyzing effect of alcohol was experienced, in spite of a good night's rest, and although absolutely no after-effects were subjectively felt: this continued during the whole of the second day, and first began to disappear on the third. We see this most clearly from the proportion of mistakes, which again came down to normal on the third day. The shorter times of the last four rows were due to extraneous conditions, which had nothing to do with the experiment. The general result was in no way altered, as the proportional spread is the same.

In Table II we have the comparative experiment of addition without and after alcohol ($\frac{3}{4}$ litre of Greek wine = 3 litres of 4% beer) taken in the evening.

TABLE II. — ADDITION.

| Normal Condition. | | After Alcohol. | |
|--------------------|------|------------------------------|-------------------|
| 1st day, | 1223 | 1st day, 1215 (just before.) | 960 (soon after.) |
| 2d day, | 1308 | — | — |
| | 1370 | 2d day, 1142 | |
| | 1371 | 1148 | |
| | 1329 | 1240 | |
| | — | 1239 | |
| 3d day, | 1336 | — | — |
| | 1346 | 3d day, 1267 | |
| | 1326 | 1325 | |
| | 1368 | 1284 | |
| | — | • 1269 | |
| 4th day, | 1377 | — | — |
| | 1396 | 4th day 1321 | |
| | — | 1309 | |

These numbers indicate the total reached by addition in ten minutes. It will be seen that in the normal condition the numbers mount up on the second day to almost a level, which is maintained on the third, and even increases on the fourth. After alcohol there is a notable fall, and there is also a diminution on the following day, and there is not a fair number reached until the third day, though the performance is altogether less than when free from alcohol. The author specially emphasizes the fact that he never felt any indisposition on the day following the taking of the alcohol and that he had good rest at night, indeed he felt that he had slept better than usual, and awoke more quickly, although he was less able to work.

The experiment of *learning by heart* (Table III) shows again most clearly the injurious and long-lasting effects of an intoxication. In the evening after drinking wine there was a notable diminution of power, the whole following day still considerably less performance than one had expected according to the normal action; on the morning of the third day there was still an abnormally small performance and then first a

disappearance of the effect of alcohol. The table shows how, in the normal condition, the capacity for learning by heart increases day by day. The numbers are the totals of the number of figures learned in ten minutes.

TABLE III. — LEARNING BY HEART.

| | Without Alcohol. | After Alcohol. |
|--------------------|--------------------------|--|
| 1st day, | 777 808 | 1st day, 576 (just before.) 370 (just after.) |
| 2d day, | 864 813 906 876 | 2d day, 622 522 651 608 |
| 3d day, | 912 930 756 966 | 3d day, 714 900 792 888 |
| 4th day, | 900 996 | 4th day, 864 816 |

In Table IV the results of a series of experiments on *associations* are given. Associations are of different value, the *inner* or mental associations being of higher value than those which are external or affecting the senses. In this table the relative position of the associations of *sound*, which are of the very least value, are compared with the inner, and both kinds shown in their proportion *per cent.* to the total of all kinds furnished by a single experiment. It is intended to show the proportion of the worst elements of the associations under the influence of alcohol. By examining the first figures of the normal condition it will be seen that the sound associations, 2d column, are quite immaterial compared with the higher or inner associations, namely, 2 per cent. compared with 66.4 per cent.

TABLE IV. — ASSOCIATIONS.

| | Without Alcohol. | | After Evening Intoxication. | |
|----------------|------------------|-------------|-----------------------------|--------------------|
| | All. | Sound Only. | | |
| 1st day, . . . | 66.4 | 2.0 | 68.7 | 3.4 (just before.) |
| | 67.3 | 4.0 | 44.2 | 18.5 (soon after.) |
| 2d day, . . . | 74.2 | 1.3 | 33.3 | 25.9 |
| | 65.3 | 4.0 | 51.2 | 16.5 |
| | 63.6 | 1.3 | 56.6 | 12.7 |
| | 68.6 | 2.1 | 61.9 | 10.2 |
| 3d day, . . . | 64.2 | 4.6 | 65.1 | 6.9 |
| | 57.9 | 3.4 | 73.2 | 2.7 |
| | 56.1 | 4.7 | 67.5 | 3.7 |
| | 58.2 | 1.5 | 73.8 | 1.8 |
| 4th day, . . . | 72.3 | 2.3 | 71.8 | 2.4 |
| | 56.3 | 3.1 | 72.7 | 2.7 |

With the diminution of the higher associations, the sound associations considerably increase, and reach the highest relative point on the following morning, and then slowly sink again. Even on the second morning their proportion is abnormally large at first, but on that day first becomes normal.

What do these intoxication experiments teach? They show in the first place that even a slight degree of intoxication influences the capacity for work unfavorably for many hours, certainly all kinds of mental work which take recognizable shape. An "early pint" makes its effects felt, even on the evening of the following day, and in the same way also an amount of alcohol in the evening which is still within the limits of "moderation." We see, however, that the effect varies for different kinds of work: that learning by heart and associations do not return to normal till the morning of the second day following. And all this after an "excess" which never produced noticeable intoxication nor a "morning headache." These results have a very practical application. They indicate what an enormous amount of working power is lost in consequence of the common use of alcohol. This loss is not recognized by the subjects of it, and is only proved by exact experiments. The author had no idea that these results would be obtained, and had not expected anything important: he was astonished and appalled at their weight and character. He thinks that they will prove a powerful weapon in favor of temperance.

OBSTACLES TO THE SUCCESSFUL TREATMENT OF
ALCOHOLIC INEBRIATES.

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*Read at Rochester before the Homeopathic Medical Society
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The confidence which is born of uniform success is not always rotund in the treatment of alcoholic inebriates, but is frequently pretty well attenuated after one has had the usual experience with them. It is not that the inebriate does not want to get well, for he generally says he does and tries, though frequently failing; and sometimes he gets sober and keeps sober.

When a victim of drink comes to the doctor asking for help, begging that something be done to enable him to regain his self-control, promising that on his new trial he will surely redeem his unfortunate past and once more become a man, and accompanying these promises with particulars as to how much is depending on him, no one can help, under such circumstances, taking hold and doing the best that medical experience renders possible.

The inebriate comes to the doctor with his system clogged up and poisoned, and with the functions perverted, with the hope that internal medical treatment may enable him to lead a new existence. In this belief he is supported by his friends, who fervently hope and believe that internal medical treatment is going to render him incapable of ever returning to his unfortunate habits. He may relapse, and then his friends are the first to find fault with the instability of the cure. This must be taken philosophically, with the understanding that human nature is weak, and that human intelligence has its limitations.

The more one studies the class of individuals from which alcoholic inebriates come, the more one is convinced that they resemble the poets in that they are "born," and not wholly "made." The pleasant social qualities, so frequently shown by the victims of the drink habit, lead them into convivial associations in which drink becomes the chief form of entertainment, and in the indulgence of which their appetite becomes aroused. They belong to that class of good fellows of whom their friends speak pleasantly, and, when occasion offers, with charity, frequently admitting that the sole cause of their lack of success in any effort in life is the one habit of drinking.

Back of all this, in which heredity plays an important part, in which the influence of early training and associations must be fully understood, is the necessity of possessing a healthy will-power, which will enable them to carry out a resolve, intelligently and conscientiously taken, that drink in all forms must be avoided if they would succeed in whatever they undertake. If there is one thing of greater importance than another in anticipation of a successful outcome of treatment for the drink habit, it is that the patient possess a fairly strong will power. Unless this be the case, the chances are that no treatment will result in much more than a sobering-up affair. The development of the will-power, like the development of any other faculty, may depend on healthy bodily conditions. The will-power can become enfeebled by the continuance of deteriorating habits just as readily as memory becomes impaired by careless reading.

In the case of the morphine habitué we expect and find that there is an acquired difficulty in stating facts. In the alcoholic inebriate we do not always appreciate the reason for possessing feeble will-power. If, however, we accept, and I believe we have every reason to so accept, the fact that the use of liquor engenders a benumbing or paralyzing effect upon the healthy exercise of conscientiousness and judgment, we find in their place a cloudy moral perception and a capricious judgment, and the will-power, as a controlling factor, pos-

esses but little of its original healthy strength. There is established an automaticity of action to the extent that when the desire and opportunity for drink are met, indulgence is the result.

In a life without object, without ambition, idleness will destroy the self-control of an individual as thoroughly as any other form of dissipation; while, on the other hand, plenty of methodical employment that exercises the mental power and intelligence of the individual will do much in developing and maintaining the will-power in those cases in which this treatment is necessary.

Perhaps one of the most pernicious habits in enervating one's self, and one in which the memory, continuity, moral sense, powers of perception, as well as the will-power become weakened, owing to impaired nutrition of the blood, is that of cigarette smoking. From observation I have come to believe that few, if any, of those who need treatment for inebriety can be successfully treated so long as they indulge in cigarette smoking. The practice of inhaling the smoke so constantly, as is the habit of the cigarette smoker, has the effect of keeping the lung tissue thoroughly impregnated with it, and prevents the blood from becoming properly oxygenated. The fact is that for little or no time during the twenty-four hours is it possible to have fresh blood sent throughout the system. This will account for the offensive odor that invariably encircles the cigarette smoker, prominent in breath and perspiration, and shown also in the peculiar sallowness of the skin, in the lack-luster expression of the eyes, and in the listless manner that betokens the characteristic physical enervation of this class of patients. Moreover, the mouth and throat of a cigarette smoker are kept in a degree of irritation that accentuates the desire for drink more than would otherwise be the case.

The telling of degrading experiences, under the idea that the stories are "funny," is common to those under treatment for the drink habit, and is one very serious objection to treat-

ing a number under the same roof; for a man who considers that a cause that has wrecked his own life and the happiness of those dependent on him, is but a joke of which he is the hero, is not in a mental condition to appreciate the necessity for treatment for his habit, nor does he possess a conscientious desire to free himself from it. "As a man thinks, so is he" is well illustrated in this phase of the obstacles in the way of treatment.

The excuses made by an inebriate for drinking are seldom worthy of much consideration. So strong is the desire to find an excuse that, intentionally or unintentionally, a truthful statement is avoided. In most cases when the desire and the opportunity come together he succumbs. When no opportunity offers and the desire is strong within him he is ingenious in his method of securing an opportunity, and reckless to the extent that he will throw aside all moral, social, and intellectual claims to decency, and will sink to the greatest brutishness that his end may be accomplished.

Physical disease is many times given as an excuse for drinking. This excuse must be taken with care. It may be a true statement, or it may not be. There is no doubt that some patients become addicted to drink by careless prescribing by members of the medical profession, and there is no question that liquor as a "home remedy" is often employed to the detriment of the party taking it.

In a general way, I would say that any enfeebling physical disorder must be carefully treated before the liquor habit, that the patient has formed, can be considered. Everything must be done to establish the natural integrity of the will-power, to encourage good habits by avoiding old associations, by giving up cigarette smoking wholly where this habit has been formed, and by having regular and systematic work, with plenty of fresh air, nutritious diet, and willingness to do precisely what is required of him by the physician in charge. Good intentions must be supported by patience and time. During their treatment they reach a period in which they have

unbounded confidence in their own strength, and are profuse in their promises to let drink alone, begging to be trusted, and using the most solemn pledges to create impressions of their trustworthiness. At such times the one who directs their treatment must be governed, not by what they say, but by what his past experience has taught him. They cannot be trusted at a period in which there is a peculiar mingling of the emotional state, with marked irritability, and a profound desire to have everything they say taken in earnest.

In a recent lecture by Dr. Banham, professor of Clinical Medicine at the Sheffield Medical School, occurs the following:

“Again, the public mind is still to be awakened to the danger of allowing alcohol to be taken by the children of families in which nervous diseases prevail — in which there is, so to say, a defective nervous organization. The existence in a family of epilepsy, drunkenness, insanity, or even the milder disturbances of neuralgia, sick headache, or hysteria, would lead any cautious doctor to recommend its members entire absence from alcohol. Dr. Savage, whose opinion upon insanity is universally respected, says that every variety of insanity may be started by drink, and that it is a very prolific agent in causing insanity. Dr. Maudsley, in his ‘Pathology of the Mind,’ deals largely with the transmitted craving for alcohol, and he points out that the acquired disease of the parent is the inborn heritage of the child. Terrible, therefore, indeed, is the responsibility attaching to the parents who allow alcohol to be taken by their children, when a tendency to drunkenness and nervous diseases has already revealed itself in their families.”

THE MEDICAL TREATMENT OF INEBRIETY.*

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Inebriety is a more complex disease than insanity. Its progressive degeneration often dates back to ancestors, to defects of growth, retarded development, and early physical and psychical injuries.

Later, the poison of alcohol, by its anaesthetic and paralyzing action, develops more complex states of degeneration, the form and direction of which is very largely dependent on conditions of living and surroundings.

The psychical symptoms show progressive disease of the higher brain centers, both masked and open, with degrees of palsy and lowered vitality.

In insanity many definite pathologic conditions are traceable. In inebriety a wider, more complex range of causes appear, the line of march of which is often traceable in more general laws of dissolution. Its medical treatment must be based on some clear idea of what inebriety is, and the conditions present in the case to be treated.

This requires a careful clinical study of the symptoms, tracing them back to causes, and all the varied conditions formative in the progress of the case.

In such a study, heredity appears as the most frequent early predisposing cause.

The question then is, What conditions of life have been most active in developing these inherited tendencies? How

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can these conditions be checked and prevented? What means and methods are possible in the rational treatment?

The second class of cases most commonly noted are those due to physical causes. These are the physical and mental strains and drains, also injuries both physical and psychical. The remedies here are distinct, and the means to build up and restore these defects call for therapeutic skill and judgment. A third class of inebriates seem to be due to especially psychical causes, of which mental contagion of individuals, of conditions and surroundings are most prominent.

Here another class of remedies and therapeutic measures are required. These classes are often combined, and the various causes are blended, requiring more accurate study to determine the leading factors in each case. These are conditions which provoke the early use of alcohol, and give form and direction to the progress of the case.

The second part of the clinical study of inebriety is the effect of alcohol. What injury has it caused? How far has it intensified all previous degenerations, and formed new pathological conditions and sources of dissolution? Also what organs have apparently suffered most seriously from the drink impulse? and, most important of all, how far is the use of alcohol a symptom or an active cause?

Having ascertained these facts, the medical treatment is the same as in other diseases, the removal of the exciting and predisposing causes, and building up the body.

The first question is the sudden or rapid removal of alcohol. If the patient is alarmed, and intensely in earnest to abstain, he will consent to have the spirits removed at once. If he is uncertain, and has delusions of the power of alcohol to sustain life, the withdrawal should depend on circumstances. The removal of all spirits at the beginning of the treatment is always followed by the best results. The reaction which follows can usually be neutralized by nitrate of strychnia, one-twentieth of a grain every four hours, combined with some acid preparation. Soda bromide, in 50 or 100-grain doses every

three or four hours will break up the insomnia, and cause sleep the first two nights.

The withdrawal of spirits should always be followed by a calomel or a saline purge, and a prolonged hot-air or hot-water bath, followed by vigorous massage. Hot milk, hot beef tea, and in some cases hot coffee, are very effectual. If the patient persists in a gradual reduction of the spirits, strychnia, 1-20 of a grain, should be given every two hours. The purge and hot bath should be given every day while the spirits are used. The form of spirits should be changed from the stronger liquors to wines and beers. Some of the medicated wines are useful at this time, or spirits served up in hot milk. There is no danger of delirium from the withdrawal of spirits, particularly where baths and purging are used freely. The two conditions to be treated at this time are poisoning and starvation. The system is saturated with ptomaines from alcohol, and suffers from defective digestion. The nutrition is impaired, and organic growth retarded. Saline or calomel purges, with baths, meet the first condition, foods and tonics the second. Not unfrequently the withdrawal of spirits reveals degrees of brain irritation and exhaustion, that are practically manias and delirium, or dementia and melancholia. The essential treatment is to regulate the nutrition and elimination, then arsenic, strychnine, phosphates, and iron will comprise the chief remedies that are found most useful.

Many of the chronic cases of inebriety reveal dementia when spirits are removed; others show well-marked paresis, or tuberculosis. Symptoms which were attributed to the action of alcohol are found to be due to previous degenerations. In one case the demented talk and conduct while using spirits burst into marked dementia when the drug was withdrawn.

In another case, the wild, extravagant conduct of the inebriate appears in paresis when free from spirits.

The removal of alcohol is often followed by tuberculosis, not suspected before, which apparently starts from some trivial cause, and goes on rapidly to a fatal termination.

Rheumatism and neuritis are forms of disease which frequently appear after the withdrawal of spirits. Diseases of digestion are common, also diseases of the kidneys. The latter is usually masked, and bursts into great activity when alcohol is removed.

These and many other organic diseases suddenly come into view, and whether they have existed, concealed by the anaesthetic action of alcohol, or have started up from the favoring conditions of degeneration caused by spirits, are not known. The therapeutic requirements must reach out to meet all these unsuspected disease states which may appear any time.

The removal of spirits in all cases reveals conditions of both physical and psychical degeneration that call for a great variety of therapeutic measures.

The next question is to ascertain the special exciting causes, and remove or build up against them. In the periodic cases the early favoring causes of the drink storm are often reflex irritations from disordered nutrition, exhaustion, and excessive drains or strains. Later, a certain tendency is formed for explosions of deranged nerve energy in alcoholic impulses for relief. This periodicity is often due to causes which can be studied and prevented by remedial measures. In certain cases nutrient and sexual excesses are followed by a drink storm.

In another, exposure to malarious influences, where the disease has existed for a long time before, brings on the craze for drink. In other cases, constipation, over-work, neglect of hygienic care of the body, irregularities of food and sleep, emotional excitements or depressions are followed by an alcoholic craze. A vast range of psychical causes have been noted. Thus, a residence on the seashore or in high altitudes, on mountains, provokes this thirst for spirits, and removal to higher or lower planes is followed by a subsidence of it. Many persons never use spirits except in large cities, or at special exciting gatherings, or on holidays and festive occasions.

Here evidently some defect of the brain exists, either organic or functional, which should be reached therapeutically.

Literally, many of these cases have been cured by change of surroundings as well as medicines.

While the ostensible object of medication is to stop the drink craze, this is as far from being curative as the suppression of pain by a dose of opium.

Conditions which cause the disordered nerve force to concentrate in cravings for the anaesthesia of spirits, are to be neutralized and prevented before a cure can be expected.

The use of narcotics and drugs to check the desire for spirits at the beginning is temporary and always uncertain. Opium, chloral, and cocaine given freely at this time, often simply changes the drink craze for these drugs, which are used in the place of spirits ever after.

The return of the drink impulse at regular or irregular intervals is in most cases preceded by premonitory symptoms, which enable the physician to use preventive remedies. In certain cases calomel and saline cathartics, with prolonged baths, rest, or exercise, according to the requirements of the case, have been found curative.

Various cinchonia tonics, free from spirits, and iron preparations are often useful. Large doses of strychnine seem more valuable after the full development of the morbid impulse, given when spirits are discontinued. Some of the various coca compounds on the market have had a strong influence in breaking up the drink storm.

In a certain number of cases patients are unconscious of the approach of the drink storm, and are difficult to treat. But when they realize its coming and seek assistance, the task is easier. The general principle of treatment is sharp elimination through all the excretory organs, and the use of mineral tonics, changes of diet and living; particularly a study of the exciting and predisposing causes, and their removal. When the drink paroxysm has passed away, then radical constitutional remedies are to be used. The history

of syphilis calls for mercury, arsenic, and potassium. Defective nutrition requires a study of the diet best suited to build up the tissues.

Entailments from other diseases, as malaria, rheumatism, and various neurotic affections, require appropriate remedies.

Tinctures of any form are dangerous. The susceptibility to alcohol is so great that the smallest quantity is felt, although it may not be recognized.

Where spirits are taken continuously the system is always depressed; all functional activity lowered, and literal palsy and starvation are present.

The removal of alcohol is only a small part of the treatment. The demand for alcohol is a symptom of this progressive degeneration. Giving remedies to produce disgust for the taste of spirits, or to break up the cravings for it, are not curative. Apomorphia, mixtures of atropia, hydrastine, and a great variety of allied remedies, are all dangerous; while apparently breaking up a symptom of the disease present, they often literally increase the degeneration by their irritant narcotic properties, and further depressing action on the organism. The indiscriminate use of these, and allied drugs, in the various specifics for inebriety, is the most dangerous empiricism. It is the same as opium or other narcotics for pain in all cases, irrespective of all conditions, and calling the subsidence of the pain a cure. Thus, in the following cases, a periodic, after a gold-cure treatment, developed into acute dementia, which ended fatally. In others, epilepsy, acute mania, pneumonia, rheumatism, nephritis, followed from the chemical suppression of the drink impulse. In all probability, the narcotics used were active, contributing causes to the particular organic diseases which followed.

The masked character of inebriety makes it dangerous to use narcotics beyond a certain narrow limit. Cases which have been subjected to active drug treatment, to suppress the desire for spirits, are feebler and more debilitated than others. Those who have taken the so-called specifics are marked ex-

amples, and whether they use spirits again or not, are always enfeebled and pronounced neurotics.

In all these cases there is so wide a range of causes and conditions that specific routine treatment is impossible.

Strychnine has recently come into some prominence, and is a useful, valuable drug. In some cases, where the spirits are withdrawn, its action is pronounced as both a tonic and stimulant. Given in 1-30-grain doses four times a day, for a few days at a time, then discontinued, or given in larger doses for a shorter time, the results are usually good.

In some cases, certain susceptibilities to the action of strychnia are noticeable, and where the drug is taken to prevent the drink attack, it sometimes rouses it, seemingly precipitating the condition which it is supposed to prevent. This is often anticipated in the muscular tremors and nerve twitchings that evidently come from strychnia, when used even in small doses.

Strychnia should never be given alone, except immediately after the withdrawal of spirits. At other times, combined with cinchonia or other vegetable tonics, it is an excellent tonic. Care should be used to watch its effects on the motor nerves, and be sure that the patient is not unusually sensitive to it. Belladonna, atropia, cannabis indica, hyosciamus, and drugs of this class have a limited value, and should be used with great caution in states of irritation following the withdrawal of spirits. They are best given in combination with other drugs for a brief time and in particular cases. The bromides are valuable in the same way, and in the same conditions, only in much larger doses than mentioned in the text books. From 50 to 100 grains to a dose are requisite, always accompanied with baris, and never continued more than two or three days. Coal-tar preparations are of uncertain value as narcotics, but may be used in certain cases with good results.

The various mineral and vegetable acids are almost indispensable in selected cases, and often can be given a long time as tonics.

In the treatment of cases, after the paroxysm is over, frequent changes of the form of the tonics are most valuable. Iron, phosphorus, arsenic, potassa, and bitter vegetable tonics should be alternated with free intervals, for periods of months. The various derangements of the system should be watched and treated with appropriate remedies, and every case should be constantly under medical care. The facts of the case having been studied, the question of where the medical treatment can be applied to the best advantage must be determined from the case and its surroundings.

If at home, the physician must have full control, and his directions carried out implicitly. When the drink paroxysm appears, the course of treatment must be prompt and exact. In one case, the patient goes to bed, and is secluded from all sources of excitement; in another, he is sent away to the country, and among strangers; in a third case, a few days' residence in a hospital or asylum under the care of a physician is sufficient. Hospital treatment, with its exact care, and physical and psychological remedies continued for a long time, give the strongest promise of permanent restoration. Wisely adapted medical treatment, based on a careful study of each case, makes it possible for the family physician to treat these cases, in the early stages, with success.

No single remedy is capable of meeting a wider range of conditions than the Turkish or hot-air baths, with free massage. Next to this is hot and cold showers, and hot packs with free rubbing. Bitter tonics and salines, with regulated diet, are next of importance. Elimination through the bowels, kidneys, and skin freely, are always essential. Beyond this, the good judgment of physicians should determine when to give narcotics, and when to abandon them; always remembering their danger and very uncertain temporary action. Also that the cessation of the drink craze is only temporary. If this is accomplished by drug and chemical restraint, the permanency is very doubtful.

The subsidence of the drink symptom by the removal of the

exciting causes, and building up the system to greater vigor and health, is the only rational treatment. In this, the highest medical judgment possible and the greatest therapeutic skill are essential for success. The medical judgment, which will determine the exact condition in each case, and the possible range of remedies required; not any one drug or combination of drugs; not so-called moral remedies, or appeals to the will power, but a clear, broad, scientific application of every rational means and measures are demanded. A large number of these unfortunate cases are distinctly curable in the early stages, and later, when chronic conditions come on, the possibility of cure continues to a far greater degree than is commonly supposed.

It is the common observation of everyone that a certain number of cases recover from the apparent application of the crudest empirical remedies and psychical agencies used in the most unskillful way. This fact furnishes the strongest possible reasons for believing that when inebriety shall be studied and treated as a disease more generally by the profession, a degree of curability will be attained far beyond any present expectation. The present empirical stage of treatment should rouse a greater interest and bring the medical treatment of inebriety into every-day practice. Then the family physician, and not the clergyman and quack, should be called in to advise.

A new realm of medical practice is at our doors, only awaiting medical study above all theory, and exclusively from the scientific side.

Appleton's Popular Science Monthly is undoubtedly the strongest science journal now published. The purpose to give, in a popular form, the best conclusions of recent scientific study, is carried out with ever increasing completeness in each number. Such journals need no praise: they commend themselves to every reader.

TREATMENT OF ALCOHOLISM.*

FROM REPORTS OF ARMY MEDICAL OFFICERS RECEIVED AT THE
SURGEON-GENERAL'S OFFICE.

By DR. C. H. ALDEN, Assistant Surgeon-General, U. S. Army.

I have received so much pleasure and profit from my attendance upon the meetings of this society, of which you have kindly made me a member by invitation, that when called upon by your corresponding secretary for a paper I was very glad to respond; but having nothing of my own to offer I have, by consent of the surgeon-general, grouped together and will read abstracts from reports of several medical officers of the army, on the treatment of alcoholism and the drink habit.

It seems to me that this subject has scarcely received the attention at the hands of the profession generally that it deserves. It has been too much in the hands of charlatans and proprietors of Keeley Cures. There is no more pitiable object physically and mentally than an alcoholic wreck, and surely when such a case is met with in general practice something better can be done than to call him a drunkard and send him to an asylum or turn him over to the hands of secret-remedy men. There are, undoubtedly, many cases which cannot be successfully treated except by taking the patient away from his surroundings and putting him under restraint, temporarily, but are there not many other cases occurring in the experience of the family physician which call for treatment by the regular attendant, and which can, especially when the patient himself gives his coöperation, be successfully managed at the patient's home? I think, therefore, that efforts such as those of the

* Read before the Medical Society of the District of Columbia, and published in the *National Medical Review*, September, 1896.

writers of the reports that I shall read, to elevate this subject from the region of quackery and take it out of the hands of the charlatan, are commendable. I do not claim for these reports any special novelty, yet they contain suggestions that may be of value.

The first report is by Assistant Surgeon T. S. Bratton, a recent graduate of the Army Medical School, now stationed at Fort Niobrara, Nebraska, which reads as follows:

“ Post Hospital, Fort Niobrara, Neb., March 24, 1896.

“ To the Surgeon-General, U. S. A., Washington, D. C.:

“ Sir: I have the honor to report the results of the treatment of 52 cases of alcoholism by the hypodermic injections of strychnine and atropine. As the action of these remedies in alcoholism is quite well known to the profession it is not deemed necessary to dwell on the *modus operandi*. To ascertain fully the antidotal effects of these drugs nothing was given, as apomorphine and whisky, to create nausea and disgust for the taste of whisky; but, on the contrary, the stomach was quieted and brought to its normal condition as soon as possible. Each patient, on entering the hospital, was given 0.3 calomel and 0.6 of bicarbonate of soda, as a routine, to clean out the alimentary canal. If nausea existed it was relieved by 1 c. c. each of tincture capsicum and spirits menth. pip. at a dose and repeated, if necessary, every hour or two. Hot milk and lime water in small quantities, frequently repeated, was also used in these cases of irritable stomach with the best results.

“ As soon as the calomel acted the injections of strychnine and atropine were begun. The usual dose was strychnine sulphate 0.001 (grs. 1-60), atropine sulphate, 0.0005 (grs. 1-120). The patient was kept in a condition in which there was dryness of the throat and slight dimness of vision. This, of course, required an increase or decrease of the dose according to the susceptibility of each individual. I found some could stand larger doses, while others required less. The strychnine was increased or decreased in the same proportion (1-60 gr. of strychnine to 1-120 gr. of atropine), and did not produce the first symptoms of poisoning, tho' some very large doses were given. These injections were continued three weeks, and at the end of that time each patient was given a bottle of elixir of iron, quinine, and strychnine enough to last a week,

3.7 c. c. three times a day, and sent to duty. The first week in the hospital they were all given 3.7 c. c. of tinct. gentian comp. to increase their appetites. When they were able they were encouraged to take lots of exercise in the hospital grounds. The whole object in view was to build up the nervous systems.

“ Many of the cases were voluntary. Some were given a choice by their company commanders of either taking the treatment or having charges preferred against them that would cause their discharge for drunkenness.

“ From the latter class almost all the relapses occurred.

“ In forming an opinion as to the merits or demerits of the treatment, these facts should be borne in mind. (Signed, T. S. Bratton, 1st Lieut. and Asst. Surgeon, U. S. A.) ”

The report is accompanied by a tabular list, giving the particulars in regard to these cases, showing how long each patient had been drinking before treatment was commenced, when they were discharged from treatment, their history since, so far as sobriety is concerned, and the cases which relapsed. Treatment, it was stated, lasted three weeks. He reports 52 cases, but of these some of them had been discharged from treatment so recently that results in their cases could not be fairly considered. Excluding, therefore, nine cases in which they have been discharged from treatment two months or less, would leave 43 cases for consideration. These patients had been drinking, I see, from seven to twenty-six years. Of these seven have relapsed.

The doctor accompanies his report with letters from the officers commanding companies stationed at his post, and all, without a single exception, speak in the highest terms of the results of the doctor's treatment in restoring men who have been chronic drunkards to the position of good soldiers; in some cases their reformation having been followed by promotion to non-commissioned officers. Several speak of the point made by the doctor in his report, that the cases of relapse were almost all those who had been compelled by their company commanders to take the treatment, and who did not do it willingly. The co-operation of the patient, therefore, seems to be an important element in its success.

The next report is by Assistant Surgeon E. L. Munson, also one of the younger officers of the medical corps, stationed at Fort Assiniboine, Montana. He reports but a single case, but one worth quoting, especially as his treatment seems to have been an imitation of that we understand to have been adopted by some of those who keep secret their methods. We cannot deny a certain measure of success to the men who have taken this unworthy method of treating the drink habit, and if their successful methods can be carried out openly and upon a rational basis, it would seem to be good practice.

Report of a case of chronic alcoholism, treated empirically, with apparent cure, by Edward L. Munson, M.A., M.D., First Lieutenant and Assistant Surgeon, U. S. Army:

“Sergeant P. C. has always been considered by his superior officers as an able, trustworthy, and painstaking man when sober, but, for the past ten or twelve years, he has been in the habit of indulging in a debauch at intervals of three to six weeks, these debauches lasting days, or even weeks, thus greatly impairing his efficiency and reliability.

“He was an irregular, rather than a steady drinker, was fully aware of the evils incident to his habits, but, while anxious for reform, appreciated that this could never be accomplished by his own unaided efforts. He had on several occasions received sedative treatment from me during the late winter and spring of 1894-5, was in hospital for alcoholism during April, 1895, and finally, on May 9, 1895, was placed in hospital and a treatment outlined, which, in nine days, resulted in cure. He entered a hospital after a debauch of a week's duration, unable to converse intelligently, breath foul, tongue coated, and tongue and extremities markedly tremulous. There was considerable gastric irritation, with constipation, and a cathartic of magnesium sulphate, with black coffee and strong beef tea was at once given. A hypodermic injection, consisting of 0.031 of a grain of sulphate of strychnine, 0.007 of a grain of sulphate of atropine, and 0.123 of a grain of sulphate of morphia, was ordered to be given three times daily, and at these times the patient was allowed to drink as much whisky or brandy as he desired, which was considerable during the first thirty-six hours of treatment.

“Immediately following the administration of the alcoholic the hydrochlorate of apomorphine was given hypoder-

nically, beginning with a dose of 0.062 of a grain, and gradually increasing to 0.092 of a grain, the intention being to produce a gradually increasing nausea, which would finally become so great as to result in actual vomiting. The patient was repeatedly impressed with the idea that the medicines administered were incompatible with alcohol, and that their continued use would result in an intolerance by the system to alcoholics. All craving for liquors disappeared at the end of the second day, and on the third day whisky had already become extremely distasteful, but was ordered continued in doses of thirty to forty cubic centimeters, as before.

“On the fourth day the atropine and morphine were discontinued, and the dose of strychnine was increased to 0.046 of a grain, which appeared to be about the limit of tolerance, and this treatment continued for three days. On the seventh, eighth, and ninth days the whisky was omitted once daily, and at these times a hypodermic injection of distilled water was substituted for the apomorphine, the previous conviction that the nausea and vomiting previously experienced were due to the antagonism between the drugs, and the alcohol being thus strengthened. At the end of nine days the above described treatment was stopped, a simple tonic of nux vomica, cinchona, and gentian was ordered to be taken for a fortnight, and the patient was discharged from hospital.

“At that time the patient was nauseated at the thought, sight, or smell of whisky, and this condition has continued up to the present time — a matter of nine months. Since this treatment, according to his own testimony and that of his superiors, he has not touched a drop of liquor of any kind; his former habits and inclinations appear to be broken off and the cure to be complete.

“The cure is, of course, due to suggestion and the association of ideas combined with whatever tonic and anti-alcoholic properties may be possessed by strychnine. The method here employed, although empirical, has certainly brought about an unexpectedly successful result in an especially unpromising case, and it would seem as if this method, in selected cases, were worthy of a more extended trial.”

The third report I shall read is one that was published several years ago in the *Medical News*, by Dr. George E. Bushnell, Assistant Surgeon, U. S. Army, then stationed at

Fort McKinney, Wyoming, and is entitled "The Treatment of Chronic Alcoholism by Hypnotic Suggestions."

It may be stated that all treatments of the alcoholic habit, even those of the writers of the reports I have already read, have depended more or less upon the imagination and the influence over the mind for their success, but, in this report, hypnotic suggestion is alone relied upon as the therapeutic agent.

I happen to know Dr. Bushnell intimately, and know him to be one of the most modest and conservative men possible. He worked over this subject of the treatment of chronic alcoholism by hypnotic suggestion for several years before venturing to publish his views.

I shall abbreviate his report, as it is somewhat longer than there is time for me to read in full, leaving out the detailed reports of cases which he gives. You will see that the Doctor does not make any extravagant claims for the success of his treatment, but simply reports the facts for the consideration of the profession. What he says is sufficient to show, it seems to me, that there is a certain power in hypnotism as applied to treatment of the drink habit, which can, in selected cases, be relied upon with success.

Abstract of Dr. Bushnell's Report.

"The treatment of chronic alcoholism has of late become a matter of especial interest to the medical profession of this country in view of the popularity of various secret 'cures' for that condition. No unprejudiced observer can deny that these methods of treatment have cured some drunkards of their addiction to liquor for periods of some years at least. Although such so-called 'specific' treatments have been repeatedly denounced by the medical press, it is a fact that many physicians send patients to the institutions in which such treatment is given, or have adopted or attempted to imitate their medicines. It appears to be generally admitted that strychnine

and atropine are the active drugs in these secret compounds, and we may well inquire whether the success of such treatment is or is not due to these alkaloids. During the past three years I have experimented with hypnotic suggestion in the treatment of chronic alcoholism and have obtained results practically identical with those reached by these methods, but, in the great majority of cases, in less time and without giving a drop of medicine of any kind. It is, therefore, a fair inference that in the methods of 'specific' cure the psychic effect produced by the frequently-repeated hypodermic injections, by the symptoms arising from physiologic doses of powerful alkaloids, and by the expectant attention of the hopeful patient, is of more importance than the character of the drugs employed. It is true that the hypodermic administration of the nitrate of strychnine was recommended by Russian physicians in the treatment of alcoholism before Keeley became known to fame, yet, it is to be noted that Dr. Koroná, of Tiflis, who has had a very large experience with this method, raises the question whether its effect may not be largely due to suggestion. This question can only be answered by the experiment, which has never been tried, so far as I know, of treating an alcoholic subject with hypodermic injections of strychnine, without allowing him to suspect that the object is the cure of his appetite for liquor. But even if strychnine, alone or in combination be granted to exert a specific influence upon the liquor habit, as the tendency of alcohol is to produce fatty degeneration, the use of so powerful a cardiac stimulant as strychnine is not without danger of causing the sudden death of the patient from over-excitation of a fatty heart. This fact is recognized in the Keeley institutes. A careful examination is made of the heart of all applicants, and those are refused treatment in whom there is any reason to suspect the existence of this degeneration, thus excluding a class which most urgently needs deliverance from the liquor habit.

"The hypnotic treatment of alcoholism appears to be little known in this country. I have been obliged to work without much assistance from the literature on the subject, which is for the most part not easily accessible, and the views which I shall present are almost wholly the result of my own experience.

" The following is a condensed report of all the cases of chronic alcoholism which I have treated by hypnotic suggestion:

" Excluding one case on account of inadequate treatment, two cases because of the death of the patients, and one case because the result is not known, there remains a series of nineteen cases, which may be classified as follows:

" 1. Remained abstinent to the present time or when last heard from, 5.

" 2. Relapsed and abstinent after further treatment, hypnotic or 'specific,' 3.

" 3. Relapsed after passing out of reach, 2.

" 4. Relapsed and sought no further treatment, 3.

" 5. Relapsed and continued to drink, notwithstanding additional treatment, 3.

" It may be fairly claimed that all of the patients were sufficiently influenced by the treatment to have become convinced that they could be cured by a continuance of it. It is, therefore, safe to assume for all the patients of class 4, which I know to be true of one, that conviviality has pleasures for them which they have found themselves unwilling to forego. The patients in class 5 were all non-commissioned officers who were induced by their company commanders to submit to the treatment, and, with the exception of one, in the early part of his treatment, were not themselves desirous of help. These men are restricted by their rank to a narrow circle of intimate friends, who are for the most part drinking men, and total abstinence means for them the loss of almost all social pleasure. The conspicuously bad result in their cases shows well the futility of attempting such reform without the hearty co-operation of the subject. Suggestive treatment can only be expected to remove the physical cravings for alcohol. But, unfortunately, after such cravings have disappeared, many motives for the indulgence still remain, such as the influence of associates, fondness for excitement and conviviality, and the desire to forget trouble or disgrace.

" In estimating the results here reported it should be borne in mind that the frontier is the most unfavorable place for the cure of alcoholism, on account of the almost universal use of alcoholic beverages by the population and the lack of innocent amusements.

"I have never failed to hypnotize a patient who sought treatment for alcoholism. Of the 23 cases here reported 18 were hypnotized on the first attempt, 3 on the second, 1 on the third, and one on the fifth.

"The method which I generally pursue is as follows: The patient, who is comfortably seated, is directed to fix his gaze and his attention upon some object before him. It is not necessary that this object should be bright, nor that it be placed so near as to strain the accommodation or cause marked convergence of the optic axes. In the meanwhile, standing behind the patient, I stroke his forehead gently and evenly with both hands. In the great majority of cases the patient's eyes close spontaneously in from two to ten minutes. In some cases the patient is on the point of being hypnotized but the eyes remain open, and must be closed before hypnosis is induced. These cases may be recognized by the fixity of the lids. The patient does not wink, or, if winking is still performed, the act is incomplete, the upper lid does not fall so as to completely cover the eyeball. A more effectual, but more disagreeable way of hypnotizing, is to sit facing the patient and look him in the eye, the patient being charged to fix his eyes steadily upon one of the eyes of the physician, which are brought within a foot or two of his own. The psychic effect upon the patient is greater than if he were looking at the inanimate object, and his attention is consequently more easily concentrated. The physician relaxes his accommodation to escape the eye-strain, which would otherwise be incurred. The eye-muscles of the patient are necessarily strained by this method, but the pain, and, in a great measure, the conjunctival injection may be removed by suggestions during the succeeding hypnosis. Verbal suggestions may advantageously be employed in connection with either of these methods. If the patient is not hypnotized in fifteen minutes it is, as a rule, best not to persist in the attempt to influence him at that sitting. The second attempt will almost always be successful. Hypnosis being induced, suggestions are given to the effect that the patient will have no craving for liquor; that it will be disagreeable to the taste and unpleasant in its effects; that sleep, appetite, and digestion will be good; that nervousness will disappear, etc. It is well to suggest that there will be no nervousness, no pain in the eyes, and no headache upon awakening, also especially in the case of those who are hypnotized with difficulty that there will be no drowsiness.

" The ease with which patients fall asleep increases generally at each repetition of the hypnosis within certain limits. That intoxication predisposes to hypnosis is shown, however, by the fact that a patient who has been hypnotized in two minutes, while under the influence of liquor, often requires three or four times as many minutes to produce that result after he has become perfectly sober.

" The treatments are repeated, if possible, every day for at least a week, after which they are given once a week for a few weeks, then once a month. The number of treatments necessarily must be determined separately for each case, as there are great differences in the individual reaction to suggestion. I have allowed the worst drunkards to continue to drink during the early part of their treatment, with the restriction that they take no more liquor than is necessary to prevent nervousness and sleeplessness. This concession saves the patient some suffering, and the effect upon his imagination is, perhaps, greater if he is convinced by actual trial that liquor is becoming more and more unpleasant in its taste and its effects. From three to six treatments generally suffice to remove the craving for alcoholic stimulants in those who abstain. In those who continue to drink, the effect of the treatment always manifests itself in a rapid loss of the acquired tolerance for liquor, which becomes more intoxicating, and at the same time more disagreeable, until a point is reached, generally after from five to seven treatments, when it appears to the patient that a sudden change takes place in his appetite. He can often state the exact hour when 'the whisky turned on him,' as he is apt to express it. This change he considers so profound and permanent that there is often difficulty in inducing him to return for what appears to him unnecessary additional treatment.

" It is an interesting fact that, while it is easy to render whisky repugnant to the senses of the patient, it appears to be impossible to accomplish this in the case of beer by any number of suggestions. The loss of tolerance and the cessation of cravings for alcohol are reached, however, with as great certainty in the one class of drinkers as in the other.

" It might be expected that patients would attempt to excuse themselves in case of relapse by alleging the return of irresistible cravings for liquor. This has occurred in none of my cases, except one, under circumstances already detailed.

The difficulty is almost always the temptations of conviviality, unwillingness to offend by refusing 'treats,' and the like. In the least successful cases, the first taste of alcohol reawakens the former cravings. The majority resume their old habits more gradually, and the whisky drinker will sometimes drink beer for a considerable period without excess. But in all cases the continued indulgence in drink leads certainly and generally speedily to drunkenness. The relapsed drunkard finds that he has no longer the ability to 'carry' liquor upon which he once prided himself. If he does not recognize and respect that fact, he is in danger of the deepest intoxication.

"The evil effects of alcohol upon the nervous system are marked in cases that have been treated by suggestion, and delirium tremens may result from comparatively slight excess. It is perhaps unnecessary to say that this loss of tolerance of alcohol is due simply to the character of the hypnotic suggestions which have been employed. Hypnotism may be used to produce the opposite effect.

"Suggestions, the effects of which are not intended to persist, should be avoided. It is not necessary to attempt to impress the imagination of the patient by varied suggestions, the purpose of which simply is to show the power of the physician over him. Nor is it necessary for the treatment of the great majority of cases that the subject be in the so-called suggestible stage of hypnosis. Functions which are not directly under the control of the will, such as sleep, peristalsis, the appetites, natural and artificial pain, the organic sensations, etc., may be influenced by suggestion in any stage of hypnosis from the slightest drowsiness to the deepest sleep. Even a considerable degree of intoxication is no barrier to the success of such suggestion, as I have repeatedly observed.

"Hypnotism is not necessarily exhausting to the patient, as has been claimed. On the contrary, if his nervous energy is not wasted by suggestions which produce fatigue or disgust, he feels refreshed upon awakening, as from ordinary sleep. The dangers of hypnotism, as far as they exist elsewhere than in the imagination of its opponents, are due almost always to an improper use of the method. Certainly as employed for the cure of alcoholism there are no dangers to be feared from it which are at all comparable with those arising from a continuance in habits of intemperance."

Appendix. Extracts from Annual Report of the Surgeon-General of the Army for 1895.

Captain W. H. Arthur (Assistant Surgeon, U. S. Army) reduced the statistics of alcoholism at Vancouver Barracks by dealing with drunkenness as with acute poisoning. He reported as follows:

"The report of the Surgeon-General for the year ended June 30, 1892, mentions this post as having out of all the army the highest rate of admission to sick report for alcoholism. The number of cases of simple acute alcoholism that appeared at sick call, and during the day, when I first assumed charge of this hospital, was unusually large, and resulted in the laying down of certain rules in an effort to discourage drunkenness as far as it was in my power. No man is taken on the sick report or excused from any duty unless, in my opinion, his condition would make it actually dangerous for him to keep at work. I may say here that such cases are, in my experience, very rare, and that a mistaken pity for a man suffering from the effects of a debauch is liable very often to lead a too indulgent post-surgeon to excuse him from duty, when the guard-house, and not the hospital, is the proper place for him. I am confident that this mistaken kindness has done a great deal in the past to encourage drunkenness. Each man who has reported at the hospital in any stage of simple alcoholism is treated as a case of alcoholic poisoning, taken immediately to the operating room, his stomach emptied by the use of the stomach-pump, and thoroughly washed out with warm 2 per cent. soda solution. After this he is given a bowl of hot beef extract, with cayenne pepper, allowed an hour's rest, after which he is generally perfectly able, however unwilling, to do his duty. If the weather is severe, either very hot or very cold, it might not be safe, in his depressed condition, to force a man to work out of doors immediately after this procedure, but at this post the extremes are not great, and it has in no case resulted prejudicially to the patient. Occasionally some resistance is met with, but two, or at most three, able-bodied hospital corps men and a perforated wooden gag, such as comes with the stomach-pump, will, with patience and determination, overcome almost any ordinary opposition. I have found for this purpose the gum elastic stomach tube in the old-fashioned stomach-pump case, connected with Allen's surgical pump

work, very satisfactory. The ordinary soft rubber lavage tube is too easily collapsed, and is more difficult to introduce when there is resistance.

"The effect of this treatment has been uniformly excellent. The stomach, emptied of its irritating contents, and cleansed of the thick, tenacious mucus that is always present in such cases, is much less irritable, and rarely rejects the beef extract which is given immediately; the nervous symptoms improve at once, and sedatives administered by the mouth have a far more prompt and lasting effect, and, in almost all cases, the craving for liquor is very much diminished. Of course cases may occur which are too serious for such summary treatment. I have not met with any myself, and have used the stomach-pump with good effect in cases even of delirium tremens and alcoholic coma. These cases, of course, are promptly taken into the hospital and treated as dangerously sick men. The deterrent effect of this treatment is excellent. It is, of course, not agreeable, though no one can deny that it is perfectly rational and merciful. In the past ten months but one man has been admitted to hospital for alcoholism. There are no doubt other factors that enter into the production of this marked change in the past in two years, but I am confident that this method of treating alcoholism as poisoning has been a very important if not the principal one. I may add that in but one case has it been necessary to use this treatment on the same man more than once."

Judge Parker, in the *North American Review*, says that during twenty-five years of service a thousand persons have come before him accused of murder. At least three-fourths of all these cases were due to the use of spirits. He believes that nearly all cases of murder are in some way associated with the use of spirits. In twenty-six murders, in one section of the country, twenty-five were due to the use of alcohol. These cases occurred in Arkansas and the Indian Territory, in the federal court.

Abstracts and Reviews.

THE RELATIONS OF ALCOHOLIC INDUL- GENCE TO INSANITY.

The influence of the excessive use of alcohol in the production of insanity is one of the certainties, and yet there is occasionally a question raised as to the relative importance of this casual factor. A few years ago a physician, since a superintendent of one of our large state asylums, wrote a paper to show that its effects were insignificant, and in one way or another there has been produced a considerable literature on this side of the question. Nevertheless it may be fairly assumed that alcoholic intemperance is generally admitted to be a very important, if indeed not actually the most important, cause of mental disorder. Those who would dispute it are comparatively insignificant in number among alienists, and there is not any preponderance of scientific authority against it.

There are, however, certain questions that arise in this connection that are not so readily disposed of. While it is admitted that alcoholic excesses tend to mental break-down, while acute and chronic alcoholism are disorders that are universally recognized as appertaining more or less to the specialty of psychiatric medicine, there is yet room for a wide difference of opinion as to the effect of the use of alcoholic drinks in what is called moderation. There is certainly enough excess to produce a very large percentage of insanity in our asylums, but data are too generally insufficient for us to be able to say with exactness the proportion of cases in which it has certainly been an etiological factor. These are by no means always what would be classed as cases of alcoholic insanity, as we are well aware, and often there may be nothing in the history as well as in the symptoms to point

directly to any such origin. Intemperance is a disreputable fact and is likely to be concealed or denied, even when it may have been excessive. It is very possible that this tendency far overbalances the contrary one of making erroneous *post hoc, ergo propter hoc*, diagnoses of insanity from alcoholism on account of prior known habits when really other causes are to blame, in asylum statistics, and that our figures of mental diseases of alcoholic origin are much below, rather than above, the truth.

The questions, therefore, that arise as regards the influence of alcohol in the production of insanity may be stated as follows :

1. Does alcoholic excess produce insanity? This, as already stated, may be regarded as an indisputable fact.

2. In what proportion of cases is this factor to be admitted? This is one to which various answers have been made, as indicated. The majority of reliable authorities place the percentage of cases directly due to this cause at not less than 10 or 12 per cent.; some recent writers have estimated it much higher, and consider the increase of insanity in modern times as very largely due to such excesses. This is the view held by Smith, of Marbach, in a paper read last November before the Southwestern German Society of Alienists, and Garnier, of Paris, in a communication a year or two ago, claimed that insanity had increased 30 per cent. in the last fifteen years in that metropolis, largely from this cause, and that alcoholic insanity, properly so-called, had increased in that period threefold. Those who have minimized the influence of intemperance to producing below 10 per cent. are very few and include no recent high authorities. We may therefore safely assume that at least 10 per cent., and probably more, of the cases of insanity in most civilized countries are directly due to alcoholic excesses. If we include only males, the percentage will naturally be higher, as alcoholic insanity is comparatively infrequent in women, and if we admit it as an indirect cause, we must add a considerable proportion of all cases of insanity in both

sexes as more or less influenced by this factor. The poverty and misery induced by intemperance, the impaired constitutions, the reckless exposures, the traumatism: etc., will all have to be considered. We might also add the defective organization inherited by the children of drunkards under this head to still further swell the percentage.

3. What constitutes excess in the use of alcohol, and what is the influence on the production of insanity, of what is considered its non-excessive usage? This is the most complicated question of all, and the one that is hardest to answer satisfactorily. The often quoted experimental investigations of Anstie, Parkes, and Wollowicz, and of Dujardin Beaumetz, seems to show that, under normal conditions, between one and two ounces daily, or not much over the latter figure, of absolute alcohol is about what an average robust individual can stand, and that any amount above that is beyond the danger limit, or more than the system can dispose of with safety. This, however, only applies to perfectly healthy and normal individuals, and does not cover all the possibilities of either tolerance or intolerance of alcohol. We know very well that for almost all time some individuals have been using intoxicants to a far greater extent than is above indicated, without any very apparent directly damaging effects upon themselves, as far as known. On the other hand, perhaps, a greater number will be seriously injured by even less than the minimum here given. Moreover, the not finding alcohol in the urine does not positively show that the system is innocuously disposing of all that is injected; there may be more or less injury to the nervous system, even from a small amount. There is no class of agents that have their effects more modified by individual idiosyncrasy than stimulants, and of these alcohol probably takes the lead in this respect. The same dose will affect one man in his brain, another in his cord, and a third perhaps in neither. Steady drinking will cause often the most opposite effects, both physical and mental, according to the individual; with the same kind and quantity one man is jovial, florid, and red

nosed; another is pallid, taciturn, and surly; one man is incoordinate, with a comparatively clear head: another has his judgment and temper awry, without any apparent bodily symptoms whatever.

As regards small amounts of pure alcohol, the same holds true — there is no general universal standard of moderation. When we consider, however, that it is seldom taken pure, and that its physiological action is complicated by the other more or less active constituents in the usual beverages, to say nothing of the unknown adulterations, it will be seen that the question is a very complex one. According to Dujardin Beaumetz, bad brandy is more directly toxic than absolute alcohol, and that is the character undoubtedly of a large proportion of the drinks now commonly used by more or less habitual drinkers.

The chief action of alcohol, however, is that which it exerts upon the brain and nervous system, and it is for that that it is used as a beverage by mankind; whatever benefit it may be as a food, a retarder of tissue waste, or an assistant to digestion, is a very secondary matter, and is not usually regarded by the drinker except as a convenient excuse for the indulgence. It would not be unnatural to suppose that a normal brain has no need of alcohol, and that the effects of so active an agent on one inclined in any way to be abnormal might be deleterious, and that in the way it is commonly taken, with all its associated more or less active substances, some of which are even more potent for evil than itself, this would be still more likely to be the case. There is, therefore, a reasonable doubt, at least, as to the safety to mental health of even small continued doses of alcoholic drinks, and the burden of proof lies on the side of those who would dispute this conclusion.

Practically there is no standard of moderation in the use of alcoholic drinks, and it is therefore impossible to use statistics to determine the effect of moderate drinking in the production of insanity. What would be moderation in one would be excess in many more, and the statements of habit-

ual drinkers cannot always be accepted as to their habits. The only way actual statistics could be obtained would be from the fullest and most carefully studied individual histories, covering not only the facts of the life of the patient himself, but also those of his ancestors for at least two or three generations. Charcot is credited with saying that, "every drop of the seminal fluid of a drunkard contains the germ of all the neuropathies." This being so we will have, in order to positively eliminate the agency, direct and remote, of alcohol, to search the pedigrees and family histories to find the neuropathic taint thus originating that may develop into insanity, possibly of the alcoholic type, possibly in any other form, in the descendant of the original transmitter. A habitual user of alcohol may, it may be possibly admitted, show no bad results in his own person and yet pass on a deteriorated nervous constitution to his offspring. The effects on the individual himself may be slow in developing, and may require a skilled medical diagnosis for their recognition as of alcoholic origin, however serious they may be. It would be of interest to know what proportion of cases of senile insanity and late organic dementia occur in abstainers and in those who have been accustomed to the occasional or habitual moderate use of alcoholic drinks, and in this line is perhaps the best hope of finding any value in statistics for answering this particular question. If moderate drinking has any effect in causing insanity, it might be naturally supposed that it would be late rather than early in its appearance.

It has been already mentioned that we have to consider not merely the alcohol but the constituents of the ordinary beverages when taking account of the pathological effects of these latter. Pure alcohol is very little used as a beverage, and when so used, as by the Scandinavians in some parts of our country, it is nearly always to excess and the effects are obvious and indisputable. In the ordinary spirituous liquors we have not only ethylic, but also the higher, more toxic alcohols in greater or less proportion, together with various

ethers and other substances, many of which are powerful neurotics, to say nothing of unknown adulterations that may be more or less harmful. These last, together with the ethers, etc., occur also in the various wines, especially the imported ones. In beer we have had of late years a number of new constituents, as there have been extensive changes in its manufacture. Malt liquor would seem to be a misnomer for some of the beer of to-day, as glucose is said to have largely superseded malt in some beers, and where the cereals are employed they are likely to be rice or corn (meal), etc., instead of the traditional barley. Whether these changes render the drink any worse as regards its action on the nervous system may perhaps be a question, but is one the consideration of which complicates the subject. The amount of the nervous depressant lupulin with the alcohol taken into the system is also worth bearing in mind in the consideration of the possible effects of beer, in favoring insanity. *A priori*, it would seem that it might have such action, but as yet actual satisfactory data are hard to obtain. That the moderate use of alcohol, generally in the form of beer, has a bad effect in actual existing mental disease is supported by the testimony of English (thirty out of fifty superintendents reporting), German (Kraepelin), and Swiss (Forel) alienists who have had experience with and without its usage.

The answer to the third question, therefore, is a complicated one. There is no exact standard of moderation in drink; the maximum quantity is injurious to some, while others are apparently unaffected injuriously by very large amounts. If we could put all moderate drinkers on a certain ration, really moderate and within the limit given by Parkes and others, of alcoholic drinks, and keep them to it, and we could after a time ascertain their physical personal equations as to endurance of alcohol, some generalizations could be made from statistics. Where this has been done, as, for example, in the population of some asylums in Europe, the weight of evidence is rather against the absolute innocuousness of alcohol so used. The conditions there, however, are not those of the average population, and cannot be accepted

as applying directly to the question of the production of insanity by alcohol.

There may also be some little value to statistics of organic and senile insanities as occurring in known moderate drinkers and in abstainers.

The answer to the question is complicated by the uncertainties as to the exact toxic value of the drinks used; the other neurotic constituents besides the alcohol they contain; by the effects of climate, age, individual idiosyncrasies, etc.; by the possibilities of the late developments from long-continued dosing and those of hereditary transmission, and especially by the varying and often very liberal notions of drinkers as to what moderation is, and the tendency of even moderate drinking to lead to excess in individuals possessing any neurotic or hereditary taint.

A priori, it would seem probable that even the moderate use of powerful neurotic agencies would at least have no beneficial effect on a normally constituted brain, and that in one at all abnormal, when used simply as an indulgence and not under any scientific medical supervision, there might be serious chances of positive injury.

Our knowledge of the effects of alcohol in the production of insanity may, therefore, be summed up as follows:

1. Alcoholic excesses produce insanity.
2. They are directly the cause of at least 10 or 12 per cent., and probably of a somewhat larger percentage. Indirectly they are among the casual factors of a very large proportion of cases that cannot be directly credited to alcohol.
3. Moderate drinking is a very indefinite term, and this fact alone makes it impossible to utilize satisfactorily any statistics as to its effect in producing mental disease. There is, however, no reason to believe that moderate indulgence in alcohol is specially conducive to mental health in the average individual, and there is, on the other hand, a certain amount of physiological *a priori* presumption to the contrary. For the victim of hereditary taint or the neurotic it is undoubtedly often disastrous in its effects in this direction.

—H. M. BANNISTER, M.D., and ALDER BLUMER, M.D., in *American Journal of Insanity*.

CONSTIPATION IN CASES OF TEA-POISONING AND INEBRIETY.

Dr. Wood, in the *Brooklyn Medical Journal*, says that the plan which was found to give the best results was to commence by interdicting the use of tea, coffee, or any form of liquor. This must be insisted upon in the strongest manner, else the patients, like all inebriates, will be found indulging their annoying importunities for tea.

The alimentary canal should be thoroughly cleared out by giving a rather large dose of calomel and jalap (8 grains of each) at night, to be followed in the morning by Rochelle or Epsom salts (1½ ounces). This will assure an almost completely empty intestine and the absence of fermenting material, which, in a large majority of cases, produces a true auto-intoxication. The patient should be kept on hot milk for several days, the only medication being 4 grains of caffeine and 8 grains of sodium bromide every four hours. This quiets the irritable nervous condition, and the limited food gives nature an opportunity to regain lost tone.

The use of cascara sagrada is commenced at this time, the dose being from 15 to 40 minims every four hours. From the third to the tenth day the patient's diet is increased to the proper amount as demanded by the work performed, care being taken to eliminate such stimulating and non-nutritious articles as the starch and sugars, so far as possible.

The dose of cascara sagrada mentioned above may be increased and the time for giving it lengthened until the patient's bowels will move freely at least once a day by the employment of from ½ to 1 drachm at night.

In a number of cases, when this regularity has been observed, the following prescription will be found of great

use :—

R. Impassated ox bile, pure. ℥iij
Sulphate of quinine. ℥i
Sulphate of strychnine, gr. i.
Extract of cascara sagrada. ℥iij
Extract of euonymus. ℥ij
Extract of gentian, q. s.

Divide into forty capsules; 2 are used morning and night.

The inspissated fel bovis prevents to a large degree intestinal decomposition, accelerates peristaltic action, improves the intestinal digestion, and increases and hastens absorption. In being taken up by the liver it furnishes a fresh impulse and available material for the formation of new bile. The strychnine serves as a bitter tonic and a stimulant to the spinal centers, and the nerves of the splenic arcade and, in turn, the glands which they supply resume their former activity. The euonymus is a cholagogue cathartic and stimulates the liver to secrete a better quality of bile. Enough of the cascara is used with the euonymus to assure a good passage from the bowels daily.

In a number of cases Fowler's solution is given so soon as the bowels are moving daily, and often with excellent results. The preparation of cascara which is given the preference over all others is the aromatic fluid extract or elixir. This palatable method of giving the drug should be resorted to whenever it can possibly be secured, and many patients who are in a neurasthenic and hysterical condition and have a horror of all medicines will offer little objection to this preparation.

The nerves of the alimentary canal during tea intoxication are in a torpid condition from over-excitation, and the secretions of the glands have been very much reduced by the large amount of tannic acid in the tea infusion. No drug has yet been found which will so well restore the lost tone of the debilitated gut and increase the secretion and peristaltic action as cascara. The action of the drug on the bowels is not sudden; the more sudden acting cathartics, in the author's hands at least, have proved harmful. What is clearly indicated is a tonic laxative which will at the same time increase the action and secretion of the gastric, intestinal, and biliary organs.

In cases of constipation of short duration the capsule above given is not used, but dependence is entirely on the cascara. It has been found eminently satisfactory. In those cases where the intoxication has extended over a number of

years other medicinal agents must be added which will restore the lost bodily tone and correct functional perversion.

Treatment should not be stopped as soon as the patients feel better; in many cases it must be continued for several weeks. After the digestive troubles have been overcome and the system shows a tendency to establish an equipoise of health, a tonic pill is used for a considerable time. The constituents may be arranged to suit the advancement made. It is as follows:—

- R. Sulphate of strychnine, gr. i;
Hydrochlorate of caffeine,
Extract of damiana, of each, ʒi;
Hydrochlorate of cocaine, ʒi;
Extract of taraxacum, ʒss.

Divide into twenty pills, of which one should be given twice daily.

This excellent formula was used by Professor Porter of New York, with the most gratifying results, as a stimulating restorative in all complaints which had associated with them loss of bodily tone. The caffeine and damiana are nutritive tonics of no mean ability to the cerebro-spinal centers and the motor nerves which supply the splenic arcade. The cocaine is only added in those cases where the hyperæsthesia of the solar plexus produces the sinking sensation in the pit of the stomach which is much complained of. By this procedure permanent relief can be given to the truly deplorable condition of by no means a rare class of patients.

INEBRIETY A DEFENSE FOR CRIME.

Dr. Norbury, the eminent editor of the *Medical Fortnightly*, in a recent editorial remarks as follows: Since the days of Spartan lawgivers, it has been held that drunkenness is no excuse for crime: in fact many judges hold it is but an aggravation of a criminal act. Jurisprudence has been slow to accept the teachings of the disease theory of inebriety, and excepting in delirium tremens has never recognized such

a plea. In criminal relations the law seems more harsh in its practical application, than in civil or social relations. That this is but just is evident, when objectively we consider that the drinking man can voluntarily place himself in a position to do criminal acts. Many courts hold that intoxication, irrespective of degree and its effects, does not alter, modify, or excuse the act. Again, the rulings of the courts as to the mental unsoundness growing out of voluntary intoxication, occurring in a person previously sane, do not alter, modify, or excuse the act, or, more carefully stated, from acts committed by him in violation of law while in that state. (Not less than twenty decisions are cited in this country on this point alone.) However, one familiar with the clinical aspect of mental unsoundness, primarily or secondarily due to inebriety, knows that there are phases of the disease which demand a thorough investigation, ere such a ruling be declared. The law holds that there must be a motive and intention to constitute crime, and this should be a modifying factor, even in diagnosis, inasmuch as unconscious acts committed during the suspension of memory, in themselves indicate incapacity to act from motive. Again, it is proper that inquiry be made as to whether the accused was in a condition of mind to be capable of premeditation. Again, to formulate the diagnosis, it is necessary that all the circumstances attending the intoxication be considered; whether or not he voluntarily placed himself in such a position so as to commit crime; so as to use drunkenness for a defense; simulation of mental unsoundness is not unheard of under such conditions.

But there are conditions of mental impairment, recognized by alienists, which indicate a diseased mind, and as such relieve responsibility, and place the crime, where it belongs, under the head of insane acts. It is, or should be, held that such evidence of mental unsoundness growing out of intoxication should be admitted to explain the conduct and intent of the accused, especially in homicide. There are certain other conditions to be investigated in the study of

such a case, the chief of which is the existence of certain constitutional or specific diseases, which affect both the brain and nervous system, and which do modify the effects of alcohol, even when taken by a person previously sane. Such a specific disease (syphilis for instance) may in itself be the primary cause of the mental unsoundness, and intoxication merely a secondary phenomenon.

Again, heredity is a factor, the individual being endowed from birth with what is termed a narcotic diathesis, that is a precocious sensitivity to narcotics, whereby a defective nervous and mental organism results, which is evident by a loss of inhibitory power, thus making it extremely difficult for the individual to resist the potent influence of alcohol. Further, this sensitivity may be acquired, as is noticed from the influence which the before mentioned specific diseases have upon the nervous and mental organism. It is this class (both the hereditary and acquired) from which spring the cases in which it is not only justifiable, but scientifically correct, that a defense of mental unsoundness be made — the marked forms of the unsoundness of mind being delirium tremens and "mania-a-potu." During the continuance of either the patient is undoubtedly insane, he being quite unconscious of his actions, dead to all perception of right and wrong, and incapable of reasoning.

There are other forms of inebriety wholly within the domain of the disease, chief of which is dipsomania, a disease in which the periodical outbreaks of intoxication are uncontrollable — a blind, irresistible impulse to seek excessive indulgence in alcohol exists, and is not overcome by reason, will, or the thought of disgrace, family pride, etc. This form is often found in some of our most useful citizens — men of letters, culture, of refined tastes and manners, and who drink because they are impelled to it, and not for social pleasure. A medico-legal inquiry into such a case will always place the individual as a sick man — unsound mentally during his spree, and hence irresponsible. To this class belong the individuals wherein are found those freaks of unconscious-

ness, the most interesting of which is so-called "unconscious cerebration," characterized by the patient doing acts automatically, yet being without knowledge of his actual condition, at the same time appearing to be acting naturally. Such persons wander away from home, even remain away for months, engage in occupations entirely dissimilar to their previous occupations, and some day awaken to find themselves among strangers; all of this time they have no recollection of what they have been doing, the interval between the commencement of their attack and the return to consciousness being a complete blank. This cerebral automatism I have seen and know it to be possible. Medico-legal literature has recorded a number of such cases. Now, as to the application of these facts to the study of responsibility, this is the function of the lawyer and the judge; medicine merely states the facts, the law applies them. No case can be decided wholly upon its merits—it requires the patient study of all circumstances, and especially the function of diagnosis. That public opinion does sway the decision of a jury is a probability with some foundation, but upon the whole it is my belief, that a jury can, and will in the great majority of cases, be able to sift facts, from fancies or prejudices, and weave something tangible from the confusion occasioned by expert testimony, which, alas, is as yet no credit either to medicine or law, and let "justice be done, though the heavens fall."

INTOXICATED WASPS.

Concerning his observations of wasps which are addicted to the use of intoxicating liquors, Lawson Tait relates the following:

"I have been watching the wasps with great interest and have noticed the avidity with which they attack certain fruit when fully ripe, rotting in fact, and I have also noticed some of the peculiar results of their doing so. The sugar in some

fruits which are most attacked by wasps has a tendency to pass into a kind or kinds of alcohol in the ordinary process of rotting, a fact which is easily ascertained by the use of a still not large enough to attract the attention of the excise authorities. On such fruits, particularly grapes and certain plums, you will see wasps pushing and fighting in numbers much larger than can be accommodated, and you will see them get very drunk, crawl away in a semi-somnolent condition, and repose in the grass for some time, till they get over the 'bout,' and then they will go at it again. It is while they are thus affected that they do their worst stinging, both in the virulent nature of the stroke and the utterly unprovoked assaults of which they are guilty. I was stung last year by a drunken wasp, and suffered severely from symptoms of nerve poison for several days. In such drunken peculiarities they resemble their human contemporaries."—*Registered Pharmacist.*

CHLORIDE OF SODIUM INEBRIETY.

Dr. Woodward in the *Eclectic Medical Journal* writes as follows:

It is estimated that we daily consume about one hundred and forty grains of salt, which the author concludes is entirely too much. Persons who have eaten from one to three drams of salt daily for years are affected by several of the following symptoms:

1. A thickened and partial paralysis of the vocal cords, and an almost continual sore throat.
2. A pale and waxy color. A dryness of the cuticle, which perspires too freely upon exertion.
3. Constipation.
4. Chronic diarrhœa.
5. Abnormal appetite.
6. Retarded endosmosis and exosmosis.
7. Plethora and corpulency.

8. Thins the blood, causes slow circulation, and lowers the temperature.
9. Increases catarrh and prevents its cure.
10. Causes dandruff on the scalp.
11. Causes skin diseases.
12. Causes deposits and abscesses.

A number of cases are given with one or more of the above conditions predominant. In all the salt was restricted and depurating medicines given with good results.

In catarrhal diseases, the use of salt aggravated the symptoms; removing it effected a cure. The reason given is that the skin not acting, from the effect of the salt, the mucous membrane had to perform an extra function, hence the discomfort. Removing the cause cured the disease. It is stated that acrobats eschew salt; that the Parisians, twenty years ago, deprived inebriates of salt. In six months all taste for liquor was gone.

HEREDITARY INEBRIETY.

The editor of the *Temperance Record*, in a review of Lunacy Commissioners' Report, closes in the following significant words:

" A careful consideration of the subject of hereditary inebriety enables us the better to understand the significance of the figures we find in the Lunacy Commissioners' Report. Table 22 shows us that intemperance was the predisposing or exciting cause of the insanity in the case of 20.9 per cent. of all the males, and 8.1 per cent. of all the females admitted. Taking the general paralytics among the insane, intemperance was the assigned cause in 25 per cent. of the males, and in 18.8 per cent. of the females; and in the case of insane patients with suicidal propensity, intemperance was accountable for 20.9 per cent. of the males, and 7.3 per cent. of the females.

But the commissioners state in their report that 'hereditary influence again figures as the most potent factor in the production of insanity,' and the figures in the table inform us that it was accountable for the insanity of an annual average of 1,749 of the males, and 2,254 of the females who were admitted during the years 1890 to 1894, or 21.1 per cent. of the males, and 25.6 per cent. of the females. The diseased organization produced by intemperance does not always develop in the offspring a craving for drink. The drink-produced degeneracy takes other forms. But whatever the defects and tendencies drunken parents transmit to their offspring they are all in the direction of insanity — to which intemperance has in many respects so close a resemblance, with which it has such an intimate alliance, and to which it so frequently directly leads. And it is not to be doubted that in the case of a large proportion of the patients whose insanity is attributed to 'hereditary influence,' intemperance was the source of that influence towards insanity which is now recognized as hereditary. Looking down the list of 'causes of insanity,' we come upon 'previous attacks' as accountable for the insanity in 16.0 per cent. of the males, and 21.7 per cent. of the females; and upon 'unknown' as applicable to 18.8 per cent. of the males, and 16.6 per cent. of the females: and we maintain that there is every probability of intemperance being a considerable factor in these large proportions. If we attribute to intemperance no more than one-half of those who are reported insane under 'hereditary influence,' and one-fourth of the 'previous attacks' and the 'unknown,' we discover that of the males who find their way into asylums for the insane about 40 per cent. get there through drink, and of the females about 30 per cent. This means a large, but little considered, addition to our enormous drink bill; and who can tell what it means to the individual victims and to the family circles they taint, and whose happiness they destroy?"

The *Homiletic Review* gives a scholarly, clear presentation of the current thought in theological circles. Unlike the older literature, which was obscure and doctrinal, this journal gives a graphic, popular setting to the modern thought of religion. No better present could be made than a year's subscription. Write Funk & Wagnalls, New York city, publishers.

The *Hypnotic Magazine*, published by the Psychic Publishing Company at Chicago, Ill. This is devoted exclusively to hypnotism, its uses, and therapeutical possibilities. The August and September numbers contain some very suggestive papers of great practical interest. This study is clearly a very large one, and no doubt, in the near future, will bring to light remedial forces almost unknown at present. This is a very interesting magazine, and we heartily commend it.

The half-century of the publication of the *Scientific American* is celebrated in an anniversary number of great excellence and value. Reviews of the progress and history of many of the most wonderful inventions are given in a condensed form. This is literally one of the most valuable grouping of facts concerning these new discoveries which has appeared. This number in particular, and the journal as a weekly periodical, is unrivaled among the scientific publications of the day.

Moodies Magazine of Medicine, edited by Dr. Bell, and published at Atlanta, Ga., has made a very successful start to combine literature and medicine, and thus to reach the physician's family and associates. There is, no doubt, a vacant place in medical literature along this line which skill and genius can fill. Dr. Bell has an open field and no rivals in sight, but an ever-increasing crowd of admirers will welcome every issue of this new effort, and rejoice at its success. Send for a copy of this venture in medical journalism.

Some Physiological Factors of the Neuroses of Childhood. By B. K. Rachford, M.D., Professor of Physiology

and Clinician to the Children's Clinic, Medical College of Ohio; member of the Association of American Physicians and of the American Pediatric Society, etc. Cincinnati: The Robert Clarke Co., 1895. This little work of a hundred and twenty pages should be read by every practical physician. In a clear concise style the author gives a very suggestive study of the following topics: "The Normal Functions of Nerve Cells," "The Physiological Peculiarities of the Nervous System of Infancy and Childhood," "Fever and the Variable Temperatures of Childhood," "Heat-Dissipating Mechanism," "Autogenetic and Bacterial Toxines," "Venous Condition of the Blood," "An Impoverished Condition of the Blood," "Reflex Irritation," and "Excessive Nerve Activity." In connection with studies of the early causes of inebriety this work brings out many facts not well known, and will be found of great value to students in this field.

The leading citizens of Cape Town, Africa, have petitioned the colonial secretary to establish an asylum for inebriates. The secretary has expressed his warm support of this movement and promised that the government will aid it in every way. A bill has been prepared appropriating money and making laws for control, which will be presented at the next Parliament.

Editorial.

SUBJECTIVE AMNESIA IN INEBRIETY.

Defects of memory are very common in inebriety, but usually they do not attract much attention. Alcoholic blanks, called trance states, in which the person moves about apparently acting with a normal consciousness of his conduct and all the surroundings, but literally is in a somnambulistic state, have been studied in their medico-legal relations.

While these extreme cases are now recognized in many instances, periodical, acute, and partial amnesias are practically unknown. A blank of memory during the period of intoxication will clear up after a few days, and events be fairly clear which happened during this period. In other cases the memory is apparently unimpaired, and often events and conduct during the drink period are sharply impressed on the mind. The fact is new to literature that in these toxic states the thought and conduct of the inebriate is a blank, while the acts, conduct, and associations with others are clearly remembered. Thus, in a certain case, after a period of drinking, amnesia of all subjective phenomena will occur, but the subjective life and surroundings continue clear and distinct.

Later, when this passes off, the mind will be strained to explain and account for this anomaly. The impression prevails that an apparent full consciousness of all the subjective phenomena is associated with an equal subjective realization of all thoughts and conduct. That a memory of what others said and did to him is accompanied with a memory of his own conduct and thoughts. But often the opposite is true. The one may be clear and the other obscure or a total blank. An inebriate may describe with reasonable accuracy where he

went, who he met, and what happened during the drink craze, but he utterly unable to remember what he thought or said, or what reasons or motives he had at this time. He may remember clearly meeting certain persons, going to certain places, and certain conversation addressed to him, but his conversation and conduct are not remembered. An illustrative case was that of a hotel-keeper and periodical drinker. His periods lasted two weeks, and, after the second day, all recollection of his conduct and thoughts vanished. Yet, he remembered being invited to go here and there by certain friends, and recalled the advice of his wife and physician, certain business contracts and counsel, and appeals to do this or that, and to loan money, or help others, were distinctly recalled; but he could not say whether he carried out the suggestions or advice, or acted on the appeals of others. He remembered going about to barrooms with others, but could not tell whether he drank or what he said. He finally disputed a contract made during this period. He admitted that he remembered the conversation of others and going to consult an architect concerning the property, but he could not recall his reasons or motives, or conversation at the time, or the act of signing the paper. It was found by a study of this case that, on other occasions similar unusual acts and strange oral and verbal contracts had been made. Had his memory been as clear of subjective events and promises as it was of objective events he would have manifested anxiety to correct the errors he made when sober. The difficulty of determining these most complex amnesias is not so great as it appears to be. A man remembers distinctly the conduct of others towards him, and dwells on it, but his own acts may have been criminal, and, if memory were equally clear on this, he would seek to cover up or repair the injury at once. On the contrary, he is oblivious, showing partial and subjective amnesia. A study of the case brings out this fact, and places the diagnosis beyond question.

The practical significance of this amnesia is to call attention to the statements of inebriates and the wide sources of error

complicated with them. This new phase of memory palsy will explain many statements now attributed to vice and deceit. Also the anomalous conduct and statements of reformed inebriates.

PSYCHICAL PERIODICAL INEBRIATES.

I use this term to describe a class of persons who only drink to excess on special occasions, and in particular surroundings. At other times they are strict abstainers, and often very bitter opponents of spirit taking. One of these classes drink on holidays, such as Christmas, New Year's, Fourth of July, and other national holidays. Another class drink only on occasions of great excitement, of sorrow, of joy, such as weddings, political meetings, court trials, accidents, triumphs in business. A third class drink in the country, and away from all observation, or in certain cities, and at certain hotels or houses. A fourth class drink at the seashore or in the high mountains, or at the change of seasons, as the beginning of winter or summer.

Another class are solitary, midnight drinkers, who never use spirits except in the most favorable conditions, and in seclusion at midnight. Others never use spirits except in the company of certain persons, who seem to provoke an intolerable desire to become intoxicated. Others are always intoxicated when out on fishing and hunting excursions. A certain class never drink only at class or other reunions, or at certain club dinners, and thus the list might be extended, and would include many very strange conditions which appear as special exciting causes. These cases never use spirits except in these particular environments, which seem to break up all judgment and control for the time. Often the holiday drinkers escape by isolating themselves from all sources of excitement on these occasions. Going to the country, seeking quiet, with total change of surroundings and living, and by this means the

drink symptom is controlled. As soon as the holiday is passed all desire for spirits disappears. The states of excitement are obscure which rouse this drink craze, and pass away as quickly as they began. This excitement may continue, but the drink paroxysm dies out. One man drinks to stupor at the beginning of a political campaign, then abstains, although exposed to the same or greater excitement for weeks after. Another becomes intoxicated with some great successes of life, then never drinks again, unless the conditions are radically changed. Certain surroundings of large cities, and particular hotels and houses, rouse the drink paroxysm. One cannot visit New York, or another go to Washington, Philadelphia, or Chicago without becoming intoxicated, and this continues a certain fixed time, then ceases, or lasts until the surroundings are changed. Such persons never use spirits elsewhere, and these obscure psychical states seem to destroy all self-control at the particular place and time. The mountain and seashore inebriates, who never use spirits at any other place, display the same impulsive craving for intoxication. Such cases complain of headache, nervous trembling, and depression, with extremes of appetite, insomnia, and drowsiness, as preliminary to the drink craze. Change of surroundings brings sobriety and relief. The solitary, midnight inebriates, who never drink unless the conditions are most favorable for seclusion. Such cases will resist all temptations to use spirits in company; then go away to some secluded place and drink at midnight to stupor. If they make a mistake and the seclusion is broken up, or their presence becomes known, they become sober at once. The influence of certain fixed and particular surroundings dominates the central organism in a strangely mysterious way. These, and other drinkers who are never seen to use spirits, except in special conditions and surroundings, are neurotics with peculiar susceptibilities to unknown psychical influences. Some of these cases develop into well marked inebriates, with all the common symptoms; others remain a lifetime subject to these nerve storms. Many of these persons early recognize these

particular exciting causes and avoid them. Others never realize their meaning, and give way to the impulse to drink on the occurrence of the special exciting causes. The impression prevails that all the exciting causes are under the control of the will, and that it is always vice in the moral sense which dominates. A study of these cases indicates some very subtle causes, both in the surroundings and brain centers. Some obscure degeneration provokes these psychical nerve strains, from unknown special conditions and surroundings. A person who drank only on the Fourth of July was deceived as to the exact day, being in the country away from noise and excitement; he was strangely nervous and excited all that day, but fully recovered after a night's sleep. This indicated that something more than the memory of the past, and the dominance of the idea of drinking that day prevailed.

There are, undoubtedly, many physical and psychical causes which combine in provoking the drink impulse at certain times. These cases occur among the most active workers in the higher circles of human activity, and it is somewhat singular that they have not attracted attention or been studied in any systematic way.

INEBRIETY IN THE ADIRONDACKS.

The recent popularity of the great northern wilderness of New York as a residence for consumptives has also attracted a number of inebriates who hope, by isolation and outdoor life, to outgrow the drink impulse. The latter expectation is unrealized. Literally, this region is occupied by a large number of persons who use spirits to prevent and check consumption, and is really a dangerous resort for inebriates.

The medical advice given frequently to persons who are suffering with premonitory phthisis "to go back to the mountain regions, live out in the open air, and drink freely of spirits," is followed by many persons every year.

The cessation of the acute symptoms encourage the hope of cure, hence, spirits are used more freely. After a time, if hemorrhage does not follow, with alarming prostration, a degree of insomnia and mental feebleness comes on which sends them home in most cases to die. They always blame the climate and conditions of surroundings for their failure to receive benefit. In one instance, recently, at one small hotel there were eight consumptives who were partially intoxicated most of the time, acting probably on advice to use all the spirits they could. They were not under the care of any physicians, but had been sent off alone to treat themselves. Five of these cases used cod liver oil with the spirits. In a large hotel, and at one of the most romantic resorts, the bar trade was not only enormous, but each invalid came provided with a private supply of spirits. Very little intoxication was noticed, but a larger number of persons were in a semi-stupid state, or mildly hilarious much of the time. The drinking men who hope to keep away from spirits by going to this region, are astonished to find spirits used so freely by travelers and invalids, as so-called medicines, and also to find that they can drink more spirits with less acute intoxication. These men soon excuse their drinking as medicinal and preventive for consumption, and by being in the open air most of the time, can avert the apparent toxic effects more readily than in lower altitudes.

Many of these persons return and become inebriates, and die suddenly from pneumonia or some acute disease.

Those who use spirits freely in these regions from medical advice or other reasons are usually incurables, and die soon, either of acute tuberculosis, nephritis, or pneumonia, following inebriety. When spirits are continued low forms of dementia appear, with often fatal termination. The general degeneration, which, centered in the lungs, is concealed by the alcohol, and intensified into other and more diffused conditions of dissolution. The use of alcohol in consumption as a preventive is dangerous. In a large proportion of cases it is fol-

lowed by degenerations more serious and fatal than the original disease.

The intimate relation and rapid alternation from inebriety to consumption, and consumption to inebriety, is a well-observed clinical fact. Both belong to the same family group of neuroses, and the reckless advice to use all the spirits possible to prevent the one, while it may not always be followed by the other, will certainly intensify and provoke degenerations that are never removed.

Inebriety in high altitudes is more intense and rapid in its progress. General progressive anaemia and exhaustion follows. In some instances this is marked by intense cerebral irritation and delirium, in others by acute inflammatory affections. To send inebriates into high altitudes is not safe unless the conditions and surroundings are most favorable, and the history of the case promises relief by this change.

PARETIC STATES IN INEBRIETY.

The paralyzes noted in inebriety are obscure and often complex forms of what is termed general paralysis. They are practically progressive cerebral degenerations and are marked by organic changes in the encephalon and its coverings, or in the spinal cord and membranes, and sometimes in the sympathetic ganglia. It may include many forms of cerebral degeneration, which occur independently, and go on in steady progression or with halts and long intermissions. Pathologically it is often found to be a chronic meningitis or sclerosis of the connective tissue of the brain or degenerative lesions of the great sympathetic, a myolitis, a diffuse, chronic, interstitial, menigo-, myelo-, encephalitis, and, lastly, an affection beginning in the brain cortex or in the cord, or in the neurine organs of special sense, or in the peripheral nerves.

From this it will be evident that general dementia is an essential symptom of the disease.

Paralysis following alcoholic excess, while having all the marked symptoms of these cases, will vary in progress and duration. Often it is associated with epileptiform attacks, and appears to have reached extreme stages at once, then changes materially under appropriate treatment. One of the distinguishing symptoms, according to Regis, is the parietic character of the pupils, in some cases absolutely immobile, especially the one that is most dilated. Besides this the pupillary aperture is very often misshapen, oval, notched on its borders, the coloration of the pupil loses its sparkle and transparency, usually dull and cloudy, the visual acuteness is ordinarily diminished. The mental state is usually confused and stupid, the inequality of the pupils remain. The exaltation is temporary and changeable, with hallucinations and paroxysmal delusions. The affections of speech and ataxy of movements, associated with tremors and trembling of the muscles of the face and legs, vary widely.

Many cases have associated syphilis, sunstroke, and malaria, and it is difficult to determine which of these causes are prominent, and whether the degeneration from alcohol is an exciting cause alone. The typical forms of paralyzes may follow an excess of spirits, and pass away, when a degree of restoration follows, or appear in the case where alcohol is used constantly in so-called moderation.

All cases of inebriety in which expansive deliriums, and general exaltations of the feelings are present, may be called paralysis. Associated with this are present many mixed degrees of defective muscular and motor activities, and incoordinations of words and defective articulation.

Many varied physical and psychical symptoms appear and disappear, or continue in different degrees of intensity. If the origin is alcoholic great changes of symptoms will follow appropriate treatment. If of syphilitic, saturnine, malarious, or from lesions of fever or sunstroke, much can be expected from treatment. Final recovery is not to be expected, halts

and changes of the symptoms will occur, but the degeneration which has become so manifest will leave a permanent impress on the brain. It is difficult to differentiate a form of paralysis that is due to alcohol alone, but a careful study of the clinical history of persons who use spirits will reveal many symptoms that are common to paralysis. The terms parietic dementia, progressive palsy, with peculiar delirium, and psychical symptoms of degeneration, describe many cases of inebriety. Evidently, further study will clear up the present confusion of terms and symptoms that are so interwoven as to be difficult to separate and understand.

ANNIVERSARY MEETING OF OUR ASSOCIATION.

A memorial meeting will be held at the New York Academy of Medicine, New York city, Friday evening, November 20, 1896, to celebrate the twentieth anniversary of the publication of the *Journal of Inebriety*, and the twenty-sixth year of the Association for the Study and Cure of Inebriety.

A generation has passed since this Association and *Journal* began their work. Inebriety has become a province of science, and is studied from a higher and wider point of view. Its literature has come into full recognition, as outline tracings of a new field of pathological psychology. The closing years of the century bring into view an increasing number of problems, the solution of which must come along these lines of research. Most of the pioneers and early workers in this field have passed away. It is proposed to devote our annual meeting exclusively to a historic review of the circumstances and conditions which led to the formation of the Association and the *Journal*, and the founders and their efforts to open this new realm of science.

The following program of addresses and papers will be presented on this occasion:

The First Meeting of the Association and the Original Members, by Dr. L. D. Mason, Brooklyn, N. Y.

The *Journal of Inebriety*, its Inception and Birth, and the Early and Later Literature of the Subject, by T. D. Crothers, M.D., Hartford, Conn.

The First Asylum for Inebriates and its Founder, Dr. J. E. Arner, by Dr. C. H. Shepard, Brooklyn, N. Y.

The First State Asylum for Indigent Inebriates and its Work, by Dr. M. E. Hutchinson, Foxboro, Mass.

The First Asylum for Opium Inebriates, its Growth, Literature, and Progress, by J. B. Mattison, M.D., Brooklyn, N. Y.

The First Home for Inebriates and its Work, by Dr. V. A. Ellsworth, Boston, Mass.

Empiric and Charlatan Efforts to Cure Inebriates, by N. Roe Bradner, M.D., Philadelphia, Pa.

The Abuse of Alcohol in Medicine and its Historic Influence, by Dr. I. N. Quimby, Jersey City, N. J.

The Origin and Growth of Asylums for Inebriates in Great Britain, by Dr. Norman Kerr, London, England.

H. W. Glasenap's investigations show that cocaine can be detected either as such or as ecgonine after thirty-three days' exposure to the influence of putrefying flesh or human blood. In cases of poisoning, however, if death has ensued within two hours, it will be found unaltered, but if more than four hours have elapsed before death, it will be found (in the urine) as ecgonine.—*Journal of the London Chemical Society*.

Mathews Medical Quarterly is to be changed to *Mathews Quarterly Journal of Rectal and Intestinal Diseases*. This is to describe exactly the contents and purpose of the journal. This is the only journal in the English language in this field, and is a very valuable and useful publication.

Clinical Notes and Comments.

THE USE OF WHAT DRUGS AND MEDICINES WILL RENDER AN APPLICANT UNINSURABLE, AND WHY ?

George R. Chitwood, Jr., M. D., Indianapolis, Ind.

Many of the medicines given in health will, if long continued, produce a diseased condition of the animal organism, either affecting a part or the whole of the system.

The effect, or effects, of almost any single article known as a medicine proper, that is, a remedy used by the physician in disease, whether as a palliative or otherwise, will, if carried to the extent of forming a habit, so derange the system as to make the individual uninsurable.

Medicines are equally as deleterious as the alcoholic beverages, and are just as likely to form a habit; and the effects left by them are equally as damaging to the physical and mental health.

To undertake to give a list of such medicines is no small task, as in my opinion such a list would include a large proportion of our therapeutical and chemical agents. However, I will include the bulk of the narcotics, some of the tar products, quinine, opium, morphine, cocaine, belladonna, Indian hemp, digitalis, arterial and nervous sedatives: the active cathartics, diuretics, mineral and vegetable acids, alkalies, antispasmodics, and others.

Many physicians are aware of the bad effects of opium in any of its forms, quinine, cocaine, certain of the cathartics,

as aloes, gamboge, podophillin, calomel: how by their over and unnecessary action they may and do leave the mucous membranes of the intestinal tract in an irritated and diseased condition, which condition is frequently the cause of so many of our chronic diseases affecting this portion of the system.

Among a few of the diseases resulting from "over-physicking" may be mentioned chronic constipation, hemorrhoids, chronic diarrhoea, prolapse of rectum, occasional intussusception of bowels, and, in a few instances, paralysis of the intestines, particularly the rectum.

And so may a long and continuous use of certain of the diuretics leave their bad or diseased effects, such as a want of power to control the act of urination, paralysis of the neck of the bladder, congestion, and other diseases of the kidneys, and, occasionally, desquamative inflammation of the kidneys (Bright's disease). From a long and continuous use of opium, morphine, cocaine, and a few, if not all, of the tar products, we have, as a result, a slow poisoning of the brain, blood, nerves, and a badly deranged condition of the secretory system, with progressive and frequently rapid loss of flesh, bringing the users of these remedies down to living skeletons, with imbecile and childish intellects, and digestive organs as feeble as babes. Besides, sleep is interrupted to such an extent as to make a good night's rest a thing of the hazy past—a stranger to these strange and mysteriously-acting persons.

While alcoholics leave their diseased effects upon the brain and the digestive organs, their long-continued use quite often produces delirium tremens, and those with sympathetic imaginations, brooding over the horde of snakes, imps, and devils that crowd so thickly around their fancy, are driven to self-destruction, thinking thereby to escape these imaginary foes.

Quinine is well known to affect the brain, the mind, the hearing, the digestive organs, the blood (congesting it), and otherwise deranging the system.

The use of most medicines, if continued for a definite

period, may fix a habit on the users; and while many of these habits might easily be cured, most of them continue, simply because the use of the remedy gives an ease, which, with all medicine users, is sufficient excuse for continuing it. On this account we are inclined to believe that all who have medicine-taking habits are poor risks for life insurance, and should be rejected, as many of this class possess weakened, if not diseased bodies, which make them very liable to contract disease. All of these sickly beings have their lives shortened, and this alone should be a prime excuse for refusing an insurance policy, if insurance companies are seeking for long-lived applicants. We hold that these medicine-gorging people are not suitable risks for any kind of insurance, regular life or accident. They belong very properly to the graveyard class, for they are going to the cemeteries fast enough to be called "scorchers."

It would be almost as safe for life insurance companies to take risks on those afflicted with the first stage of consumption, as on some of our medicine fiends, as they are no more likely to cease their habit than the consumptive is to recover.

Habit, when once formed, requires a will force that but few possess to break. While those with a medicine habit may keep it a secret, they go on, realizing the slow, sapping, and killing effects, but too feeble, mentally and otherwise, to conquer it. Many of this class seek insurance, feeling that their lives are being shortened by their habit, and grow daily more anxious to keep the wolf from their poor wives and helpless little ones. Their habits make their lives dreams, and so agreeable to them that they do not care to ever again wake to their former selves, and so they go on, taking their "good medicine," building air castles that carry their fancy to the skies, almost to St. Peter's heavenly gate, hoping, if such beings ever hope, that when this earthly strife is ended, they will forever be freed from their debasing habit.

The medical examiner for a life insurance company should be an expert as regards his work with an applicant for insur-

ance. This quality is necessary for the good of all concerned in such lines of business. He should carefully study, wherever the opportunity presents, all of the applicant's habits. Of course, we admit this cannot always be done, as most examinations are hurriedly made.

But in a few instances, at least, the examiner might make a plea of more time, then shadow, as it were, the applicant, and endeavor to learn whether he has a habit injurious to his health or not. This suggestion is only made whenever the examiner entertains a doubt in regard to applicant's ability to pass a successful ordeal.

The medical examiner should never hesitate to question the applicant closely, just the same as the practising physician does his patient.

It is well known that those who seek insurance conceal everything from the examiner that might act against their chances for insurance, and hence it behooves the examiner to be ever on his guard. This class of applicants will say and do everything in their power to give themselves a "healthy standard," and the truly good and honest examiner must be on his guard, keeping his eyes and ears open for any misleading statement.

Finally, it is our humble opinion that any one addicted to a medicine habit, particularly if of long standing, and with any visible physical or other signs that the general health is being infringed upon, is unfit for life insurance, as this class is very risky, being liable to end their existence at any moment—voluntarily or otherwise.

Those free from the habit of drink, or medicine dieting, are risky enough, for many of this class will deceive, or attempt to deceive, the medical examiner as regards hereditary tendencies to disease and other transmitted conditions that are known to shorten life.

We believe it is safe to reject all who possess habits that are known to produce functional or organic diseases, and as most bad habits tend to derange health, life is shortened, there-

by greatly tending to embarrass, if not bankrupt, many life insurance companies. Reject all such, unless life insurance companies are established on the purely philanthropic and charitable order, with an unlimited capital reserve; then unlimited policies are in order.

VINO-KOLAFRA.

The note on this preparation of kola nuts, published in the last number of the Journal, has brought a number of inquiries to this office for further particulars. We reply that our experience is simply limited to cases where alcohol is withdrawn, and during the period of the gradual reduction of opium. In the former it seems to be particularly valuable. The following case is a fair illustration: An inebriate of long duration, much debilitated, and filled with morbid fears of dying if spirits were removed, was given two ounce doses of VINO-Kolafra every three hours. The spirits were removed at once, all fears disappeared and he became calm. Recovery followed, the VINO-Kolafra was stopped at the end of a week, and all desire for spirits disappeared. There seemed to be in the wine a sedative action, and in the kola a stimulating power, which overcame the depression from spirits, giving new force for building up and restoration.

The value as a substitute for spirits is beyond question, and undoubtedly it has some peculiar power to neutralize and overcome the cell and nerve irritation which demands narcotics for rest.

In two cases of opium addiction, the same stimulating tonic power was noticed. The intense depression seemed to pass away, from smaller doses, when oftener repeated. To our many correspondents we urge that this drug be tried in the first stage of treatment of alcohol and opium inebriety, using no other drugs at the time, then carefully noting its effects. As to its further use, experience must determine its value.

It can in all probability be relied upon as anti-alcoholic, and a remedy which destroys the desire for spirits at the time.

The Brunswick Pharmacal Co., of New York city prepare this drug, and they have already accumulated quite a literature, which is worthy of much consideration.

A very valuable report has recently been drawn up by a French specialist on the spread of alcoholism and its effects. In the various institutions of the Department of the Seine, in France, 775 persons suffering from alcoholism were received in 1894—624 men and 151 women. The form of alcoholism in the case of the males comprised 282 cases of alcoholic delirium, 332 cases of chronic alcoholism, and 10 cases of absinthism—a form of disease which appears to be almost exclusively confined to France and Algeria. Among the women there were 90 cases of alcoholic delirium, 60 of chronic alcoholism, and 1 of absinthism. In reviewing these cases, Dr. Magnan says: “As a consequence of alcoholism, we find an increase of general paralysis, and, what is still more serious, an augmentation in the number of idiots, of youthful epileptics, whose family history reveals almost always the alcoholism of the father, and sometimes of the mother, and frequently of both.” It becomes, therefore, a social duty, and a necessity in the interests of public health, to endeavor by all the means in our power to stay the ravages of this scourge, which is worse in its effects, because these effects are more far-reaching than the most devastating epidemics.—*Charlotte Medical Journal*.

We have called attention to *Somatose*, a meat nutrient prepared by W. H. Schieffelin & Co., N. Y., and believe that this far exceeds any beef preparations, in various disorders of the stomach and general anaemia. It is put up in the form of crackers, and is both palatable and strengthening as a food.

Protonuclein is a new remedy for all asthenic conditions, and is practically a tissue builder. It increases the white blood corpuscles, and is antoxic in its power.

Peptenzyme is a digestant of great power, and groups the ferments necessary to carry full digestion.

These new drugs are put on the market by the famous manufacturing firm of *Reed & Carverick*, which in itself is a guarantee of their value and power.

Parke, Davis & Co. have made a most valuable addition to the list of remedies for dyspepsia in *Taka-Diastase*. This is practically a specific for faulty digestion of starch, where pepsin is of no value. These disorders are now most successfully treated, by special remedies for each condition. *Taka-Diastase* is the great remedy for this special condition, of failure to digest starch.

Antikamnia has become a popular drug in England. As an analgesic, antipyretic and anodyne drug, it has come into general use in this country. For certain neuralgias and headaches following inebriety, it has almost a specific effect. It has become one of the drugs which cannot be dispensed with in general practice.

W. Irving Hyslop, M.D., 4408 Chestnut St., West Philadelphia, Pa., says: "I have used *Celerina* quite largely both in private and hospital practice, and with gratifying results. It is void of repugnant taste, and is readily retained by the stomach. My experience with *Celerina* has been confined chiefly to its use in nervous diseases, particularly loss of nerve power, and the opium habit, in which conditions it has served me well, and I shall continue to prescribe it both in private and hospital practice.

In the treatment of atonic dyspepsia, as in that of other stomach disorders, regulation of diet is the first step to be considered. Next is the selection of food which consists of nutritious and easily-digested articles. When the powers of digestion are weakened, special aids to this function are plainly indicated, and for this, *Maltopepsine* (Tilden's) in combination with strychnia and the biters, is the most potent of remedial agents.

One of the great table waters of this country is the *Arcthusa Spring Water* of Seymour, Conn. Send for circulars.

We call attention to *Borinine*, a new and well-known form of condensed food which has attained great prominence as a

stimulant. Its use as a restorative is very general in many hospitals, and will undoubtedly come into very general use.

We have never ceased to call attention to *Horsford's Acid Phosphate*. It has proved to be almost a specific in many cases of inebriety.

The celebrated firm, C. F. Boehringer & Soehne of Germany have introduced a new analgesic and sedative remedy called *Lactophenin*, which promises to be very practical and useful as a harmless hypnotic. This firm, through their New York house, are presenting many new remedies, and fine preparations of old ones, that attract much attention. One of these drugs is Ferratin, which feeds the blood, another, Papain, a vegetable digestive.

Wheeler's Tissue Phosphates is a nerve food, as well as nutritive tonic of superior value. It has been before the profession for twenty years, and its value is fully recognized wherever it is used.

The Worcester Fire Pail Co is an excellent extinguisher having the merit of simplicity, effectiveness, always ready for use, and always practical and to be depended upon.

Listerene is the standard antiseptic, of uniform, and of accurately determined qualities. It is becoming more and more widely used every year, and is numbered among the household remedies essential for common emergencies.

Dr. Macloud of Glasgow, in discussing the use of sedatives in insanity, said: "The most efficient hypnotic I have found in these and allied cases is a combination known as Bromida. We have found this formula to meet more conditions than any other. Its value is beyond all question.

Arsenauro has proved to be of exceptional value in several cases of inebriety, in which general anaemia existed, with a history of syphilis. After the removal of alcohol, this drug was exclusively used. In two instances a profound disgust for all spirits appeared. In one case an old eczema of long

duration disappeared, and in three cases headaches and symptoms of great weakness passed off. In all, a profound change of nutrition and improvement of all the organic processes followed. In three cases the origin of the drink craze was in all probability the reflex irritation from the poison of syphilis, and Arsenauero acted like a specific. The acute symptoms disappeared very quickly after the drug was used. In one case malaria appeared to be an early exciting cause, and this drug acted equally as prompt.

It would seem from this experience that Arsenauero is a powerful tonic, and anti-syphilitic remedy, acting directly on the trophic nerves, and general nutrition. Also neutralizing and antagonizing the poison of syphilis and the degenerations which follow from it. This would be a confirmation of the common experience of all practitioners who use arsenic.

Inebriety is always a profound constitutional disorder, that can only be successfully treated by great alternatives like arsenic, mercury, and allied remedies. There can be no question that Arsenauero is a most valuable drug in inebriety, and may be used in all cases with great confidence. We shall be pleased to report a larger experience with it in the future. The Charles Roome Parmlee Co., who prepare Arsenauero, also have Mercauro, a similar preparation of mercury, arsenic, and bromide.

Maltine and Coca Wine has proved of great value in many cases, where profound exhaustion and anaemia are present, and great dread of removing spirits. This has proved an excellent medicinal substitute.

Derangements of the Liver.

HORSFORD'S ACID PHOSPHATE

HAS been used with good effect in diseases of the liver and biliary disorders, where an acid treatment is indicated, and has especially proved a desirable medium to employ in chronic hepatic affections. By its action it stimulates the liver and promotes an increased flow of bile.

The Acid Phosphate is far superior to nitromuriatic acid of the pharmacopœia, in that it serves to assist digestion, and promotes in a marked degree the healthful action of the digestive organs.

Dr. O. G. CILLEY, Boston, Mass., says:

"I give it in all cases where there is derangement of the liver, with the most remarkable success. With my patients it has agreed wonderfully."

Send for descriptive circular. Physicians who wish to test it will be furnished, upon application, with a sample by mail, or a full size bottle without expense, except express charges.

Prepared according to the directions of PROF. E. N. HORSFORD, by the

RUMFORD CHEMICAL WORKS, Providence, R. I.

Beware of Substitutes and Imitations.

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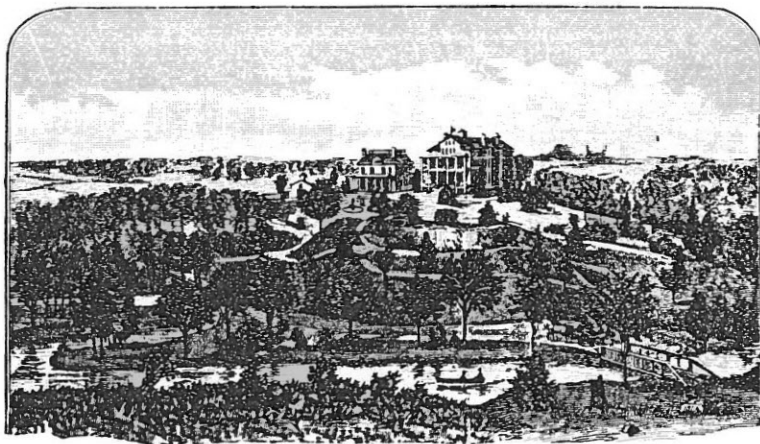
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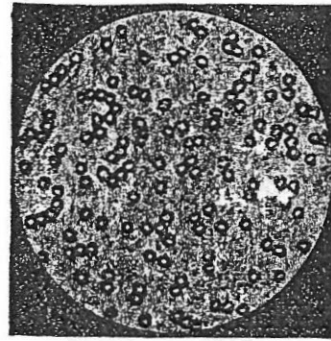
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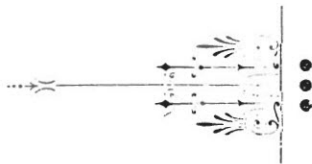
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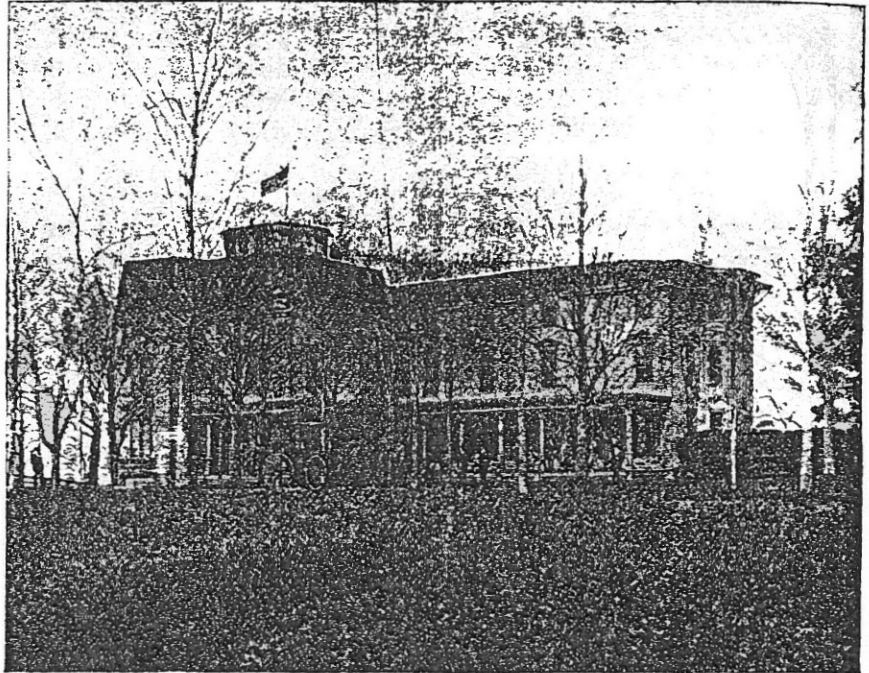
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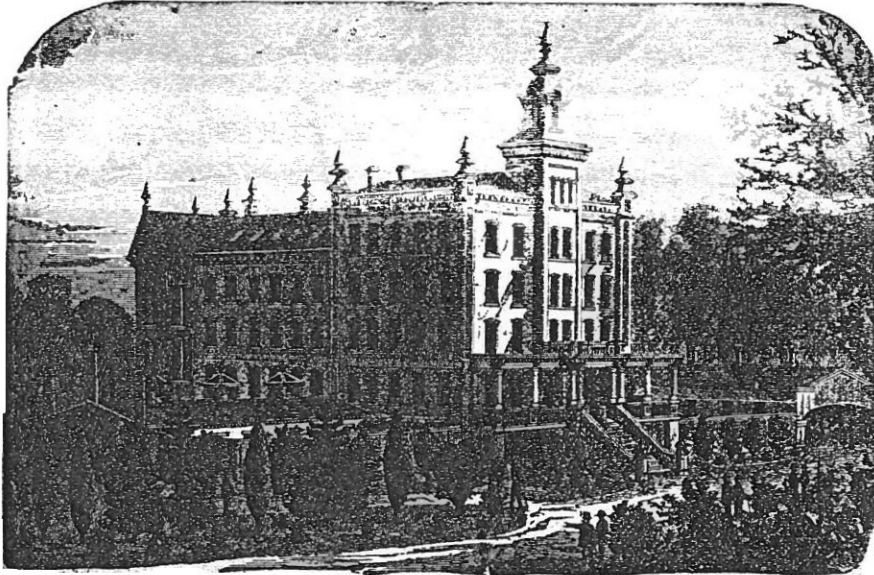
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