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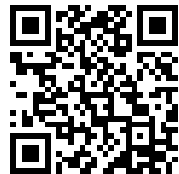
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The Journal of inebriety

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Subject No.	On page	Subject No.	On page

THE QUARTERLY JOURNAL
OF THE AMERICAN ASSOCIATION
FOR THE STUDY AND CURE OF INEBRIATES

OF
INEBRIETY.

*Published under the Auspices of the American Association
for the Study and Cure of Inebriates.*

T. D. CROTHERS, M. D., Editor,
56 FAIRFIELD AVENUE,
Hartford, Conn.

Vol. XVII, 1895.

HARTFORD, CONN.:
THE CASE, LOCKWOOD & BRAINARD COMPANY, PRINTERS.

EUROPEAN AGENCY: BAILLIÈRE, TINDALL & COX,
20 KING WILLIAM STREET, ON THE STRAND, LONDON, W. C.

VIA AIR MAIL
TO THE
VIRGINIA COACHES

RC 367
F3

172141

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Therodges Mason

THE
QUARTERLY JOURNAL OF INEBRIETY.

Subscription, \$2.00 per year.

Vol. XVII.

JANUARY, 1895.

No. 1.

This Journal will not be responsible for the opinions of contributors, unless indorsed by the Association.

THE PROBLEM OF HEREDITY IN REFERENCE
TO INEBRIETY.*

By THOMAS MORTON, M.D., M.R.C.S.

The problem of heredity, by which I mean the transmission of parental and ancestral characters to each new generation of organic beings, is one of transcendent interest in biology at the present time, not only because it seems to hold the key to a large part of evolution, but on account of its relations to many social, moral, and even political and religious questions.

If I am right in assuming a general belief or impression among temperance men that a tendency to inebriety may be inherited—and I believe few of us doubt it—we cannot be indifferent to the controversy which is raging on the subject of heredity in general. The laws of heredity, whatever they may ultimately prove to be, must necessarily govern the transmission of inebriety, and the facts of inebriety must occupy a place in the body of phenomena, by induction from which those laws will be formulated.

* Read Oct. 4, 1894, before the English Society for the Study of Inebriety at London.

We know that every individual, even the most complex, takes its rise from the division and subdivision of a single cell or its nucleus, constituting the essential part of a bud or a fertilized ovum, in which latter case the nucleus itself results from the union or conjugation of a male and a female pronucleus, derived respectively from each parent. But how is it that this extremely minute particle of matter can convey to the new being, into which it is destined to develop, the precise configuration of the parent form, nay, the very peculiarities, temperaments, and predispositions, not only of an individual, but of a family or breed.

The older and still popular idea was that the reproductive elements were, in a vague way, a sort of quintessential distillation of the parent body; as Buffon puts it, "*un extrait de toutes les parties du corps*"; and, related to this, but elaborated to a high degree, and based in the true scientific spirit on the widest induction from masses of facts relative to reproduction in its various forms, development, reversion, and inheritance, both of ancestral and acquired characters, is Darwin's splendid, but confessedly provisional, hypothesis of "Pangenesi," which, to use his own words, "implies that the whole organization, in the sense of every separate atom or unit, reproduces itself. Hence ovules and pollen grains — the fertilized seed or egg, as well as buds — include and consist of a multitude of germs thrown off from each separate atom of the organization;" or, in another passage, "that all organic units, besides having the power, as is generally admitted, of growing by self-division, throw off free and minute atoms of their contents, that is, gemmules. These multiply and aggregate themselves into buds and the sexual elements, their development depends on their union with other nascent cells or units, and they are capable of transmission in a dormant state to successive generations."

Wholly different in its fundamental conception, and sharply contrasted with this, is Weismann's theory of the "Continuity of the Germ Plasm," so called, which now, it may be said, holds the field, and which teaches that "the

germ cells are not derived at all, as far as their essential and characteristic substance is concerned, from the body of the parent, but directly from the parent germ cell, from which the individual has also arisen ; so that heredity is brought about by the transference from one generation to another of a substance with a definite chemical and, above all, molecular constitution," and, "from this identical starting point an identical product necessarily arises."

Perhaps this further quotation will bring out his meaning rather more clearly, "in each ontogeny (or generation of a new individual) a part of the specific germ plasm contained in the parent egg cell is not used up in the construction of the body of the offspring, but is reserved unchanged for the formation of the germ cells of the following generation ;" and it is interesting to compare this with the words of Mr. Francis Galton, who, in 1872, anticipated Weismann by saying that "each individual may properly be conceived as consisting of two parts, one of which is latent and only known to us by its effects on his posterity, while the other is patent and constitutes the person manifest to our senses." This idea of the *soma* or body as, so to speak, a sort of appanage of the germ plasm, runs through all Weismann's work, and he even, in metaphor, compares the germ plasm to a creeping underground root stock which throws up leaf shoots at intervals.

It is obvious that, on such a conception as this, the latent qualities of the germ plasm must entirely control and dominate the sensible characters of the body, which expresses them, but can have little or no reciprocal influence on the germ plasm. And accordingly we find that Weismann and his school almost wholly disbelieve in, and take great pains to dispute, the hitherto received idea of the transmissibility of acquired characters, which Darwin himself and most English biologists have assumed to play a considerable, though subordinate, part in the process of evolution.

And, with reference to this question, he draws a distinction, which is certainly valuable and tends to clearness, be-

tween characters acquired or supposed to be acquired in the ordinary sense by the effects of the use or disuse of organs, by habits of life, or the reaction of the organism under the various influences of the environment, and those which are acquired in the course of evolution by spontaneous variations controlled by natural or artificial selection. A moment's thought will satisfy us that these latter are really potentially present in, and depend upon, molecular changes in the germ plasm, before they make their appearance in the *soma* or body, and he proposes to call them *blastogenic*, in contradistinction to the former, which he terms *somatogenic*.

It must be at once evident that an inebriate tendency arising from the intemperance of a parent must fall under the *somatogenic* category, and consequently be disallowed by Weismann and his school, so that if his theories are to be accepted in their entirety we must say good bye to a belief in inebriate inheritance as ordinarily understood.

But are they to be accepted in their entirety? When I spoke just now of the theory of the Continuity of the Germ Plasm as holding the field, I did not, of course, mean to imply that it might now be regarded as established, but merely that it occupies such a position that round it the battle chiefly rages, and upon its proof or disproof the issue of the controversy must mainly turn.

It has the support of great English authorities, among whom I may name Alfred Russell Wallace and Ray Lancaster, but it is of course incompatible with the teaching of Herbert Spencer, who, as is well known, attaches the greatest importance to the influence of the environment, not only on the individual but the race, and it traverses that of Darwin himself, who, in repeated passages, down to a late period of his life, admitted that "a great value must be given to the inherited effects of use and disuse, some also to the modifications in the direct and prolonged action of changed conditions of life." Prof. Vines has, also, published a searching criticism of Weismann's views; and Prof. Turner describes himself as "unable to accept the proposition that *somatogenic*

characters are not transmitted," and adds, "I cannot but think that they form an important factor in the production of hereditary characters." Even Francis Galton who, as I have mentioned, himself anticipated the theory, makes a similar admission ; though he says, "the effects of use and disuse of limbs and those of habit are transmitted to posterity in only a very slight degree."

I cannot help thinking that here is the weak point in Weismann's teaching, and that he will not succeed in making good the absolute seclusion of the germ plasm from all somatic influences, upon which he insists with the warmth of a partisan and with excessive ingenuity. But his teaching is probably in the main true, and at any rate it has to be reckoned with by those who wish to retain that most powerful argument for abstinence which is based upon the assumed transmission of the physical results of intemperance to generations yet unborn.

How, then, do *we* stand who not only wish this but are convinced, from what we have ourselves seen of inebriety, that there is truth in the assumption on which the argument is based.

It seems to me, that the time has come for reconsidering the assumptions on this subject which pass current among us, defining them more carefully, and attempting a positive demonstration of so much of them as can be proved ; and this, not only in the interests of truth, and for our own satisfaction and encouragement in our warfare with drink, but in order to compel the attention of that enormous public, of all grades of intelligence, who will not take the trouble to listen to or understand us, and who more or less consciously justify themselves by regarding us as prejudiced enthusiasts. If what we have believed and taught on this particular subject cannot be maintained in all its fullness we ought to know it, and modify our teaching accordingly ; and if it can the biologists ought to know it, and it is sure of a hearing, as it bears directly upon the vexed question of the transmission of acquired characters.

The object of my paper is not to attempt any such demonstration as I have suggested, but after pointing out, as I have done, the importance of its being given at the present juncture in the course of scientific thought and of temperance advocacy, to indicate the chief difficulties which beset the task, and the lines upon which I think it should be attempted.

1. In existing statistics on the subject it does not seem to be sufficiently recognized that it is one thing to establish the fact that the children of intemperate parents are apt to be afflicted with degeneracy and various neuroses, and another to prove that they inherit a special proneness to inebriety. The class of observations available for the latter purpose is much narrower and more difficult to verify than for the former. Both are available for temperance advocacy, but the latter is what the scientific world wants and will listen to.

2. It is not sufficient to show that a large number of degenerates and inebriates have intemperate parents, or, conversely, that intemperate parents produce a large number of degenerates and inebriates, without knowing, as a standard of comparison, what proportion of the general public have intemperate parents, or, conversely, what proportion of degenerates or inebriates average parents produce. The late Prof. Demme, of Stuttgart, evidently recognized this, and based upon it some excellent work in the comparison of the direct descendants of ten families of drunkards, and ten with temperate parents. The results were very striking as to degeneracy, but less so as to inebriety.

3. It must be remembered that mere degeneracy or insane neurosis involving defective control, not necessarily depending on alcoholic abuse in the parents may show itself in the form of alcoholic excess if circumstances favor that particular form of excess instead of some other. Many typical inebriates have an insane parentage, and such cases go to prove inebriety to be a neurosis, but do not prove the transmissibility of an acquired taste for alcohol.

4. It seems to have been taken for granted that, when the link of parentage exists between two inebriates, the link of heredity may safely be assumed; but we know well that drinking habits will of themselves establish a condition of inebriety in a person of sober parentage, and the children of drunkards are more likely than others to acquire an inebriate constitution in this way, from early familiarity with alcohol. This is an objection peculiarly difficult to meet, even in those strong cases where two or three brothers or sisters are similarly affected; as the only cases which would afford a standard of comparison would be those of the children of temperate parents brought up by intemperate relatives. A somewhat similar objection might be urged as regards degeneracy. The mortality among the children of drunkards is known to be enormous, from the poverty, disorder, and misery in which they are commonly brought up, and many of those who survive may naturally be expected to be puny and feeble in body and mind, independently of any congenital defects they may bring into the world with them.

So much for the objections which, I conceive, fairly lie against assuming as a matter of course that acquired inebriety may be transmitted to descendants. I think that if they are to be fairly met it will be necessary to sift and rearrange the data which we already possess, with constant reference both to some such standards of comparison as I have suggested, and to the distinction between general degeneracy and the special inebriate condition. And they should be supplemented by further observations upon Demme's excellent plan. After all, the proof of such a proposition must necessarily be of a cumulative kind, and rest upon the convergence of several lines of argument, neither of which is absolutely conclusive in itself. And there is one special set of cases which afford perhaps the strongest argument of any. I mean those of remarkably precocious inebriety, if, as I believe, they are never met with except in the families of intemperate persons. Observations on this point are much needed and would be of great value.

Let us now, quitting fact for theory, turn again to the biological aspect of the question, and, admitting almost completely Weismann's contention that the characters impressed on the germ are, so to speak, antecedent to and independent of those which its bearer's life history may impress on his or her *soma*, and that there does not exist any mechanism by which these latter can be impressed upon or registered in the germ, let us enquire whether there does not nevertheless exist a mode in which the bearer's drinking habits may, and indeed must, affect it or the being into which it is destined to develop. "The blood is the life," and even the exclusive and independent germ plasm must share in the life of its bearer so far as to be nourished and kept alive by the same blood stream. And if this blood stream is constantly poisoned at its source by a large infusion of a soluble substance inimical to healthy cell life, and especially to that which is youngest and that which is most complex, should we not confidently expect the tremendous but exquisitely delicate potentialities of the germ cell to suffer some disorder? And, if this be admitted of the quiescent unimpregnated germ, which has simply to maintain and multiply its life like some unicellular organism, what shall we say of the impregnated germ, which has entered upon its career of development, and is drawing to itself large and hourly increasing supplies of nourishment, for many months, out of the maternal blood, which *ex hypothesi* contains alcohol in pathological percentage.

Do we not have here an ample and abundant explanation of the greater potency of inheritance through the mother, which seems to be acknowledged by all observers of alcoholic degeneracy, and which ought to be kept clearly in view in the future collection of statistics?

And we may even go further, and see with the mind's eye the genesis, not only of degeneracy, but of inebriety. We know that one of the characteristic properties of alcohol is to establish a tolerance of itself in tissues where its presence was at first resented as a disturber, and before long to

become apparently so indispensable to their smooth working that its temporary absence is felt to be intolerable. Where alcohol is a constant constituent of the nutritive fluid, it is easily conceivable that the nine months of intra-uterine life may suffice to establish in the tissues of the embryo such a tolerance of alcohol, or intolerance of its absence, as may be readily revived again from time to time during childhood, by the taking of alcohol, and finally re-established in later life. The tissues seem to have a sort of memory of their own, in virtue of which they, as it were, recognize and respond to familiar stimuli when again brought into their presence after an interval.

Mr. President, I am painfully conscious that I occupy to-day the unpopular position of *advocatus diaboli*. But, as the result of that functionary's labors is usually to establish more firmly and indisputably the sanctity of the person whose claims to canonization he opposes, so I trust that my criticisms will lead in the end to the clearing up of all doubt and confusion on the subject of hereditary inebriety, and to the placing of it beyond all cavil or question.

DISCUSSION.

The president, Dr. Kerr, after expressing his high opinion of the philosophical and scientific merits of the paper, and concurring in the suggestion of a re-arrangement of all the facts that could be collected as to cases illustrating transmission of inebriety, submitted that Weismann's theory of the non-transmissibility of acquired characters was untenable from even the comparatively few facts as yet ascertained. It was extremely improbable that the germ plasm could remain through generations uninfluenced and unmodified by the human envelopes in which it was for a time encased. The theory was merely a hypothesis, but he was afraid it was incapable of disproof as it was of proof. The conditions of both appeared to him impossible. They could not experiment in breeding with human animals. He had seen cases of abnormal family trees which he thought

negated Weismann's proposed law. The Jukes genealogy in America and the Phultain in Britain were illustrations. The great desideratum appeared to the president to be the accumulation of facts. Probably to our successors must belong the deduction of general laws from a sufficiently wide induction of facts.

Dr. H. Rayner complimented Dr. Morton on his paper, which aimed at getting a clear scientific basis for our views on inebriety in a scientific manner.

Dr. Rayner agreed with the president in antagonism to Weismann's theory, and in considering it incapable of proof, but held that disproof was possible.

Recent microscopical investigations had by means of chemical reagents shown distinct changes in nerve structures as minute as those of the germ cells, in persons dying under the influence of alcohol, and an extension of the observations to the germinal cells would probably give similar results. Should this be the case, Weismann's theory would appear to be untenable.

Dr. A. M. Holmes, Denver, Colorado:—

Mr. President, Ladies and Gentlemen :

It is a rare pleasure to be present with you to-day, and hear the valuable paper that has been read. I would much prefer not to enter into the discussion of this difficult subject, since my opinions on many of these points are very imperfectly formed. I may say, however, that for some time past I have been much interested in the problems of heredity, and believe that so long as there are honest differences of opinion among students of biology, just so long should those who are interested in the mention of these problems avail themselves of every opportunity to study them. If the suggestions that have been so ably presented in the paper to-day are adopted, they will hasten the day when many of these problems will be less complicated.

In *The Contemporary Review* for October, in an able article entitled "Weismannism Once More," Mr. Herbert Spencer reviews the discussion between himself as maintain-

ing that acquired characters are inherited, and Professor Weismann, who believes in the "All-sufficiency of Natural Selection," and repeats the statement which he has often made before, that "the question whether acquired characters are inherited is the most important question before the scientific world."

Those who oppose the theory of the "transmission of acquired characters," agree with those who favor it, that there are certain characters that are transmitted, but that these are potentially present in the germ plasm—stable qualities or so-called "fixed characters" of the plasm.

Those who accept the theory of evolution must grant that at some remote period the so-called "fixed characters" were acquired. Consequently I am unable to reconcile a belief in the theory of evolution with disbelief in the theory of the "transmission of acquired characters."

Can there be any other alternative than that these "fixed characters" either always existed, or that they have been acquired?

If they have always existed in what Professor Weismann terms the "Continuity of the Germ Plasm," what function, then, shall we ascribe to evolution?

Or if they have been the result of the slow process of development—the effect of use, the influence of well-selected environment, together with natural selection—then we must not discard the theory of the "transmission of acquired characters" altogether.

After a rather careful observation of the phenomena of life, I am very frank to acknowledge that unless I accept the theory of the "transmission of acquired characters," I am unable to account for the marked resemblance between certain characters which are often observed in parents and their offspring, which, to all appearances, have been acquired by the one and certainly are possessed by the other.

When we adopt a more systematic method of collecting accurate data concerning the influence of heredity, I have little doubt that its anatomical, physiological, psychological,

as well as its pathological aspect will be much more readily traced from parent to offspring.

Mr. President, I should like to state before closing — if you will indulge me a moment longer — that I have been greatly pleased to note the magnitude of the work that your society is accomplishing, especially its efforts in tracing the hereditary effects resulting from the habitual use of alcohol.

One of the most genuine pleasures that I have experienced since I have been in your city, has come from reading the very excellent work on “Inebriety” by your distinguished President. His effort in tracing the influences of heredity into the realms of pathology, is destined to change many of the opinions formerly held concerning the liquor question, and the dreaded disease — Inebriety.

Mr. President, allow me to thank you for the courtesies of this society.

Mr. President :— You are aware that for the last thirty years I have been connected with an establishment for the cure of inebriety, and am therefore in a position to speak upon the hereditary taint to which the majority of these cases owe their origin. But I will give you four particular cases, each of which is marked with its own peculiarities.

The first case came under my notice some twenty-five years ago. A lady, the wife of a professional man in London, was placed under treatment, remained a full year, and returned home cured. For twelve years she did not touch stimulants ; but, at the end of that time, being ill, she was ordered to the seaside, a medical man there being in attendance on her. Not being aware of the previous history of the case, he ordered her stimulants, and in a few months time the drinking mania was again developed, and she was, for the second time, placed under treatment. Her friends, however, would not allow her to remain for more than two months, and therefore, when she returned home, she relapsed and died.

The next case brought under my notice is a peculiar one ; for the whole of the female branch of the family, with one

exception, had the taint of inebriety well marked, but the male portion entirely escaped. The family consisted of five daughters and three sons. Two of the daughters died from the results of their habits, the third's brain has partly given way, and the fourth was placed under treatment twelve years ago, and was perfectly cured. But she has informed me recently that she has never entirely lost the desire for stimulants, and if a strange medical man is called in and orders her wine, she always tells him of her hereditary tendency, and, in that way, protects herself from the disastrous consequences which would result from her carrying out his instructions.

The third case is that of a lady who informed me that when she and her brother, the two eldest children, were born, the father was very fond of taking large quantities of stimulants. But after that he became a total abstainer, and five other children were born. The two eldest, that is, she and her brother, were confirmed inebriates all their lives, while the five younger ones were all total abstainers.

The fourth case is that of two children of a confirmed-inebriate mother, a boy and a girl. Their father was obliged to separate himself from his wife on account of her habits, and the two children were brought up total abstainers, and the daughter remained so up to the time of her marriage, when her husband, who was a merchant, wished her to take wine. After she had been taking it about two years, she became a confirmed inebriate like her mother, and was placed under treatment. The brother informed me that he was always careful himself not to take stimulants, fearing that it might lead to the same disastrous results as in the case of his sister.

I think, Mr. President, these four cases, selected from hundreds of well-marked cases of hereditary inebriety which have been brought under my notice, go to prove that there is a strong hereditary tendency in the majority of cases placed under treatment; and it also shows, that, where the hereditary tendency does exist, it does not die out. It may

remain dormant, as I have shown in three of the cases quoted, but it can be brought again into activity by the taking of stimulants. Therefore, the only safety is for the patients to acknowledge that they have this hereditary tendency, and never touch stimulants for the remainder of their lives.

Dr. Murray looked upon the eagerness with which infants and little children looked for liquor from their mothers when in public houses, as a proof of heredity.

Mr. Raper had been considerably comforted by the fact stated by the President and supported by other medical men, that sometimes children of drunken parents, shocked at the example set them at home, become resolute abstainers, as he had been formerly discouraged by the fear that alcoholic heredity would be too strong to be overcome by many of the young.

Dr. Morton, in reply, on the general question of Weismannism, pointed out how difficult it is to prove that any transmitted character has had its origin in habit or reaction to environment, and not in so-called spontaneous variation consequent on the continual blending of different stocks in sexual generation. It had been said that Weismannism was incapable of demonstration, but the same might have been said of Darwinism.

As to inherited inebriety, all the cases cited confirmed him in the conviction that the evidence, though ample, required re-arrangement. It was true that drunkards' children were often strict abstainers. Such cases might be cited against inebriate inheritance, but they proved nothing, as such persons might be incapable of moderation in drink. They were, however, a great encouragement against pessimism on this subject.

ON THE VALUE OF REPEATEDLY WASHING
OUT THE STOMACH AT SHORT INTERVALS
IN CASES OF OPIUM OR MORPHINE
POISONING.

BY PROF. L. P. HAMBURGER,

Pharmacological Laboratory of Johns Hopkins University.

Among the many researches that have been made on the physiological, therapeutical, and toxicological properties of morphine since its isolation by Sertürner in 1817, those of Marmé,* Leineweber,† Alt,‡ and Tauber,§ demonstrating its elimination by the gastric mucous membrane, take a leading place. The medical profession in general does not seem, however, to be familiar with the practical applications that may be made of this discovery, and it is worth while to record the following case of opium-poisoning in which a chemical examination was made of the urine and of successive stomach washings, especially since the results agree with those found by the above-mentioned investigators in their experiments on animals.

On the evening of May 2, 1894, 660 cc. of a sherry-red fluid was sent from the hospital to the pharmacological laboratory, the liquid being part of the washings of the stomach of a Chinaman, Lee Hee, who had attempted suicide.

A report was requested as to the kind of poison that had been taken. The fluid was clear, with a few bits of orange pulp floating in it, and it smelled faintly of crude opium; it was filtered and gave the characteristic meconic acid reaction,

* Untersuchungen zur acuten u. chronischen Morphinvergiftung. Deutsche Med. Wochenschr., 1883, nr. 14.

† Ueber Elimination subcutan applicirter Arzneimittel durch die Magenschleimhaut. Inaug. Dissert., Göttingen, 1883.

‡ Untersuchungen über die Ausscheidung des subcutan injicirten Morphins durch den Magen. Berl. Klin. Wochenschr., 1889, nr. 25.

§ Arch. 5. exp. Path. u. Pharmakol., Bd. 27, S. 336.

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namely, the red color with ferric chloride or ferrous sulphate which persisted on the addition of hydrochloric acid and also when boiled. A second portion of the filtered fluid was made alkaline with sodium hydrate, shaken up with ether, the ether removed and evaporated, the yellowish-white residue from the ether dissolved in a little acidulated water and this solution examined for alkaloids. It responded perfectly to the following reagents: platinic chloride, iodine in potassium iodide solution, sodium molybdate sulphuric acid (Fröhde), potassium-bismuth iodide and potassium-mercuric iodide. The presence of meconic acid and of alkaloids being demonstrated, it became evident that we were dealing with poisoning by opium.

Lee Hee is supposed to have taken the opium at about 10 A. M., and the quantity taken we estimated to be at least ten grams, judging from the amount that still remained in the little jar which was known to have been full when the suicide was attempted.

About half-past five Lee Hee was brought into one of Prof. Osler's wards in a comatose condition, and it was evident from the state of his respiration and circulation that he was not likely to recover. At this time the stomach was first washed out and the process was repeated until the physicians in charge had reason to think that there was no longer any opium in the stomach. A second lavage was made at 8 P. M. and a third at half-past eleven, a quarter of an hour before death. The fluid secured in these last two washings was colorless, and from this fact it may be concluded that all the crude opium had been removed by the first washing, though unfortunately this conclusion could not receive positive proof, since the last portion of the first washing was not kept separate from the rest and chemically examined. All three washings were examined for opium and morphine and the results, which will presently be given, at least demonstrate the practical value of repeated stomach washings, even after all ordinary signs of opium, such as color and odor, are no longer found.

At 6 P. M., 75 cc. of urine was removed by the catheter and submitted to a chemical examination by Landsberg's method for the detection of morphine in the urine.* The residue finally obtained was a mixture of urea and morphine. No difficulty was experienced in identifying the former; it appeared in the characteristic four-sided prisms with pyramidal ends. In addition to these crystals of urea there were seen numerous very small rhombic prisms. Whether the latter were certainly crystals of morphine was not determined; nevertheless, the chemical tests demonstrated the presence of morphine in considerable amount. This difficulty in separating morphine from urea is not peculiar to this case,† but is due to the fact that both behave toward solvents in much the same way. Control tests showed that urea does not interfere with the following morphine reactions. A minute quantity of the residue dissolved in water and treated on a porcelain dish with a drop of ammonium molybdate, gave a yellow precipitate, and the addition of a drop or two of concentrated sulphuric acid caused that beautiful play of colors, violet, blue, and green, which solution of morphine give under the same conditions (Fröhde). A fragment of iodic acid added to the diluted residue was reduced and the free iodine recognized by shaking with chloroform. In this way the presence of morphine in the urine was demonstrated. In the present case, therefore, there was no difficulty in proving the elimination of at least a part of the ingested alkaloid through the urine. Yet there is probably no point in the physiological history of morphine which has given rise to more controversy than its presence or absence in this excretion. The controversy involves not only the immediate experimental result but the more general problem of the fate of morphine in the body. Thus, some observers, after demonstrating that the alkaloid was present in the urine, claimed that it passed through the body unchanged; others, failing to find it, argued that it suffered a destructive oxidation and could not be demonstrated

* Pflüger's Archiv, Bd. 23, S. 425 (1880).

† Neubauer u. Vogel, Analyse des Harns, Th. 1, S. 359.

as morphine in the urine. But it is now generally admitted that after large doses of the alkaloid a small quantity appears in the urine.

It is in the stomach, however, that the elimination of morphine proceeds most actively. The practical importance of this gastric excretion will be evident upon considering the results of the stomach washings in the present case.

Of these there were three, as already mentioned. The first was the sherry-red fluid, giving meconic acid reactions, and upon treatment by the method of Stas, alkaloidal reactions. This fluid was treated like the urine and a similar brown residue was obtained. This residue was dissolved in water, acidulated with hydrochloric acid and again evaporated. During this evaporation a white precipitate separated out, which upon examination was found to be calcium phosphate, one of the inorganic constituents of opium. Having removed this salt, the residue was dissolved in warm absolute alcohol and allowed to evaporate spontaneously. Morphine crystals of a definite type were not obtained, but the solution gave beautiful morphine reactions, reducing iodic acid, responding to Fröhde's reagent, and giving a pink color with sulphuric and nitric acids (Husemann).

As already stated, it was believed that all the opium was removed during the first washing, and the fact that the second washing came out colorless seems to confirm this view. Nevertheless, the latter liquid gave fine alkaloidal reactions, but did not respond to the tests for meconic acid. In other words, at the first washing the ingested but unabsorbed opium was removed; between this first lavage and the second the alkaloids had accumulated again. How? It could only have been through an excretion by the gastric mucous membrane. Nor did the elimination of the poison stop at this period; for the third washing, made several hours later, colorless also, still gave good reactions.

The meaning of these results must be clear. They point to the excretion of the alkaloids of opium by the mucous membrane of the stomach and suggest a practical application

of this fact. If, as has been shown, these alkaloids, and morphine in particular, are excreted into the stomach, then washing this viscus repeatedly and at very short intervals to remove the alkaloids as fast as they are eliminated, must certainly be a life-saving process, whether the poison has been taken by mouth or hypodermically. Poisoning by the latter method has not, as far as can be ascertained, been treated in this manner, in spite of Alt's demonstration of the presence of morphine in the stomach washings of men who had received 3 cg. of the hydrochlorate subcutaneously. The quantity of the alkaloid capable of being removed by repeated washings has been estimated at almost one-half. Tauber also recovered 41.3 per cent. from the fæces of dogs to whom morphine was administered subcutaneously but where the stomach had not been washed out. Alt has ascertained that for dogs, doses of more than 10-12 cg. morphine pro kilo may be considered lethal; 17 cg. pro kilo almost invariably caused death. On the other hand, if, immediately after the injection, the stomach was washed and the lavage continued for forty-five minutes, then 10-12 cg. pro kilo never produced serious symptoms, and indeed with 17 cg. and even 20 cg. pro kilo the symptoms of poisoning were not so severe as when 12 cg. were administered without repeated washing. Two dogs were saved after the injection of so large a quantity as 24 cg. pro kilo. This evidence goes to prove that the excreted morphine is reabsorbed and that it still has toxic properties; and may not the frequent relapses following apparent recoveries from overdoses of morphine* also furnish proof of such reabsorption? By a continuous lavage the exchange that goes on between the gastro-intestinal mucous membrane and the general system would be interrupted, and in proportion as the alkaloids excreted by the mucous membrane are removed the effects of their reabsorption would be avoided. Conformably to the results of Alt's experiments,

*See, for example, Souchon: "On relapses following recoveries from overdoses of injections of morphine," *N. Ori. M. & S J.*, XIV, pp. 437-39, 1886-87; Taylor: "*Lancet*," Vol. 1, p. 937 (1884).

the lavage should be repeated at short intervals, and the sooner this can be done after the opium or morphine has been taken the better. In the case cited in this paper no successful outcome could be anticipated, because too long a time elapsed between the taking of the opium and the beginning of the treatment.

In connection with this subject it may be well to repeat Kobert's† suggestion, that a chemical examination of the faeces should be made in cases where the morphine habit is suspected but is denied by the patient and where for various reasons it is difficult to secure conclusive evidence of the fact in other ways.

THIS incident is sent to us by a railroad surgeon and vouched for as correct. An engineer who had been on the road twenty years was laid up with influenza two years ago, and since then has drunk spirits to excess at intervals, especially at night. The superintendent paid no attention to this and permitted him to go on his usual daily runs. One day he came in to the end of his route very much intoxicated, ran up to the yard, and left his engine in the proper place, then staggered back towards the depot muttering. The train he brought in went on, when suddenly he sprang on a waiting engine and started down the road after the train. The yardmaster conceived this to be a drunken freak, and wired to turn the switch off from the main line at a distant station. This was done just in time to avert dashing into the rear of the passenger train. The engine was ditched and the engineer escaped unhurt and was taken to an asylum with acute mania, where he is still confined. A very serious accident was narrowly averted and the stupidity of permitting an inebriate engineer to run a train was literally criminality of the most flagrant type.

† Lehrbuch der Intoxikationen, p. 561.

TOBACCO INEBRIETY, AND ITS EFFECTS ON THE HEART.*

BY JAMES K. CROOK, A.M., M.D.,

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As far as we can learn the use of tobacco was adopted by the Spaniards from the North American Indians early in the sixteenth century. In the year 1560, it was introduced into France by the Ambassador of that country at the Portuguese court, Jean Nicot, whose surname is perpetuated in the generic title of the plant. It is believed that Sir Walter Raleigh, who learned the qualities of tobacco from the Virginia Indians, introduced smoking into England. The alluring weed met with a warm response in the affections of male humanity, and it soon became one of the ruling passions. In the various habits of chewing, smoking, and snuffing it is now largely consumed in every country on the globe. In return for this somewhat dubious blessing European civilization taught the noble red man the potent virtues of firewater — not an uneven exchange. The limitation of the habit to males is, no doubt, to a large extent, due to the difficulty which the fair sex find in overcoming the first repugnance to its odor and taste, and probably also to a natural higher moral status. That tobacco, in some cases, produces a deleterious impression on the human economy has been recognized by medical men of all ages since it came into use. There can be no doubt that these bad effects have become greatly augmented by the recent enormous increase in the cigarette habit. On consulting medical literature, however, we are struck by the paucity of contributions of real value on the subject, most that has been written being from the pens of moralists and clergymen, or medical men with some theory to advance or defend. Among the notable exceptions to this rule may be

* Read before the Clinical Society, March 17, 1894.

mentioned the classical Fiske Prize Fund essay of 1885 by Dr. Hobart A. Hare, which practically exhausted the subject of tobacco in many of its aspects up to that date. Almost all the text-books and systems of medicine refer to the injurious consequences of the excessive use of tobacco, but usually in the most general terms, and leave the reader with but little practical knowledge regarding these effects. Let us pause for a moment and consider the chemical nature of tobacco. The following analysis by Possett and Reinmann, although somewhat antiquated, is with certain modifications about the most trustworthy extant at the present day.

Nicotine (in 100 parts),	0.060
Volatile oil,	0.010
Bitter extractive matter,	2.870
Gum and malate of lime,	1.740
Chlorophyl,	0.267
Albumen and gluten,	1.308
Malic acid,	0.510
Salts of potassium, calcium, and ammonium,	0.754
Silica,	0.088
Water,	88.280

It will be seen that the acrid, volatile principle, called nicotianine, subsequently supposed to have been discovered, has no place in this analysis. This substance has long since been proved to have no existence as a separate entity, although the mistake of enumerating it among the chemical ingredients of tobacco has been perpetuated in the last (1894) edition of the National Dispensatory. The proportion of nicotine in the analysis (less than one-sixteenth of one per cent.) is undoubtedly too small, as subsequent investigators have ascertained it to be present in proportions varying from two per cent. in Havana tobacco to more than eight per cent. in French tobacco. In an analysis of tobacco smoke in 1871, Vohl and Eulenberg found pyridine, lutidine, collidine, picoline, and other bases of the same series, besides ammonia and traces of ethylamine. In passing the vapor through potassa solution, hydrocyanic, hydrosulphuric, acetic, butyric, valerianic, carbolic, and probably other acids were retained. These chemists found no nicotine in smoke, but all subsequent observers state that it is invariably present in greater or less quantities. Dr. Krause, of Annaberg, besides nicotine,

sulphuretted hydrogen and cyanogen, found a considerable proportion of carbon dioxide, and he believes that much of the poisonous effects in young smokers is due to this gas. From twelve experiments made by Dr. Krause, it appears that the quantity of carbon dioxide varies from 5.2 to 13.8 per cent. in the smoke, the average being 9.3. These investigations of Krause have been subsequently fully verified by the chemical experiments of Dr. W. L. Dudley, of the Vanderbilt University. As the consumer of the weed never gives out all the smoke he takes in, it follows that a certain amount of carbonic oxide poison is inevitable. Most authorities, however, agree that the alkaloid nicotine represents the chief poisonous ingredient of tobacco smoke, and it is to that substance we must look when dealing with this subject. This principle, discovered by Vauquelin, but first isolated by Pos-selt and Reinmann about 1828, is a colorless, or nearly colorless, fluid, having a specific gravity of 1.048. It has an exceedingly acrid, burning taste, even when much diluted; is very volatile, inflammable, and possesses an odor recalling that of tobacco. It is strongly alkaline in reaction, and is capable of forming crystallizable salts with acids. In sufficient doses nicotine is an intense depressant poison, and is said to stand second only to prussic acid in the rapidity of its fatal effects. One-fifteenth of a grain by weight has caused death in a human being, and one thirty-second of a grain is fatal to cats and dogs. In a case mentioned by Taylor, in which an unknown quantity of nicotine was taken with suicidal intent, the victim dropped instantly to the floor insensible, gave a deep sigh, and was dead in about three minutes. The symptoms produced by small doses of nicotine represent fairly well those of the plant generally. Few tobacco habitués will forget the horrible nausea, giddiness, vomiting, and feeling of general wretchedness which characterized the inaugural chew or smoke. These effects may be reproduced at any time by the exhibition of nicotine in sufficient quantities. If the amount taken be large, to these symptoms are added burning pain in the stomach, purging, free urina-

tion, extreme giddiness, passing into delirium, a rapid, feeble, and finally imperceptible pulse. Cramps in the limbs, absolute loss of muscular strength, a cold, clammy skin, and finally complete collapse, terminating in death. Basing his calculations on the amount of tobacco produced in the United States, and the amounts exported and imported, Hare estimates that each consumer of the weed in this country uses, on an average, 505 grains of tobacco daily. Taking four per cent. as the average proportion of nicotine, we find that the ordinary smoker is daily exposed to rather more than twenty grains of one of the deadliest poisons known to science. To be sure, only a small percentage of this poison finds its way into the patient's system. As nicotine is very volatile, some of it is lost by heat in smoking, some is caught by the fibres of the pipe (in pipe smoking), while a great part is lost in the smoke and by expectoration. That a certain quantity of nicotine does enter the circulation, both in chewing and smoking, is readily shown by its speedy and marked effects in those not habituated to the use of tobacco.

Having thus ascertained that this plant contains a virulent poison in large quantities, and its vapor at least one additional, highly noxious agent in carbonic oxide, the question arises, Does the daily introduction of these agents into the human system give rise to injurious effects, and what are these effects? It is well known that the race from which we acquired the use of tobacco was composed of hardy and active men, and even the most zealous anti-tobacco writer has been unable to show that European races have degenerated either in physical or intellectual vigor since the advent of the habit. The experiments of Dr. William A. Hammond,* upon his own person, almost forty years ago, showed that in moderate quantities to a healthy adult, tobacco produces no appreciable injurious consequences, but, on the contrary, that it seems to possess certain sustaining properties, and enables one better to withstand a deprivation of the normal food supply. Further than this, we see daily, on every hand, men

* Am. Jour. Med. Sci., 1856.

who have suffered no apparent physical deterioration after years of constant smoking or chewing. The fact, however, that these habits are in many cases productive of harm to the human system has been recognized by medical men almost from the date of their introduction. The sentiment against tobacco has been so strong as to lead to restrictive legislation in many countries, and even to-day in France, Germany, and many parts of the United States, its sale is forbidden to minors. Among the numerous diseases, disorders, and conditions for which the use of the plant has been held responsible, we may mention general debility, stunting of physical development, color-blindness, amblyopia, amaurosis, ophthalmia, indigestion, cardiac diseases, catarrh of the nasal passages, cancer of the lips and tongue, premature gray hairs, baldness, nervous irritability, blunting of the moral sense, mental aberrations, and even insanity. It is said, also, to promote sexual decline, and as early as 1622 the Sultan Monarch prohibited its sale in his dominions on account of its anaphrodisiac effects. Furthermore, the use of tobacco is said to produce a dryness of the mouth which water alone fails to quench, the partially paralyzed nerve terminals of the buccal mucous membrane and tongue requiring something more stimulating. It thus originates or increases the desire for alcoholic indulgence. "Show me a drunkard who does not use tobacco and I will show you a white blackbird," said Horace Greeley. The scope of the present paper does not comprehend a discussion of these various conditions, but simply of the influence of the tobacco habit upon the heart, with particular reference to its pathological relations. The physiological action of nicotine upon the circulatory apparatus has been studied by a number of competent observers (Brodie, Traube, Tugenbald, Rosenthal, Benham, Hare, and others), but the exact rationale of its influence is not yet fully understood. Upon the myocardium the poison appears to possess but little influence. Immediately after death from the alkaloid the heart is found pulsating, and according to the experiments of Dr. W. P. Benham the poison painted on the cut out heart of a rabbit, or injected into its cavities do not

arrest its movements, but, on the contrary, a heart which has ceased movement is stimulated to renewed action by the application of the drug. These researches of Benham confirm the somewhat older investigations of Brodie, *viz.*, that tobacco acts on the heart through its nervous system. Primarily, nicotine lessens the pulse rate, but how it does this is still unsettled. The later increase in the pulse rate appears to be due to paralysis of the peripheral inhibitory apparatus. The exact cause of the rise and fall of arterial pressure is likewise not satisfactorily accounted for. In the present state of our knowledge concerning the effects of tobacco upon the circulation, we are, therefore, forced to take refuge behind the still undetermined vaso-motor influence of the drug. Now we come to a consideration of the symptoms and signs which indicate the pathological influence of tobacco on the circulation. What is the so-called "tobacco heart"? An exact answer to this question is not to be found in medical literature, nor does the author believe it to admit of a categorical reply, unless we say it is a form of heart trouble due to the effects of tobacco. According to the author's experience there is no complex of symptoms which typify the effects of tobacco. We find in tobacco habitués all grades and conditions of nervous, painful, or oppressed cardiac action depending upon the age of the patient, the amount of tobacco consumed, the continuance of the abuse, etc. Most new cases, however, are observed among recent smokers or chewers. The subject is apt to be a youth, ranging in age from twelve to twenty years. He probably has a pale face, an anxious cast of countenance, perhaps tremulous muscles, and is apt to suffer from heartburn, acid eructations, and other symptoms of indigestion. Most patients of this class readily admit the excessive use of tobacco, and some even manifest a certain degree of pride in the confession. As above stated, the heart symptoms vary greatly. In mild cases there is simply a little occasional palpitation, a flutter, or a dart, which gives rise to but little annoyance. There are no physical signs whatever, and the diagnosis of tobacco heart is made by exclusion. In other cases the symptoms are more

pronounced and cause the patient considerable distress and uneasiness, and there may be some quickening or irregularity of the heart's action. In still other cases, and these are apt to be in older habitués, the cardiac pain amounts to an actual severe pang, requiring the patient to sit or lie down, and to abstain absolutely from all muscular effort for the time being. In a recent case of this kind occurring in the author's office, while the patient was under examination, the face became ghastly pale, a cold perspiration bedewed the surface, the hands were clasped over the heart, and the patient complained of a horrible sense of tightening and oppression in the chest. The symptoms fairly represented a well-marked case of angina pectoris. There was in this case a decided irregularity, and an occasional intermittence of the heart's contractions. These physical signs are not uncommonly found in severe cases of nicotine toxæmia. Auscultation, however, is generally entirely negative, or only confirms what we find by palpitation; cardiac murmurs, as a rule, have no place in tobacco heart, except, perhaps, as a sequence of long-continued abuse of the habit. The exact pathology of tobacco heart is unknown. It probably involves lesions of the pneumo-gastric nerve which are beyond the reach of our present methods of investigation. Osler states that in young lads excessive indulgence may lead to cardiac hypertrophy, dilatation, and even valvular lesions. Patients, probably, do not often die directly from the action of tobacco on the heart, but life is often made miserable, and the victim useless, by its effects.

The treatment of tobacco toxæmia in recent cases is very simple, a withdrawal of the cause generally resulting in a speedy disappearance of the symptoms. There should be no compromising in this matter, however; a complete and rigid abstinence should be invariably insisted upon. In more advanced or severe cases some form of internal medication must supplement the withdrawal of the habit. Any of the nervines, antispasmodics, or diffusible stimulants used in functional cardiac disorders due to other causes may be given a trial.

PREDISPOSITION TO TUBERCULAR AND ALCOHOLIC DISEASE, AND ITS REMEDY.

BY A. B. FREEMAN, M.D., JOPLIN, MO.

*Read before the Southwest Missouri Medical Society in Springfield, Mo.,
October, 1894.*

No truism ever furnished more numerous and forcible demonstrations of its truth than that "like produces like." In fact, it is one of the most rigidly enforced laws of nature, and dependent upon its fixedness is the assurance of the continuity of the species, otherwise all progeny would abound in confusion.

Huxley said: "It is the first great law of reproduction that the offspring tend to resemble its parent or parents more closely than anything else."

That "like produces like" is no truer of man in a physiological than in pathological state. If he has attained a diseased condition of his body, he may transmit it to his offspring just as he would endow it with a likeness of any bodily feature. If his body is contaminated with the tuberculous bacilli he may transmit a similar condition to his progeny.

Quoting from Ziemson: "There is, perhaps, no fact of experience which is regarded as so incontrovertible as the heredity of tuberculosis."

Ransom of London says: "Few medical men who have been long in practice will doubt the existence of family predisposition to tubercular diseases. Thus most of us have seen instances of families of which almost every member has died of the disease, and others in which members of the same family, living in different and sometimes far-distant places, have most of them ultimately succumbed to it."

Lugol states "that more than half the subjects of scrofula have consumptive parents."

The tuberculous transmit to their children constitutional conditions peculiarly adapted to attack by the bacillus. There seems to exist within them a suitable pabulum for its sustenance and reproduction. You will find this condition early in life manifesting itself through the lymphatic glandular system, and known as scrofula, or later in life, in the form of phthisis or lupus, or in the decline of life as cancer. But the tuberculous condition by no means stands alone in transmitting disease and predisposition to disease in children, and in those with whom infected subjects come in contact.

Alcoholism also plays a very important part by way of transmitting from parent to offspring not only a longing for the use of alcoholic liquors, but various neurotic conditions as well. I call to mind at this time two cases in which children, begotten while the father was in a state of intoxication, were not only idiotic, but had the same actions and ways, so far as it was possible to imitate him, as the father had when he was in a state of intoxication."

Down, in a paper on "Mental Affection of Childhood and Youth," said: "With fathers phthisical and irascible, with mothers feeble in judgment and so emotional that everything is a cause of fright, one is astonished that they should have procreated any sane children at all, and, indeed, in some cases the whole progeny of these parents is puny and feeble." He says further: "I feel quite sure that drunkenness must be placed among the factors in the production of idiocy. I have had under my observation several families in which the majority were mentally weak, and the whole more or less fatuous, whose fathers were never very drunk, yet never perfectly sober, and in these cases the chronic alcoholism had produced a condition of mental hebetude from the slow poisoning to which they were subjected."

Dr. Ruez has observed that idiocy was very common among the miners of Westphalia, who lived apart from their wives, only came home, and generally got drunk, on their holidays.

Demany assured himself that out of thirty-six epileptic

patients he had under his observation for twelve years, and whose history he was able to trace, five were conceived in drunkenness. He observed two children in the same family suffering from congenital paraplegia, whose conception also took place under alcoholic conditions in the parents.

Grenier, in his thesis of 1887, in the discussion of the progeny of alcoholisms, shows, by numerous instances, that weak-minded subjects are very much inclined to abuse strong drink, and that from being at first hereditary alcoholisms they become inebriates in process of development by the same sequence as their procreators. "We see alcoholics not only generating feeble offspring, but implanting in them also the taint of alcoholism. Hard drinkers procreate hard drinkers in a notable proportion of cases — approximately one-half."

Legrain, in his thesis of 1886, in summing up the opinions of Magnan and his school, says: "If there be any two propositions we have the right to formulate at the present day the following are the two: First, cerebral inferiority, the direct cause of excesses in strong drink, has its origin most frequently in heredity, that is, excessive drinkers are degenerates. Second, alcoholism is one of the most powerful causes of mental degeneration, that is, the sons of inebriates are degenerates. The relations between alcoholism and mental degeneracy are comprised within this terrible, vicious circle, which is irrefutably traced out and confirmed by innumerable most eminent medical observations." And further, he remarks: "There are but few cases of degenerates in the careful study of which we may not discover, somewhere, evidences of excessive addiction to strong drink. On the other hand, it is notorious that in the category of confirmed inebriates we find their progeny to include cases of idiocy, imbecility, weak-mindedness, and various neuropathics, of which the most frequent is epilepsy." We find the weight of medical authority in England, France, Germany and Belgium in favor of the theory of the transmission from parent to child of not only the alcohol habit but of many

neurotic diseases, and American authors are, if possible, more inclined to the theory than those of any other country.

Crothers, in *Medical Journal of Nervous and Mental Diseases*, says: "That there is no other disease which is more intimately connected with the prevalent physical and mental conditions of the human race." "Inebriety," he says, "is most positively transmitted from one generation to another, and this diathesis or predisposition may be observed to extend through two or three generations."

It is useless to go further quoting medical statistics and reports in proof of the heredity of disease and crime, when every medical man knows that medical literature richly abounds in reports from the very best medical authority of the world in proof of the theory; the evidence is so overwhelming that no man can doubt it.

There is no class of men in so favorable a position to understand and realize the importance of the situation as the physician. He is daily and hourly coming in contact with disease, and is of necessity led to look for its origin. He is supposed to stand between the people and disease. They look to him to care for them in their bodily afflictions, and to act as general supervisor over matters pertaining to hygiene and prevention of disease, and he has voluntarily assumed these grave responsibilities, and it is through his efforts that this much-needed reformation, touching so vitally the welfare of the nation, must be wrought.

Those most concerned, and in whom reform must be worked, if ever, know little or nothing of the matter, and have least opportunity and inclination to learn.

Our suggestions are almost wholly along the line of prophylaxis, as practiced by every intelligent physician in his daily practice, and this course would naturally necessitate the enactment of laws providing against the production of disease and crime.

Government is organized with the power of preserving the rights of its subjects, and can divest itself of the power to provide for them.

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As a people we have a right to legislate against the procreation of the diseased and vicious because it would result in the greatest amount of good to the greatest number of people. We have a right to demand of our lawmakers such enactments as will finally stamp out disease and crime.

Candidates for matrimony should be compelled to go before a competent medical board of examiners and subject themselves to a rigid examination, under oath, as to their moral and physical condition, present the written examination to the county clerk, with the stipulated fee paying for the examinations, which papers sent to a general medical examiner, who, being a State officer, should be located in the State capitol, where the report of examination should be put upon record. The general medical examiner, after a careful examination of the papers, should respond to the man wishing to be married, notifying him whether or not he was granted the right to marry, when he can then go to the county clerk's office, and not till then should he be granted a license to wed. This would require the appointment of a board in each county, and the election by the people of a general medical examiner.

Laws for the prevention of crime and vice should have the precedence over those for the punishment of the same. If it is prevented there will be no need of laws providing for its punishment.

If the hereditary effects of syphilis, tuberculosis, scrofula, cancer, alcoholism, morphiaism, absintheism, with the baneful use of other drugs, and of criminal tendencies were eliminated from our progeny, disease and crime, in a few generations, would be almost unknown. In our most sanguine imagination and speculations as to the result on our future generations, we would hardly overstep the limits of reason. There is no reason why the average time of existence should not be doubled, the physique increased in size, strength, and beauty, the intellect rendered more acute and powerful, and the soul more in accord with God. Truly, man might be restored to his creative condition, when it was said

of him that he was created a little lower than the angels. He has retrograded in body and soul, till in many instances he is little above the brute creation, though his capabilities are vast and much varied, ranging through gradations from the deepest degradation to the most superior exaltation. It may be possible for man to again attain his Adamic physical and moral condition. What man has been he may again be, as the result of proper culture, through a sufficient period of time, and it is doubly true of the people of America, whose environment is better than that of any other people on the globe ; we have every essential in the way of environment to the production of the perfect physical and moral man.

The key-note to an exalted manhood lies in the enactment and enforcement of laws governing matrimony, to which most holy and sacred ordinance there is absolutely no requirements except the price of a license. Men are allowed under existing conditions to go with a putrid and diseased body and a criminal mind before a justice of the peace, maudlin drunk, and mock this most holy ordinance, desecrate its sanctity and purity with their degradation and unholy desires, and are then sent out to bring into the world their kind, degenerates in body and criminals in mind, a generation of corruption.

There is no social or commercial position to which a man may aspire without certain qualifications except to the marital, where the only requirements are to be so many years old, and the price of a license.

Shame on a nation that will allow disease and crime to run riot, absolutely free and unbridled, with no preventive laws directed to its source !

Gentlemen, the time has come when we must resort to radical and effective means and measures of cure. We have sat still in a state of stupidity long enough concerning this matter. It is our duty to see, if possible, that the conditions are met, and if it is our duty, why do we longer wait ?

ESTABLISHED FACTS RELATING TO ALCOHOL AND OTHER ANÆSTHETICS.

By N. S. DAVIS, M.D., LL.D., CHICAGO, ILL.

1. The three well-known anæsthetics in common use—ether, chloroform, and alcohol, each and all, when received into the blood, either by inhalation, hypodermic injection, or by the stomach, first suspend the sensibility of the cerebral hemispheres (unconsciousness or anæsthesia), and next they suspend in succession or simultaneously the functions of the respiratory, vasomotor, and cardiac nerve centers or ganglia, thereby suspending life. It is hardly necessary to adduce proof of this proposition, as it is familiar to every practitioner of medicine and surgery.

2. Each of these three anæsthetics act on the nervous centers in the same direction, and consequently each intensifies the action of the others, whether given together by inhalation as in the A. C. E. mixture, or separately by different methods, provided they are present in the blood at the same time. The correctness of this proposition is demonstrated by the experiments of Dubois in 1883, and still more fully by those of H. C. Wood as detailed in his "Address on Anæsthesia" to the Tenth International Medical Congress, Berlin, 1890, and by many carefully observed clinical facts.

3. The action of these three anæsthetics—alcohol, chloroform, and ether, on the cerebral, respiratory, vasomotor, and cardiac nerve centers, is not only in the same direction, but that direction is one of *diminished sensibility* or paralyzant in direct proportion to the quantity used. This has been so perfectly demonstrated by the well-known experiments of Sidney Ringer and Sainsbury; Professors Martin and H. C. Wood; David Cernay, J. H. Kellogg, and others, particularly in regard to the action of alcohol, that it must be admitted as an established fact, or we must deny the value of all experimental therapeutics.

4. These anæsthetics not only directly diminish nerve sensibility and force, but their presence in the blood so modifies the action of the hemoglobin, corpuscular elements, and albumen, as to diminish the reception and internal distribution of oxygen and to lessen the activity of the cell nuclein and leucocytes; and consequently they lessen all metabolic and natural excretory processes. The correctness of this proposition is sustained by an amount of both experimental research and clinical observation sufficient to fill a fair-sized octavo volume. So far as relates to the action of alcohol, the reader will find these proofs alluded to more in detail in a paper prepared by me for the World's Temperance Congress in Chicago, 1893, and published in the second volume of "Temperance in all Nations," 58 Reade Street, New York, and also in an interesting volume "On the Effects of Alcohol," by Dr. J. E. Usher, London.

5. When alcohol, or either of the anæsthetics named, is retained in the blood but a few hours, as is usually the case when administered for strictly anæsthetic purposes, the effects mentioned in the four preceding propositions soon disappear. But when the dose is repeated sufficiently often to keep it pretty constantly present in the blood and tissues for weeks, or months, or even years, as when alcohol is administered liberally from the beginning to the end of many of the acute general fevers and some chronic affections, or drunk in the form of beer, wine, or distilled spirits as a beverage, the consequent impairment of nerve sensibility and force and the coincident impairment of oxidation processes necessary for healthy tissue metabolism and excretion, directly encourage fatty or atheromatous degenerations in almost every tissue in the body; and especially in the stomach, liver, lungs, heart, and kidneys, as may be seen illustrated in every case of chronic alcoholism. It is this effect of alcohol in diminishing the internal distribution of oxygen and also the activity of the nuclein and leucocytes of the blood, that makes the individual using it more liable to attacks of almost every variety of acute disease, whether

epidemic or endemic, and lessens his vital resistance when attacked. So true is this, that every modern writer of note on practical medicine tells us that even habitual *moderate* drinkers of alcoholic liquor give a much higher ratio of mortality when attacked with cholera, continued fever, pneumonia, influenza, or almost any other acute disease, than the total abstainers. Even the more intelligent part of the non-professional public have come to quite generally recognize this inherent and inevitable power of alcohol to impair man's physical power and activity, and hence they prohibit its use in all circumstances requiring the highest degree of activity and endurance, whether mental or physical. Having stated as plainly as possible the five foregoing propositions, and believing their correctness to be capable of abundant proof, I will ask a few questions of very great practical importance both to the profession and the public :

1. If alcohol when taken into the living body directly diminishes nerve sensibility, muscular force, and so alters the constituents of the blood as to retard both the internal distribution of oxygen and natural tissue metabolism in direct proportion to the quantity taken, why do we continue to speak or write concerning it, or to use it, as a *stimulant heart tonic, or restorative agent* ? Is not such a designation untrue, and directly calculated to perpetuate errors of the most destructive character, both as regards its use as a medicine and as a beverage ? Why not give it its true designation, *i. e.*, an anæsthetic and organic sedative ; and to be used only as such ?

2. If the presence of alcohol in the blood directly diminishes respiratory, vasomotor, and cardiac nerve force, and retards the reception and internal distribution of oxygen, what possible indication can there be for its use in such diseases as pneumonia, diphtheria, typhoid fever, etc., in which all the functions just named are already below the natural standard ? Would not its presence not only still further depress the respiratory and vasomotor functions, but also by retarding the internal oxidation and metabolic processes,

help to retain in the system both the specific toxic agents and the natural products of tissue changes, and thereby increase both the duration of the disease and the danger of final exhaustion?

3. Does not an accurate study of the history of therapeutics show that, the greater the amount of alcohol or other anæsthetics used in the treatment of the general acute diseases, especially those named under the preceding head, the higher has been the average ratio of mortality?

4. If alcohol and other anæsthetics actually diminish cerebral, respiratory, and vasomotor functions in proportion to the quantity used, why administer them to any patient coincidentally with strychnin, digitalis, strophanthus, conval-laria, cactus, or other direct cerebro-spinal, respiratory, and vasomotor tonics? As both direct experiment and clinical observation have proved that strychnin, digitalis, etc., most reliably antagonize the effects of alcohol and chloroform, is it not the climax of therapeutic inconsistency to give a patient a hypodermic injection of strychnin and at the same time fill his stomach or rectum with whisky or brandy?

5. How is it possible to determine the real value of the antitoxin serum in the treatment of diphtheria, if the patient is given at the same time liberal doses of a toxic bacterial product in the form of wine, whisky, or brandy? And if these latter are omitted or their quantity greatly reduced, how shall we know whether the increased ratio of recoveries is owing to the virtues of the antitoxin serum or to the omission of the toxin, alcohol? Having carefully noted the published results of the treatment of diphtheria by antitoxin serum, as given in the best medical periodicals, I find a very large proportion of the cases so imperfectly described as to render them of no value in determining practical results. In many cases, nothing is said about any coincident use of other remedies; in other cases it is simply said that stimulants and nourishment were given, but what kind or amount is not stated; in still other cases the administration of quinin, iron, etc., is mentioned in addition to stimulants and nourishment; and in one case reported in *The British*

Medical Journal, the child, 6½ years old, presenting symptoms of an average case of diphtheria without laryngeal obstruction, was treated with antitoxin and was represented as progressing very favorably until the fifth or sixth day, when a moderate antitoxin injection was given and six ounces of brandy ordered to be given the succeeding twenty-four hours. The next day the child was cyanosed and soon died. Can any one be quite certain whether this last case died from the toxin of diphtheria, the antitoxin, or the torula cervicæ toxin in the six ounces of brandy?

Is it not practicable to have three or four hospitals admitting diphtheria patients supplied with a sufficient quantity of some one of the reliable antitoxin preparations and then make a fair test of its efficacy by treating in parallel beds with good air, rigid cleanliness, and good milk for nourishment, but no alcoholic stimulants, two series of cases as nearly alike in severity as possible. To one series of cases, let the antitoxin or antitoxin serum be given in strict accordance with the most approved rules, and no other internal remedies. To the other series, let just enough calomel be given during the first or second day of the attack to procure one or two intestinal evacuations, and let this be followed by small but frequently repeated doses of a solution of bichlorid of mercury and belladonna until the diphtheritic membrane begins to break up, which is generally between the fourth and sixth days, then substitute suitable doses of tincture of chlorid of iron and quinin until the case is terminated. Let the most complete record possible be made in both series of cases, and then we shall have data that are parallel or comparable, and from which the most reliable practical conclusions can be deduced. If, in cases in either series, the disease invades the larynx sufficiently to demand it, intubation or tracheotomy should be performed as in other cases. The results of the two series of parallel cases thus managed would not only be comparable with each other, but both would be comparable with the results of the liberal alcoholic and all other methods of treatment in vogue.

THE LATE DR. THEODORE L. MASON.

BY T. D. CROTHERS, M.D.

Dr. T. L. Mason was one of the active founders of our association organized in 1870, and in 1876 he was made president, and continued in this office until his death, February 12, 1882. At the next annual meeting of the association, in May of the same year, Dr. Day, the vice-president, paid an eloquent tribute to Dr. Mason and his memory, which he promised to write out for the JOURNAL, but never did, owing to absence of data and a wish of Dr. Parrish to write a sketch. For various reasons, including invalidism, Dr. Parrish failed, and we take pleasure in presenting the first extended sketch which has appeared in the JOURNAL, of one of the most prominent, earnest pioneer workers who has been associated with this great movement. Dr. Mason was born in Cooperstown, N. Y., in 1803, and graduated at the College of Physicians and Surgeons in New York city in 1825, and after a few years of practice in Wilton, Conn., moved to Brooklyn, N. Y., where he spent the rest of his life. He descended from a military and legal family dating back to early colonial times, and inherited a particular mental and moral robustness of character, which gave him prominence all his life. In 1858 he became president of the first college hospital, called the Long Island Hospital, where medical instruction was given in the hospital exclusively. In 1865 he organized and was president until his death, of the King's County Inebriate Home, at Fort Hamilton. From this time he became actively identified as a writer and pioneer worker of the inebriate asylum movement, and the scientific study of inebriates. He was for many years vice-president of the American Colonization Society, and active member and officer of numerous societies, both medical, historical, and theological, in all of which his wise counsel and clear conceptions

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were highly prized. In 1870 he assisted in the organization of the Association for the Study and Cure of Inebriates, and, in some remarks made at that time, predicted that this association would mark the beginning of a great revolution in public sentiment concerning the inebriate, which would be felt all over the civilized world. Twenty-four years has passed since that event, when fourteen earnest men met in the parlors of the Young Men's Association in New York city, in November, 1870, and organized this association to centralize and proclaim the great oncoming truths of inebriety. To-day eleven of the great nations of the world have similar societies, and Dr. Mason's prediction proved to be a veritable prophecy. He saw clearly that the questions of alcohol and inebriety were vital topics that civilization would recognize and study not far in the future. Among the many prominent papers which he wrote on this subject was an address in 1876, "On the Disease of Inebriety." This was very widely read, and was a calm, dispassionate study, very clear and convincing in its statements, and had a wide influence, that is noted even to-day. Other papers and addresses on this topic were very influential in their clear earnest tone, and strong legal method of presentation. Dr. Mason was always intensely practical, and the present theory or conclusion that could not be used at once and harnessed into the world's working forces did not attract him. As president of our association he urged a steady, persistent adherence to the facts, no matter what the conclusions might be. In the bitter attacks which were made on this journal in its early days, he gave the same advice and counsel, never to stop to fight theories, or notice wild dogmatists; also if this association and its journal were founded on truths, persecution and opposition would only give it more permanent growth. Dr. Mason was cautious and conservative in forming new views, and reaching conclusions on new topics. When he was fully convinced of the correctness of the facts or methods, he never hesitated or wavered. No opposition or difficulties deterred him. He took up the work of in-

briety, helped to found an asylum and association, because they were practical facts that would help on the solution of a problem of the greatest importance. He studied and worked for this subject in the same lofty spirit and high moral purpose that helped found a college, a historical society, or the colonization of poor colored men in far distant lands. His mental vision was higher, and his spirit of philanthropy to raise his fellow man, and do something to help on the race, was broader and wider than his cotemporaries. As a pioneer student and practical worker in the field of inebriety, Dr. Mason will be long remembered. As the organizer and first president of the Kings County Inebriates' Home, he gave a permanent impress and direction to its work, that will be seen and felt for long years to come.

As an active founder and officer of our association, his counsel and labors constituted a very large part of the influence and success of the movement. Dr. Mason was thoroughly a man of faith as well as courage. He knew when others doubted, his energies increased when others faltered, and he saw the movement of events higher up and farther down into the future. We can notice only a small part of Dr. Mason's life work, and that along the line of the inebriate asylum movement. Beyond this a wide circle of friends and a devoted family both saw and felt the genial influence of his life, scattering the clouds and gloom and insensibly lifting and raising all who came in contact with him. It is a source of great pleasure to say that the mantle of his genius has fallen on his son, the well-known Dr. L. D. Mason. Taking up his father's work he has gone on along the same practical lines of study, as the many excellent contributions in this JOURNAL will attest.

He is now the only surviving member of the fourteen who formed the Association for the Study and Cure of Inebriety in 1870. This late tribute to the memory of Dr. Mason has a greater significance to-day than ever. Each year brings new interest to the life and work of one who is already known to all students of inebriety, and especially to members of our

association. Such men have impressed themselves by their work on their day and generation to a far greater extent than any present study can determine. They live on in a constantly widening circle. The truths which they have taught go on as a permanent addition to the development and progress of the world.

STIMULATION.

Dr. McDowell of Dublin in a recent lecture remarked on stimulation as follows: "The second point I would allude to is the fallacy in the application of the word 'stimulant' to alcohol. If alcohol was a stimulant its consumption ought to tend to more and more work being done, and the danger would be from the strain of overwork; but action is different. We get a chain of events made up of three links: Action, increased action, paralysis. The increased action is really a connecting link between ordinary action and paralysis. This is because a great many functions of the body are arranged so that when increased action is required more power need not be directly put forth: there is always more than enough power, and a check, or inhibiting action, keeps it to the required amount. If the check is lessened the action becomes more rapid, but this is from narcotising the controlling agent, not from stimulating the action. The common illustration is that if you take the pendulum off a clock, the weights (which are the existing force) are not increased, but yet the action is hurried, because the control is weakened. If a person gets a sudden start, the heart beats much quicker; the start is not a stimulant, it really paralyzes the controlling nerves, whose action is for the time relaxed. So the cause of the heart's quicker action is not stimulation but relaxation. In illness no one would try to stimulate the heart by repeated frights—it would beat quicker but fail faster. The action of alcohol is similar, it does not stimulate but reduces control, and experiments have shown that each special sense is blunted even by small doses. As a matter of fact, those who have most studied its action least use it as a medicine."

INEBRIETY AND IMBECILITY—A MEDICO-LEGAL STUDY.

BY T. D. CROTHERS, M.D., HARTFORD, CONN.

The following records of two cases brings into prominence again the old conception of inebriety, and the recent modern view accepted by the more intelligent courts and jurors.

In March, 1894, John Cronin was tried and convicted for the murder of Albert Skinner. The facts relating to his crime are these: He was a farm laborer, thirty-seven years old, living about Hartford. He has been a periodic drinker since early life, and when sober is a quiet, peaceable man; when drinking is excitable, irritable, abusive, and often quarrelsome. He has been arrested and confined in jail twice for intoxication. His drink periods have been growing longer, and the sober intervals shorter for the past few years. He has been growing more irritable and stupid when drunk lately.

For at least two weeks before the crime was committed he was idle and drank continuously. He was intoxicated on the night before the murder. A few weeks before this time he had a drunken altercation with the man he shot, and at that time made a threat to shoot him. Amicable relations were re-established, and he seemed to be on good terms again with this man with whom he had formerly boarded and been very intimate.

On the morning of Oct. 6, 1893, he went to the house of this man, Albert Skinner, and without a word of provocation shot him at the breakfast table. He was pushed and thrown out of the house twice in a few minutes, and stood round on the street near the house with a revolver in his pocket making no attempt to shoot again, and coolly boasting of what he had done; submitting to restraint and expressing a wish to

shoot others also, justifying himself and affirming that he was ready to accept the consequences and be hung, and if he was permitted would kill others. These expressions of regret that he had not shot more persons were repeated several times.

He was recognized as having been drinking by his breath and strange actions, but several witnesses thought he was fully conscious of his acts and their consequences.

For the next two days all the witnesses seem to agree that he was in a semi-dazed condition of mind, indifferent to all surroundings and would not talk. After this his manner changed, and he responded to inquiries and conversed, claiming not to recollect any of the past occurrences and the crime. He said that Skinner, the murdered man, was the best friend he ever had.

This crime was characterized by two very unusual lines of conduct.

1. Shooting the man in open day in his own home, without a word of provocation, boldly and under the possible observation of many persons ; firing only one shot and standing round to see the result, being pushed out of the door by the wife of the murdered man, and going back into the house again, was thrown out by the son ; also making no attempt to shoot other persons or run away.

2. Offering no resistance when the pistol was taken from him, submitting to arrest, acknowledging the crime, and in violent language expressing a desire to repeat the act on the murdered man and others, and take the consequences. His cool indifference and violent expressions unaccompanied by acts or delirious excitement, seemed to those about him not to indicate drunkenness, although his breath was strong with the odor of spirits and his manner was strange and unusual.

Thirteen months after the commission of the crime I examined him in the State prison. During all these months he has been free from spirits, and it would be natural to expect that his condition of body and mind would be very near normal.

His appearance was that of a stout, short-built man, with

a small, irregular-shaped head, retreating forehead, sunken, tremulous eyes, large stigmatic ears, and high palate arch. He walks with a shuffling, unsteady gait, and when seated supports his head on his hands, and seldom looks up. He answers questions slowly and with hesitation, and seems in doubt unless the questions are direct and repeated. The answers begin in a natural tone of voice and drop down to a whisper at the close of the sentence. This hesitation and doubt differ widely from the cunning reserve of one who would conceal his mental operations in the apparent feebleness and effort to give some answer and overcome an evasion and incapacity for sustained reason or explanation of any event. The impression he gives is that of a naturally defective brain, already approaching and evidently in the penumbra region of imbecility.

He appears in fair health, and without delusions, and profoundly indifferent to any past, present, or future conditions. As a result of persistent questioning the following facts were brought out, most of which have been confirmed from other sources, hence they are generally correct. He was intoxicated at about fifteen years of age, and has used spirits continuously, and at times to great excess up to the present. He both drinks alone and in company, and when intoxicated has little or no recollection of what he does or says. His memory has never been good. At times he can recall events when drinking, at others they are a blank. Concerning the homicide he has no recollection of it; the blank of memory extends from the night before the crime to some time after being placed in jail.

He cannot understand why he should have shot Skinner, as he was his best friend. He gave the history of a fall on his head with a period of unconsciousness, and a scar showing a scalp wound was exhibited as evidence of it.

Three years ago he was made unconscious by a fall from a train and laid up with injuries of the back and knee for two months. He has been struck on the head several times when drinking and made unconscious. For the past few

years when drinking he has been more irritable and quarrelsome, and been told that he was crazy at those times. He makes no complaint against any one, and expresses no sorrow or indignation at anything concerning the crime or trial. He is strangely indifferent concerning his life, and would not escape if he could, but is ready to die at any time. It makes no difference to him what the result may be.

Concerning the future he has been told that by repentance one can go to heaven; if this is a mistake he will accept the situation. His wishes are of no account, "as the Lord and the law will have their own way." No questions of his moral responsibility and guilt in this crime excite any emotion or nervousness or apparent realization of his condition. He expresses himself coolly and with utter unconcern. At times a half imbecile smile would appear when he could not answer the question, and did not know what to say. There was no irritation or excitement or depression or annoyance from questions which were pressed, and if different answers were suggested he would select the briefest one.

When the same question was put in a different form, he seemed not to realize it but answered in monosyllables, irrespective of any previous answer. In all this there was no criminal cunning or attempt to conceal or to appear crazy, but clearly the natural working of a feeble and imbecile mind. He seemed to have a remarkably abnormal brain, in which all the higher functions were paralyzed, and the normal consciousness of duty and responsibility were absent.

A study of the heredity of this case was startling. His near relatives on both his father's and mother's side were hard drinkers, and on his mother's side insanity and epilepsy appear frequently. None of his relatives exhibited anything more than a very low order of intelligence.

His maternal grandparents were William and Mary Callahan of County Antrim, Ireland. William died in middle life, and Mary lived to be sixty years old, and was insane for some years before her death. Catherine, the oldest daughter, and aunt of John Cronin, became insane from the death of

her child and the desertion of her husband, recovering in part and coming to this country, where she died in middle life. Michael, the second child, was early addicted to drinking intoxicants, and his mother tried to kill the appetite by mixing snuff with his drinks. He enlisted in the English army, was discharged insane, and wandered about in the woods and finally died of exposure. Thomas Callahan, the second son, lives in Hartford, and is a respectable man. He drank until he was fifty years of age; since which time he abandoned the habit. He testified as to the facts of his nephew's ancestry before the board of pardons, and appeared to be a quiet man, "thick" in his memory, and in the appreciation of what the counsel was trying to bring out.

Margaret Callahan, the youngest child of William and Mary, and the mother of John Cronin, was a nervous, excitable girl, who went to Wales with her older sister, Catharine. There she married Peter Cronin, a Welsh miner, of a boisterous nature and a man who drank to excess. His wife drank with him daily, and they lived in a state of perpetual trouble. At last Peter was murdered in a drunken row, and Margaret became insane for a time. Her sister Catherine took her home and adopted John Cronin, who was one year old at the time. He lived with his aunt until he was eight years old, when he was put out to work.

His mother, Margaret, came to this country and married a man named Moran, who is now dead. There were three children by this marriage, one dying in early life, and two daughters surviving. One of these, Mrs. George Somers, is subject to epileptic fits, is a hard drinker, and has attempted suicide. She has been in the county jail in this city for drunkenness.

Margaret Moran, the mother of John Cronin, is well known to the authorities of Hartford. She has been a drinking, troublesome woman during her long residence in and about Hartford, and was surrendered to the authorities by her brother, Thomas Callahan, after he had endured her boisterous and wild ways, while under the influence of drink, as long

as he could. She is now an inmate of the almshouse in this town, where she has been for nearly five years.

This brief sketch of Cronin's ancestry shows that his father and mother were both inebriates, an uncle and aunt were insane, and a half sister is a drinking, epileptic degenerate. Of the direct stock of his father, John Cronin was the last, and of his mother the worst.

In these facts a very clear history can be traced of what is well known as alcoholic insanity of the imbecile and epileptic class, the prominent symptoms of which are a marked degenerating heredity, usually from an alcoholic insane or idiotic ancestry: or practically from a dying family, where the race stock is exhausted, enfeebled, and approaching extinction. Alcoholism in such a family is a symptom of progressive degeneration. The drinking is always followed by insane, epileptic, and impulsive conduct. When not drinking apparent sanity and normal conduct may be the rule, but the strain of alcohol on a defective brain will bring on homicide, suicide, or epileptic explosions. The use of alcohol is always followed by delirious conditions, delusions, and strange, unusual acts.

Failures of memory are common symptoms, and may be total or partial. After a time a progressive palsy of the higher brain functions appears. In most of these hereditary defects this moral palsy and loss of consciousness of right and wrong, of duty and obligation, is an inheritance which the use of alcohol develops. All such cases show this strange indifference and unconsciousness of their acts and the consequences. The man's talk and conduct in a criminal act is only a link in the chain; by itself it may display a cunning, deliberation, mature judgment, and recognition of all the consequences, and yet when the other links in the history are known, it will be found to be the act of a clearly insane man.

The act of shooting Skinner with foolish boasts and general conduct, noted by great coolness and indifference, is a good illustration. What he did and said at this time and the impression he created on the minds of persons about him, is

a small part of his history, and when judged alone may be very misleading, but taken in connection with all the facts of his life, points out the real condition of health or disease. It is evident that Cronin's mental condition at the time of this homicide must be judged from the facts of his inheritance, from the facts of his surroundings and manner of life, also from his conduct and acts when sober and drinking, and from all the circumstances and conditions which have been influential in his history.

The State assumed that Cronin had a low criminal brain, capable of deliberation and premeditation, and with power of control. That he could reason clearly concerning his acts and their consequences. That in the crime he displayed malice and revenge and full consciousness of the nature of this act, and the legal penalties.

That he was not only conscious of his conduct, but had the power of control and concealment, to take advantage of favoring conditions. That he has been and is of sufficient mental capacity to distinguish between right and wrong in the abstract, and at the time of the crime was of sound mind. That his claim of no memory of the act and cool indifference are mere subterfuges for concealment.

The fact of his periodical intoxication and drinking the day before the crime were assumed to be aggravations and additional evidence of his responsibility.

I urged that Cronin could not have a sound brain ; that his twenty years of drinking had so fixed and intensified the inherited defects that he could not reason or discriminate soundly ; that in some respects his conduct would be automatic, where the motives and conditions of living were the same, but change these and his disease would be seen. Also, he had a defective brain, showing great disturbance from the use of alcohol, would always be swayed by morbid impulses of any form, and crime, suicide, and other abnormal acts would be the rule and not the exception.

Many authorities have pointed out the evident unsoundness of degenerative neurotics, who were alcoholics of long standing. The acts of such persons are always open to sus-

picion, and where crime is committed there is always a doubt. Unusual strange conduct can only be explained on the theory of brain degeneration and disease. While it may lack many of the symptoms of so-called insanity, it will nevertheless show degrees of palsy and brain disorder that cannot be mistaken.

This case was finally decided by the Board of Pardons, and Cronin was hung Dec. 19, 1894. He maintained the same stolid indifference to the last, sleeping soundly up to a short time before the execution.

The second case was tried at Norwich, Conn., in May, 1894, and was that of Michael Donovan, who shot and killed John Bell, some months before. Donovan was a laborer, in charge of a stationary engine, forty-five years of age, and a man of quiet, peaceable character. He was married and had a grown-up family, and was a retiring, hard-working man. For five years he had used spirits to excess at irregular times and intervals, and was always silent and stupid when drinking, never quarrelsome or violent. During the year 1893 Donovan had drank more than usual, and been stupid nearly every night. In December of that year Bell, a colored man, called him insulting names and was very abusive for some supposed slight. At this time Donovan paid no attention to this, saying he was not worth noticing, and appeared to be in no way disturbed by Bell's insults. Two days after he took an old revolver to a shop to be repaired and loaded, and told several persons he was going to shoot Bell. He drank several times and showed the revolver, and affirmed that he was going to find Bell and kill him. This he did in a short time, and without any words or apparent excitement, he shot at Bell, and finding that he staggered and fell, fired his pistol in the water and replaced it in his pocket. Quietly walking back he stopped to drink at two saloons, telling the bar-keepers that he had shot Bell, then went home, changed his clothes, and walked over to the station-house, giving himself up

That night and next day he suffered from delirium and delusions, and was treated as suffering from a mild attack of

delirium tremens. He soon after recovered and denied all recollection of the circumstances of the crime. From this time on to the time of trial he was quiet, indifferent, and seemed not to be interested in any thing, and only manifested emotion when visited by his family. When examined in jail he seemed to be dull, and, although in fair physical health, was strangely indifferent to the results of the trial; expressed sorrow for having killed Bell, and did not remember the facts of the crime, and seemed to be unconcerned. He could not give a connected account of the difficulties which led up to the crime, and the suspected motive for shooting Bell, who had threatened to have him turned away. His mind seemed confused as to events and his own conduct for some time past. In the history of his family an uncle, on his mother's side, became insane in middle life, and was confined in an asylum until death. Donovan had been a moderate drinker up to about forty years of age, when he began to have distinct drink paroxysms. These increased in frequency and duration, until finally he drank steadily every day. The past six months he drank almost every hour, and was many times unfit for work. He complained of his head feeling bad, and said he was "not right" from the time of an injury from a fall from a wagon. In a conversation with the medical expert for the State two days later, he described the act of killing, denying that he had said he was going to kill Bell, and in a disjointed way, explaining why he had shot Bell. His statements were opposed to the testimony of other witnesses, and seemed to be based on the history of the crime repeated by others.

Two experts swore that he was sane at the time of the crime, and was conscious of his acts and their consequences. Two experts for the defense affirmed that it was a clear case of alcoholic imbecility and unconsciousness of the crime, and at present he was of a low order of intelligence, with unsound, degenerative brain. They further urged, that the cool preparation for the crime, and telling others what he was going to do, and the act in broad daylight, where he was seen by others, was clearly insane. Such

conduct, following excesses in the use of drink, could not come from a mind sane and conscious of the acts committed.

The counsel for the defense, Messrs. Hull of New London and Thayer of Norwich, urged that there was more than reasonable doubt of the soundness of the prisoner's mind at the time of the commission of the crime. Also, that his excessive drinking before the crime would of necessity so far impair his reason and judgment that any unusual acts would be more or less insane, and be committed without conscious reason. They urged that this crime in its boldness and strange premeditation and execution, and his delirious condition after, was strong proof of insanity. The experts for the defense argued that the man at the time the crime was committed, was suffering from alcoholic dementia, and when confined had an attack of delirium tremens, from which he recovered with an enfeebled demented brain, and at present is in a low parietic condition. The verdict was manslaughter and imprisonment for life. This was a rational, modern disposition of the case. In New York State such a case would be sent to the asylum for insane convicts. In Connecticut he would be under observation at the State prison, and when pronounced symptoms of insanity appeared, would be sent to the insane asylum. Both of these cases were alike in the well-marked evidence of imbecility, due directly to alcohol. In the Cronin case, the heredity intensified and made the degree of degeneration very clear, and placed the assumption of insanity and unconsciousness without power of control beyond all possible doubt. In the later case, Donovan's conduct before and during the commission of the crime, and after, clearly indicated the impossibility of mental soundness. Neither of these cases were able to reason rationally, or to form motives, and to act upon them with consciousness of their import and consequences. The hanging of Cronin ignored all modern facts concerning the brain and its disorders, and was a reversion to the theories that prevailed two centuries ago. Donovan's sentence recognized the dawn of a new era in jurisprudence and progress along the lines of development, with clearer conceptions of the relations and limits of responsibility.

Abstracts and Reviews.

REPORT OF COMMITTEE ON ALCOHOLISM IN THE STREET.

To the Medical Society of the County of Kings :

GENTLEMEN,— In making its final report, your committee would emphasize all that it presented in its preliminary report, and more especially that—

1. All persons found upon the street or elsewhere by the police or others, and being in a comatose or semi-comatose condition should be at once removed to the nearest hospital.

2. No hospital should refuse admittance to such cases on the ground that alcoholic cases, or cases in which alcoholism is a prominent feature, are not proper subjects for treatment in such hospitals. This plea should not hold in hospitals that receive aid from the city. If they are not prepared to receive such cases, they should at once make such provision as is necessary. In the opinion of your committee it is as much the duty of hospitals receiving city aid to render medical assistance in such cases as it would be if the patients were the subjects of an accident. Indeed, many of the so-called accident cases are the result of alcoholism, and it would be just as logical to exclude such cases from hospitals as to exclude those who are unconscious from the same cause. Whatever differences of opinion may exist as to the duty of taking care of alcoholic cases, your committee believes that inasmuch as a diagnosis cannot be always made at once, every unconscious person should have the benefit of the doubt, and receive prompt medical attention.

3. Your committee believes that ambulance-surgeons should qualify themselves so as to be able to differentiate alcoholic coma from other forms of coma so far as that is

possible, and that the examination of these surgeons should include questions bearing directly on this subject.

4. In the preliminary report your committee referred to a special hospital for the treatment of alcoholism. To such an institution, centrally located, all cases of delirium tremens which are now treated at the general hospitals at considerable expense and inconvenience to the hospital authorities, could in the special hospital receive skilled treatment by specially trained physicians. Your committee hopes that in the near future the city will see the wisdom and humanity of establishing such a hospital; in the meantime such facilities as exist must be relied upon. Finally, your committee notices already a moral effect which the discussion of this subject by the society has produced. It has attracted attention, not only in this country but also in Europe, and copious extracts have been made by foreign journals from a paper published by the secretary of the committee, in which the work of the committee is alluded to. The medical society of the County of Kings is the first organized body of medical men to move in this matter, and it is not too much to prophesy that the effect of this agitation of a most important subject will spread from Brooklyn to every other civilized center.

The county society is not such a body as that it can enact laws and compel their enforcement, but it can by moral suasion influence police and hospital authorities, and do much to bring about an improvement in the matter under discussion. Your committee would therefore suggest that a circular be prepared, calling attention to the subject, and that a sufficient number of copies be made to be sent to the managers of the various hospitals, to the medical journals, and to such other organizations as is thought wise.

Respectfully submitted,

J. H. RAYMOND,
L. D. MASON,
JOHN C. SHAW.

GENERAL CONSIDERATIONS ON ALCOHOLIC
CIRRHOISIS OF THE LIVER.

Hanot, who has contributed much to the elucidation of hypertrophic cirrhosis of the liver, has recently written a monograph on atropic cirrhosis; and as the result of an exhaustive study based on very many clinical observations, he regards "arthritis" as a necessary predisposing factor in this disease. By arthritis he understands "a constitutional state, characterized by a vitiation, ordinarily congenital and hereditary, of the nutrition of the connective tissues and of their derivatives, which become tissues of less resistance." He refers in illustration to the congenital debility of the cardio-vascular system in chlorotic girls, of the nervous system in the hysterical and degenerate, of the lungs in persons predisposed to tuberculosis. "From a functional and anatomic-pathological point of view," he says, "arthritis is characterized by the exaggerated vulnerability of the connective tissue with tendency to hyperplasia, to fibrous transformation and retraction."

Hanot insists that clinical cases without number confirm his view, the "stigmata" of arthritis being everywhere apparent in the cirrhotic. We will enumerate the principal "stigmata," remarking that the French make quite as much of that monster *arthritis* as we Americans do of its congener, neurasthenia: "pseudo-lipomata, acne, obesity, varicose veins, hemorrhoids, enlargements of the second phalanges, early baldness, dry cracklings in the joints, rheumatic pains in loins and limbs, asthma and atheroma."

Among the signs of cirrhosis in process of evolution, Hanot enumerates dyspeptic troubles, meteorism, constipation, urobilinuria, urobilinic tint of the integument, sometimes a bronze tint from pigmentary deposit, glycosuria after ingestion of carbohydrates, pruritus, epistaxis, gingival hemorrhages, hemorrhoids, localized edemas, attacks of diarrhea.

"As for the dyspeptic troubles, it is," says Hanot, "difficult to define the part which the hepatic disease has in their

production: the stomach is likely to be modified directly by the alcoholism, or by the arthritism. Hepatic patients have a strong dislike for fats and for meat. Hyperchlorhydria is a frequent condition of the stomach in the dyspepsia of hypertrophic cirrhosis, and hypopepsia or apepsia with lactic reaction in atrophic cirrhosis."

The constipation is generally ascribed to absence of bile in the intestines, and the meteorism indicates the same lack, the bile being antagonistic to putrescence. Meteorism is an early symptom, coming before the ascites, in accordance with Portal's *jeu d'esprit*, "Les vents précèdent la pluide."

Hanot has described, under the name of "pigmentary acholia," an alteration of the bile which is secreted without the ordinary coloring pigments. This gives rise to the decoloration of the feces, and is observed in almost all the diseases of the liver. In most cases of cirrhosis, the spectroscop shows the presence of urobiline in the urine, and thereby indicates in a general way the suffering of the hepatic organ and the disorder of the biliary secretion. The bronze tint of the skin is also due to a trouble in the formation of the biliary pigments, and is seen at its maximum in "bronzed diabetes" associated with hypertrophic cirrhosis. The alimentary glycosuria is an early and persistent symptom. The pruritus is a troublesome affection, may exist apart from any eruption, and is not peculiar to cirrhosis, being observed in other hepatic affections with or without jaundice. It is one of the earliest symptoms. Hanot does not believe that impregnation of the skin by the coloring matter of the bile is the cause; this is not well understood. In a certain number of cases there will be frequent attacks of diarrhea alternating with constipation, which are explained by the hyper-tension in the portal system, as the hemorrhages and localized edema attest the profound disturbances in the circulatory system elsewhere. Hanot thinks that the epistaxes, the gingival hemorrhages, the purpura "testify to the cell alteration, and the perversion of its hematopoiëtic rôle."

In the pre-cirrhotic period and at an early stage of the

stationary period, the liver is enlarged, "owing to congestive processes which usher in the sclerosis and the final atrophy of the organ." Many cases of cirrhosis, however, according to Hanot, are atrophic from the onset. He believes also that there is a rare form (which he was the first to describe) which is alcoholic and hypertrophic throughout its entire course. Among the later symptoms are the ascites with increased development of the abdominal veins, a dry pleurisy at the base of the right lung, anorexia, a brick-red tint of the skin, emaciation and cachexia.

The complications belong to the group of infectious diseases. The liver in its state of physiological integrity is an "advance-guard of protection against infection;" when smitten in its vitality and its function, it leaves the way open to infections. Among these, grave icterus is "the last act in the period of infection and atrophic degeneration."

Among the inter-current infections which frequently carry off the patient, are erysipelas, pneumonia or broncho-pneumonia, infectious endocarditis, suppurative peritonitis, suppurative cholecystitis, abscess of the liver, acute infectious nephritis, and phlebitis. The patient sometimes dies of a "veritable cholera"—abundant watery diarrhea, algidity, coma. Hanot refers these choleric attacks to an infection due to the colon bacillus. Cirrhosis sometimes prepares the way for tuberculosis, the latter grafting itself on the cirrhosis.

When the patient escapes or resists any of these inter-current affections, he is very likely to die of grave icterus, which is in fact the natural and final term of the disease. These grave kinds of jaundice are classified according to the microbe that causes them; the symptomatology is somewhat different according as the icterus is the product of this or that microbe. There are grave icteri with hyperpyrexia; there are others with hypothermia. The infection in icterus with sub-normal temperature is believed to be the coli-communis; at least, this is in accordance with some very exact observations.

The liver is the great arrester and destroyer of poisons—microbic and others—according to the modern physiological school. Therefore, when its functions are invaded the organism easily falls a prey to septic agents; and hence, in Hanot's estimation, the grand therapeutic indication becomes plain, to diminish the causes of infection by intestinal antiseptics, and thus to oppose by this indirect way the progress of the disease. Here he is in accord with Bouchard and his school, who teach that more good is accomplished in this disease by intestinal antiseptics judiciously administered than by any other means.

As an effort to throw new light upon hepatic cirrhosis through that popular and universal illuminator, bacteriology, this attempt of our French *confrère* is worthy of attention. The part played by his "arthritis," and the inevitable "stigmata" by which its presence may invariably be recognized, is rather vague and misty theorizing to the Anglo-Saxon mind. Observation continues to convince, however, that excessive alcohol injures the hepatic cells; that the less resistant the organism the earlier the effect: that when the normal hepatic secretions are interfered with, intestinal digestion is deranged, and the general system falls a prey to poisons which are otherwise unformed or excluded.—*Boston Med. and Surgical Journal.*

POISONING BY ONE OUNCE OF CHLORAL HYDRATE: RECOVERY.

Dr. R. J. Colenso described this case. The patient, a lady, aged 34, deliberately took, on December 12, 1893, 1 ounce of chloral hydrate in solution at 8 A.M. At 4 P.M. she was discovered in her bed unconscious. No ordinary rousing measures were of any avail. Medical aid was not procured till 5.30 P.M. The patient was found to be comatose with abolition of all reflexes. The breathing was shallow and stertorous, pupils both small and very sluggish, pulse 130, small and rather firm; temperature 100.5°. The nature of

the poison taken was not discovered for about three hours subsequently. Atropine was given hypodermically, and the stomach washed out with much difficulty; the washings revealed nothing as to the poison taken. Strychnine with ether was next injected under the skin; the pulse began to fail and the coma increased. Nitrite of amyl by inhalation had some good effect on the pulse; deglutition was very imperfect. Sir Dyce Duckworth saw the case at 10 P.M., and at this time a lady friend disclosed the fact that she had on the previous day bought two ounces of chloral for the patient to send to a friend in India. This could nowhere be found. Enemata of strong coffee were now given, and sinapisms applied to the thighs and legs. The patient was vigorously rubbed and slapped with towels. At midnight the temperature reached 103° , the pulse continued to flag, and the outlook became very bad. Enemata of coffee, milk, Valentin's beef essence, and brandy, were continued, but not till 12.30 A.M. on December 13th were any signs of animation manifested. Twitchings of the face and movements of the limbs were then observed. Groaning and restlessness began about 2 A.M., and the hypodermic use of strychnine was stopped. The patient cried out to be left alone and allowed to sleep, but friction and rousing measures were continued until 3 A.M. Short intermissions were allowed, and sleep for ten minutes at a time, and then the patient was taken from bed and made to walk about. The urine was drawn off by catheter early in the evening, and was of dark color. From 8 A.M. on December 13th the patient slept thirteen hours and a half in the twenty-four. Recovery ensued, and the patient left the room on January 7, 1894. Muscular tone was much impaired for some time subsequently, as was the digestion. Periods of excitement, alternating with great depression, ensued for six weeks subsequently. The patient was a very powerful woman of large build and of good condition. Nineteenths of a grain of strychnine was employed. The amount of chloral was accurately determined afterwards, the bottle being found, and a full confession of her conduct was made

by the patient. An ounce of chloral hydrate dissolved in two fluid ounces of water was the exact dose.

The President has seen a similar case. Artificial respiration was employed, the stomach pump used, and enemata of hot coffee given. Eventually the patient, a woman, made a good recovery. She had probably taken 320 grains of chloral hydrate, and the stomach pump had been used within an hour of its being taken.—*British Medical Journal.*

THE ETIOLOGY OF OSSEOUS DEFORMITIES OF THE HEAD, FACE, JAWS, AND TEETH. BY E. S. TALBOT, M.D., D.D.S., Professor of Dental Surgery in Women's Medical College and Rush Medical College, etc. Third Edition. Chicago, Ill.: W. S. Keener Company. 1894.

The author has grouped in this work of five hundred pages a most exhaustive study of degenerations of the head and face. His facts are drawn from a wide range of reading and clinical study, fully illustrated by cuts, tables, and charts. To the general reader the chapters on Changes of Climate, Intermixture of Races, Hereditary Influences, Development, Neurosis, Crime, Prostitution, Sexual Degeneracy, Moral Insanity, Pauperism and Inebriety, Intellectual Degeneracy, Neurotics, Genius, Idiocy, Nutritive Degenerations, Maternal Impressions, City and Country Life, etc., etc., are full of the most startling facts. These topics in themselves comprise some of the most important themes of modern civilization, and give the work a value to all scholars and students that is not easily measurable. The other chapters on Neuroses of Development of the Bones of the Face and Head, also the Irregularities of the Teeth and Jaws, enter exhaustively into a field of study not treated in the usual text-books of medicine. We give the following extracts from the last chapter on the conclusions, which give a good idea of the value of the work :

“The various influences which have been brought to

bear upon the present races of the earth, resulting in neurosis of degeneracy, noted in excessive or arrested development of the osseous system, has been discussed in this work. A neurotic brain may be transmitted, which presides over the development of the osseous system; and this will cause an arrested or excessive development of the osseous system. Persons of this character have a tendency to seek each other's company. As a result they marry, and the children may possess genius and egoism, or they may become idiotic, deaf, dumb, or blind; or in middle or later life become insane, criminal, or inebriates. Such marriages always result in defective osseous growths with mental instability, and these stigmata are handed down for a number of generations. These deformities of the head and jaws often extend to other bones, and the resulting unbalanced bony framework is an unstable blood supply and defective nerve function. Consequently all forms of abnormalities appear, and refer back to physical changes and degenerations. This refers back to the question why criminals, inebriates, and other defectives should possess so uniformly stigmata of degeneration."

The great teaching of this work is the necessity of a more thorough study of these defects, both as acquired and inherited, and a full recognition of the tendencies which are present in the constitution. From these facts certain hygienic lines of acts and living are necessary to prolong life and prevent an early failure and death.

This work should be read by all students of science, and we congratulate the author on this great pioneer study in a new land of unexplored facts.

PRACTICAL URANALYSIS AND URINARY DIAGNOSIS: A Manual for the Use of Physicians, Surgeons, and Students. BY CHARLES W. PURDY, M.D., Queen's University; Fellow of the Royal College of Physicians and Surgeons, Kingston; Professor of Urology and Urinary Diagnosis at the Chicago Post-Graduate Medi-

cal School. Author of "Bright's Disease and Allied Affections of the Kidneys"; also of "Diabetes: Its Causes, Symptoms, and Treatment." With Numerous Illustrations, including Photo-Engravings and Colored Plates. In one crown octavo volume, 360 pages, in extra cloth, \$2.50 net. Philadelphia: The F. A. Davis Company, Publishers, 1914 and 1916 Cherry Street.

Every physician has his own favorite methods of making uranalysis; "short cuts" practiced now, which he would studiously have avoided when albuminuria, cystitis, and calculary deposits were to his cases of bronchitis, anæmia, pleurisy, eczema, etc., in the proportion of one to ten. Dr. Purdy's book on "Practical Uranalysis and Urinary Diagnosis" deals not only with the aids to accurate diagnosis of diseases which manifest themselves by abnormal constituents in the urine, through chemical processes, but also its effects in physiological and pathological phenomena. This valuable compilation is especially practical for students and the young physician, while older practitioners, who have grown used to certain methods followed by themselves for a long time, would do well to study its text, and thus keep up with the strides chemistry, physiology, and mechanics are ever making, in all branches of medicine. This work is literally the most valuable compendium of uranalysis ever issued. Part I is devoted to an analysis of urine, in which are discussed the theories of secretion and excretion of urine, composition of normal urine, abnormal urine, proteids, carbohydrates, urinary sediments, anatomical sediments, gravel, and calculus. The second division of the work, under the head of "Diseases of the Urinary Organs and the Urine in Other Diseases," aims at a concise description of the special features of the urine that indicate the presence of special pathological processes in progress in the economy, whether they be local or general, medical or surgical, together with a brief enumeration of the leading clinical symptoms of each disease, and in most cases an epitome of their nature and etiology.

A HANDBOOK OF MEDICAL MICROSCOPY FOR STUDENTS AND GENERAL PRACTITIONERS, including Chapters on Bacteriology, Neoplasms, and Urinary Examinations. BY JAMES E. REEVES, M.D., Member of the Association of American Physicians; Ex-President of the American Public Health Association, etc. Philadelphia: P. Blakiston, Son & Co. 1894.

The author of this excellent little manual states in his preface that his object in writing the book was to take away from the practising physician all excuse for his neglect of the microscope in his daily work. He says, and very justly, that the time has now come when all progressive physicians and surgeons, general practitioners and specialists alike, must either themselves possess sufficient skill in microscopic technique for the faithful and proper discharge of the high obligation which rests upon them in the diagnosis and treatment of diseases, or else be able to command the ready service of some accomplished microscopist and pathologist to do such necessary work for them. The writer himself is a general practitioner belonging to the former class, knowing by actual experience the needs of those situated like himself, and has the rare gift of being able to impart his self-acquired knowledge to others. The work is not elementary for the professional microscopist, but it is admirably adapted to meet the work of the general practitioner, for whom it was written.

We reprint the above criticism to give it our warm endorsement and add that this is one of the most valuable and practical works that can be placed in the library of every physician.

TEXT-BOOK OF HYGIENE: A COMPREHENSIVE TREATISE ON THE PRINCIPLES AND PRACTICE OF PREVENTIVE MEDICINE FROM AN AMERICAN STANDPOINT. BY GEORGE H. ROHE, M.D., Professor of Therapeutics, Hygiene, and Mental Diseases in the College of Physicians and Surgeons, Baltimore; Superintendent of the
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Maryland Hospital for the Insane ; Member of the American Public Health Association ; Foreign Associate of the Société Française d'Hygiène, etc. Third Edition, Thoroughly Revised and Largely Rewritten, with Many Illustrations and Valuable Tables. Royal Octavo, 553 pages. Cloth, \$3.00 net. Philadelphia. The F. A. Davis Co., Publishers, 1914 and 1916 Cherry Street.

This work comes to us in large clear type, well illustrated, and each chapter ends in a series of questions, which give it special value as a text-book in colleges. The various topics are presented clearly and brought up to the present time. The object is to present the leading facts in a suggestive, rather than an exhaustive way ; to this is supplemented many valuable tables. It is essential that every physician should have a clear general conception of the progress of science in this field. This volume answers this purpose admirably and we commend it to all our readers as the best single work published on this subject.

A PRACTICAL MANUAL IN MENTAL MEDICINE.

BY DR. E. REGIS, Professor Mental Diseases. Bordeaux, etc. A Prize Work, 1886. Second Edition. Translated by H. M. BANNISTER, A.M., M.D., with an Introduction by the Author. Press of the American Journal of Insanity. Utica, New York. 1894.

This work was awarded the Chateauvillard prize by the Paris Faculty of Medicine in 1886. It is translated by the eminent expert, Dr. Bannister, and is practically one of the most thorough manuals that has appeared in this country. The work opens with an elaborate review of the history of insanity down to date. Under the head of general pathology are given the definitions of the various forms of mental alienation, and the etiology, progress, and termination. In the second chapter the functional elements and the constitutional elements, and the lesions of disorganization are very clearly brought out. After describing the various forms of mania, a

chapter is devoted to the degeneracies of evolution and the degeneracies of involution. Toxic insanities comprise a very interesting chapter. The second part, the practical applications of mental pathology, is not so original or suggestive as other parts of the works. The last chapter, on the medico-legal side of insanity, is suggestive and clear. Taken together as a manual from which a general view of the entire field of psychiatry may be had, it is the best work published. The general reader will find very clear teachings on all the general forms of mental diseases, and some of the divisions of these disorders will clear up the obscurity which has confused many persons. To the mental expert this work will bring many new points to view, and suggest a new study of some topics supposed to be settled. The chapter on toxic insanities, including pseudo-general paralysis, and morphinism, absintheism, etherism, chloroformism, chloralism, haschischism, cocainism, and oxy-carbonism are of great interest to all our readers, and gives outlines of new fields of study in the future. This is the first French work which has been translated in this country, and the first work of the kind ever printed in an insane asylum by the inmates. We predict a large sale and great popularity for the work.

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES. Edited by CHARLES E. SAJOUS and Seventy Associate Editors. Philadelphia: The F. A. Davis Co., 1894.

The present work marks the seventh annual publication of what has come to be an indispensable possession for those who desire to keep fully abreast with the medical literature of the day. The principal feature of this work is the clear, concise grouping of the new facts which have been presented during the past year. Several of the special reviews of different fields of medicine are of great excellence in their clear scientific presentation, showing skill and experience in the treatment of these subjects. The division of inebriety and allied neurosis, under Dr. Kerr's care, is thoroughly well done, and will attract many readers. This work is now so

well established, and the editor and his associates have become so familiar with the labor and skill of gathering and condensing from all over the field of medicine, that this work may be said to be the most complete encyclopædia of medicine ever published. From no other source can the physician obtain a wider and more complete view of the progress of scientific medicine in the world to-day. An important feature of the work is the excellent index, which at once refers the reader to any given disease, to treatment, or to the authors of publications upon any medical subject.

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CATARRH REMEDIES SAID TO CONTAIN COCAINE.—Dr. R. G. Eccles of Brooklyn has contributed to the *Druggists' Circular* some observations as to the dangers arising from the nostrums advertised for the cure of catarrh, due to their contained cocaine. He remarks that "the sober second thought has been commended by wise people through all time. When the Birney Catarrhal Powder Company took their second thought they deemed it wise to let their patrons know that they were using cocaine every time they blew Catarrhal Powders in their noses, and began to state this fact on their labels. They certainly could not have done a more discreet thing for themselves nor better for their patrons. This writer has certainly no desire to oppose those who with open eyes walk into medical danger, but he deems it a duty to the public to point out such danger and then allow each person to act as he desires." As to the danger, Dr. Eccles writes: "Persistent use will most likely establish a habit as bad or worse than drunkenness; to become a slave to cocaine is something terrible. The writer has seen several such wrecks, and they are truly objects of pity."

Editorial.

THE NEW YEAR.

It is always a pleasure at the beginning of the year to look back over the road we have passed ; to study the movement and direction of events, to find some indications or intimations of the future progress. Twenty-four years have passed since the first meeting of our association at New York city, in November, 1870. Eighteen years ago, in December, 1876, the first number of *THE JOURNAL OF INEBRIETY* appeared. Only one person is living of that group of physicians who organized the association. *THE JOURNAL* still continues under the same management. During all these years the great central facts which this association and its journal were organized to proclaim have been slowly working their way into the public mind. That inebriety is a disease, and is curable, is fully recognized. The frontiers of truth concerning inebriety have widened, and each pioneer, from his advanced studies, points to wider and more extended realms of facts that have not been examined. While the year that has passed has echoed the turbulent shouts of the gold cure empirics and their frantic rivalry and dying groans, a great, restless movement has been apparent all over the world on a far different level. The evils and obstacles to all civilization from inebriety, and the possibility of their prevention and cure, are convictions that are rapidly centralizing both in this country and Europe. Wild schemes of reform and wilder remedies, involving the most serious complications and antagonisms are proposed. Legislation, law, theology, and the boldest charlatanism are fighting to have their theories tried and accepted. The many questions of inebriety and alcoholism are coming into prominence in society meetings, into discussions of social problems, in the re-

view and magazine, in the press and pulpit. Opinions are formed and defended with eagerness and boldness unknown before. The cure of a few hundred inebriates in asylums will be lost in the larger questions of prevention. This is the direction of scientific advance. How can we halt these armies of inebriates? How can we prevent and break up the recruiting stations? How can we isolate and lessen their destructive influence on society and on individuals? How can we prevent their culture and growth in our midst? Our association and journal have, during all these long years, urged that the inebriate was diseased, and controlled by laws of dissolution that moved with uniformity, and could be traced and understood. That all the confusion of theories and dogmas which are associated with these armies of inebriates, and the alcoholic problem practically will vanish in the light of scientific investigation. Every year our work raises in importance, and it is more and more evident that we are leading the advance and directing lines of research that promise a great revolution in the present study and treatment of this subject. Each year develops and solidifies the work of the past, and each year brings new assurances for the future. To all our friends and co-workers are due thanks and congratulations. The past is full of cheering promises for the future.

INEBRIETY AMONG RAILROAD MEN.

The drink problem on American railroads is a question of business and without any sentiment. If the man who uses spirits in moderation or excess shows any incompetency he is discharged at once. An engine was sent to the shop for repairs more frequently than usual; an inquiry showed that the engineer was a beer-drinker. The inference was that beer had disturbed his judgment and made him more reckless, and he was discharged. Practical men are afraid to use spirits on the road for fear they will neglect some duty, and not act wisely in an emergency. Re-

cently, a great railroad corporation gathered all the facts concerning the men, and the conditions of every accident which had occurred on their lines for five years. When tabulated it appeared that forty per cent. of all accidents were due altogether, or in part, to the failures of men who were drinking. That in eighteen per cent. there was strong suspicion of similar causes, yet no clear proof. In one year over a million dollars' worth of property was destroyed by the failures of beer-drinking engineers and switchmen. The companies' rules requiring temperate men for all positions are more and more rigorously enforced. Engineers find that practically they are unable to do good work while using spirits, even in small doses. The coolness and presence of mind so essential in their work is broken up by alcohol in any form.

Trainmen, men exposed to the weather, reach the same conclusion, if they are practical men. The startling mortality of brakemen is referable in many cases to the use of alcohol to drive out the cold, or keep awake in long hours of service. Each year the duties and responsibilities of railroad men increase, and men more temperate, accurate, prompt, and careful in their work are required. Only absolutely temperate men can do this work for any length of time; all others fail and are dangerous in their weakness.

A western road permitted an inebriate, who was really an able man, to continue as a claim agent adjusting accounts against the company. His drinking was supposed to be an aid in the settlement of claims with other drinking men. After his death a temperate man who filled his place saved several thousand dollars a year by doing the same work, repeating the common experience that inebriates are always more or less incompetent. The great railroad strike of last year began among inebriates, and was sustained by drinking men and saloon loungers everywhere. While the large, well-managed companies are steadily driving out all moderate or excessive users of spirits, as business wisdom, and a measure of safety and security to the road, many of them

make the mistake of permitting open saloons in their buildings at stations. The poor workmen are thus exposed at a time when they are least able to resist. It is inconsistent to rigorously forbid all use of spirits to the employes, and provide it for the traveling public. Notwithstanding the fact that nearly two-thirds of all trouble and accidents to passengers are confined to inebriates and persons intoxicated, several roads have recognized and avoided this mistake. It may be said with pleasure that inebriety among railroad men is rapidly decreasing, especially among men in active service. The time is approaching when railroad men will be composed of the most superior mechanics and workmen of the world. Of the railroad men who are inebriates and discharged, they are probably the most incurable. The strains and drains essential and a part of the work, especially of trainmen, are followed by a form of exhaustion and central nerve degeneration from which recovery is difficult. Railroads are rapidly teaching the true solution of the great drink-problem, viz.: That alcohol is an anesthetic and paralyzant, and that inebriety is a disease, and the victim unfit and incompetent to act and reason soundly. They are also teaching the incompetency of men who use spirits to do any form of work requiring care and exactness. When this is accepted as a fact, inebriety will be judged in its true light, and the inebriate thrown out as unfit and unable to do the world's work.

INEBRIETY AND CRIME UNDER THE NEW YORK CODE.

The common law was emphatic in stating that drunkenness was no excuse for crime, but in certain cases evidence of intoxication was admissible, and could be considered as an extenuation. The statement that a man who made himself voluntarily drunk should take the responsibility for any crime committed is repeated as if it was a truism. If the assault was unprovoked the fact of intoxication would not be allowed to affect the legal character of the crime. The jury should

not consider this fact of intoxication where the question of premeditation was raised. From this the New York penal code has varied, and provides that a crime committed while intoxicated shall be equally criminal, but whenever a purpose or motive or intent is apparent constituting a particular species of crime, the jury may consider the fact of intoxication in determining the purpose of the crime. It is affirmed that the fact of intoxication might show either premeditation and deliberation, or the absence of it; this the jury should consider, and the judge should leave it to them exclusively.

Recently the Court of Appeals have decided "that it does not think that under this statute the intoxication need be to such an extent as to necessarily and actually preclude the defendant from an intent or from being actuated by a motive before the jury would have a right to regard it as having any legal effect upon the character of his act. Any intoxication may be considered by the jury, and the decision as to its effect rests with them. But that a man may be grossly intoxicated and yet be capable of forming an intent to kill or to do any other criminal act is indisputable; and if while so intoxicated he forms an intent to kill and carries it out with premeditation and deliberation, he is without doubt guilty of murder in the first degree.

"If, however, by reason of intoxication, the jury should be of the opinion that the deliberation and premeditation necessary to constitute murder in the first degree did not exist, the crime is reduced to a lower grade of murder, or in the absence of any intent to kill, then to manslaughter in some of its grades. The intoxication need not be to the extent of depriving the accused of all power of volition or of all ability to form an intent."

This is a marked advance from previous rulings of judges and shows that the facts are slowly being recognized. The statement "that inebriates can be grossly intoxicated and capable of forming an intent to commit crime or kill is indisputable," is only true in theory. The crime committed in this state is always impulsive, unreasoning, and accidental.

The next statement of being able to premeditate and deliberate when grossly intoxicated is never seen in reality. While men intoxicated may display some cunning and persistency of purpose, they never deliberate or premeditate when intoxicated. This is impossible for a brain anæsthetized by spirits. In some cases men who have drunk a little become possessed of delusions, and may develop insane cunning in conduct for a time, but this is so clearly defective as not to be classed as sane. The question of motive and intent in a drinking man cannot be determined; there are no facts or means of comparing his mental operations with that of a sane man. The brain is in a semi-paralyzed condition, and cannot act normally or sanely; also he may have a defective brain when not under the influence of spirits; he may be incapable of forming a conscious motive and intent for any act. The delusion that intoxicated men can act with the same capacity and consciousness as when sane, still clings to the legal theories of crime. Happily, a change is going on in public sentiment, and the law will recognize it in the near future.

GOLD CURE LEGISLATION.

According to gold cure authorities, the State of Colorado has enacted a law, now in active operation, which has some unique features. The first section permits anyone to petition to the board of county commissioners to place a drunkard in a *reputable gold cure institution* at the expense of the county. The inebriate must show his anxiety and willingness to take such a treatment and be properly vouched for. Then the board shall send him to the institution which will receive him at the lowest figures, provided the best interests of all seem to be promoted by this course, and the county shall pay the bills. This cure and treatment shall be according to the wishes of the board, who may change or stop the treatment or send him to another institute, as they may consider proper. No county shall send the same man twice to the same institute. The inebriate agrees to attend the institute

for treatment, and asserts his excessive addiction and inability to abstain alone by will power.

The second law seems to be in operation in Maryland. This provides that the friends of the inebriate may petition the judge of the court to send the case to some institution at public expense. This institution shall show by a sworn certificate that it has had the largest number of cures during the past twelve months and the smallest per cent. of relapses. Such certificates are to be deposited with the secretary of state. This institution shall not charge a sum greater than one hundred dollars for treatment. No case shall be bound to be sent to an institution who will charge less than one hundred dollars unless the judge thinks the best interests will be accomplished.

A law has been passed in *Louisiana* of the same purport, and limiting the cost of treatment to one hundred dollars. A law has been introduced in *Wisconsin* to commit inebriates to some institute where the remedies have been in use for five years, and are supposed to be sound and useful. The cost is not to exceed one dollar a day, and the length of treatment be determined by the physician in charge. This has not become a law yet. Great emphasis is laid on the institute who has demonstrated a thorough method of treatment.

Evidently the day is far spent and the night is coming on, and, unless the State comes to the rescue, many poor inebriates will go down before the gold cure ark comes along.

CASE OF JANE COYLE.

This woman was married, without children, and had lived a quiet life, attending to all her household duties. Her husband was a prosperous groceryman, devoted and kind to his wife. Her ancestors had been beer-drinking English people of the middle classes, and she had occasionally used beer, when feeling badly, for many years. When about forty-four years of age, after a mild attack

of fever, she began to use spirits to stupor. This grew worse until at fifty she was a chronic inebriate. At this time she drank brandy every day, and was intoxicated each night, and had become incapacitated for all duty. In the morning, when not so bad, she would beg her husband to help her, and to find some remedies or physicians who would cure her. Several medical men prescribed for her, and a three months' visit to a private sanitarium was followed by a relapse, and the same excessive drinking. One day, after a period of more than usual excess, when the family physician was called and prescribed some temporary medicine, his opinion was asked by the distressed husband. In a loud, emphatic voice, so she could hear him in the next room, he declared she was incurable. He said she ought to die as soon as possible, that she was determined to kill herself and go to hades, notwithstanding everything that could be done. He urged her husband to procure a barrel of the cheapest brandy, and place it in an adjoining room, and give her every facility to drink as much as she could. Adding that in a short time she would die, and all would be glad to get rid of her. After hearing this and similar advice from the physician, she relapsed into a semi-stupid state, and refused to take spirits. The next day a barrel of brandy was placed in an adjoining room, and both husband and nurse were urgent in their advice to have her drink of it. She continued to refuse, using milk and coffee in the place of it. Finally, she became very angry, and ordered the barrel taken away, and begged them never to mention the name of spirits again in her presence. From this time she recovered, never using alcohol again, and when able to walk about had all spirits removed from the house. She continued temperate and well four years, up to death from acute pneumonia. This was a case of physical shock, in which some unknown physiological change took place in the brain, and the drink-craze died away at once. The impression of an idea was so overwhelming that it dominated all diseased impulses, and enabled her to live temperately until death.

STATISTICS OF INEBRIATES.

I stated two years ago that there was approximately one million six hundred thousand persons who use spirits to excess in the United States. By excess I meant all persons who drank to intoxication continuously or at long intervals. This would include many persons who are temperate most of the time, then have drink paroxysms. It would also include persons who use strong spirits daily, seldom manifesting the usual symptoms of intoxication, but at all times more or less under the influence of spirits. These figures were reached from a study of the statistics of persons arrested for intoxication in the lower courts, also the general opinion of persons with a wide acquaintance among business men, who assert that less than two per cent. of all drinking men come under legal notice. The comparative statistics of a town of five thousand people in Massachusetts, Kentucky, and Texas might differ widely in the number of spirit-drinkers, and yet the same general facts would prove true in all of them. In some communities a very large per cent. of all the males are spirit-drinkers, and many females use spirits as a medicine most of the time. Of course, wide differences of opinion will prevail until some accurate statistics are made. Two attempts to make a census of drinking men in Eastern towns revealed many difficulties, and the intensely morbid desire to conceal the drinking customs of people. Both of these censuses indicated one drinking man to every eight persons, and a strong conviction that this was a very low proportion. There are many reasons for believing that the estimate of a million six hundred thousand persons who use spirits to excess in this country is a minimum rather than a maximum statement. If the persons who so frantically deny this statement will make a little study in their own neighborhood, they will probably find facts that will materially change their views of the extent of spirit-drinking in this country.

Clinical Notes and Comments.

INEBRIETY AND INSURANCE.*

BY DR. NORMAN KERR, LONDON.

Dealing first with the subject of insurance against accident, Dr. Kerr said that associations insuring against accident, or death by accident, usually had a proviso to the effect that no claim could be allowed if the insurer was intoxicated at the time when the accident occurred. Two special legal points were here involved. To successfully resist a claim on the ground of the insured's drunkenness at the moment when the accident took place, it must be established that he was drunk at the time. It must also be proved that the accident was the cause of his inability to follow his occupation, or of his death. With reference to the first point, the lecturer pointed out that the contradictory testimony of witnesses was sometimes most perplexing, due to the fact that there were varying opinions as to what constituted drunkenness.

After quoting cases in which companies had been successful in resisting claims, where proof had been forthcoming that death was due to alcoholic disease, the lecturer proceeded to deal with life assurance apart from accident, and quoted cases to show that resistance to claims for payment had been successful on the ground of concealment of intemperance. In all cases, however, the refusal of the payment of the amount for which the deceased's life had been insured, on the ground of concealment of intemperance, had not

* A synopsis of a second lecture before the Society for the Study of Inebriety.

been sustained. On the point of concealment of intemperance, it was not always easy to establish that the deceased was intemperate either before or after insurance had been effected. Having touched upon the question of opium, the lecturer said that in addition to the purely medico-legal relations of insurance actions to inebriety, there remained a wider and important field for research in the commercial relation of life insurance itself to narcomaniacal indulgence. Insurance companies were generally understood to be desirous of avoiding the risks of intemperate lives altogether, but there could be no doubt as to the fact that a considerable proportion of the many inebriates who abound in our midst were insured. What the exact proportion might be, it was difficult to estimate with even an approach to accuracy. Among the drunken poor only a very small number of individuals had life policies, but as we ascended in the social scale the ratio increased. Of inebriate artisans and skilled workmen, probably more than one-half had their lives insured. Coming to the middle and upper classes, so called, in all probability at least one-third of men had taken out policies on their lives. Inebriates who were insured might be divided into two groups — those who effected their insurance before and those who effected their insurance after becoming addicted to drinking. With regard to the first class of insurers, the lecturer said that no provision except the forfeiture of the policy on the substantiation of the fact of intoxication at any previous period in life could possibly meet the difficulty. Such an insurance revolution, however, would be too radical, such a procedure too drastic, to be practical. If enforced it would probably act as a strong deterrent from insurance altogether. Yet the loss to insurance associations from this source was undoubtedly grievous and amounted to a very much larger sum than almost any one could imagine. Some time ago a leading official to a well-known life assurance company in the United States estimated the annual loss arising on inebriate lives insured with his office at several millions of dollars. With regard to

the second class of inebriates, those who were addicted to intemperance for a longer or shorter period prior to applying for a policy and who concealed their previous mode of life from the office, that was a still more numerous class than the other, and the loss accruing therefrom was very grave indeed. As he had before pointed out, there was a remedy at law for the companies against this species of fraud — for fraud it often unquestionably was ; although in many cases the concealment was not purposely designed. Of course the various life offices had to bear the brunt of the heavy financial loss arising from the insurance of both these classes of inebriate lives—or rather the burden of loss on these additional and uncertain risks had to be shared by the policy-holders, the offices being compelled in self-protection of themselves and their assured to weigh the scale of all premiums sufficiently to cover such risks. The result was that the rates of premiums were higher than they would be if the inebriate risks could be substantially reduced. Thus the abstaining life had to bear the loading necessitated by the abnormal risks of inebriate policy-holders. Having pointed out that such a system acted unfairly against and was unjust to the abstaining policy-holder, the lecturer commended the example of such offices as the United Kingdom Temperance and General Provident Institution, the British Empire Mutual, and the Sceptre, who had separate classes for abstainers and non-abstainers. It ought not to be forgotten that the acceptance of so-called “moderate” or “temperate” lives involved not a little risk of the offices being saddled unawares with a considerable sprinkling of undesirable, because doubtful, lives. That risk, however, was practically unavoidable for many reasons, for there were so many interpretations of intemperance, for a given quantity of alcohol had a different effect (*i. e.*, in degree, not in kind, all intoxicants being of a poisonous character) on different individuals, and even on the same individual at different times. It remained, therefore, to locate the standard in the specific life, in the individual idiosyncrasy, and

make the standard itself the real (not the apparent) effect which any beyond an arbitrary physiological minimum might, from their modern knowledge of the action of alcohol and its narcotic allies, be reasonably believed to have on the life in question as compared with the known effect on an average life. The effects of such habits might not show themselves immediately; but the insurance office required to be informed of their existence or non-existence, and not of the period when they were likely to affect health visibly or to engender a fatal disease. To assert that a man could be addicted to excessive drinking without impairing his health was contrary to experience. There was no such compensation or balance of habits as was supposed to exist in such cases. Habit might accustom a man to intemperance, it might enable him to drink a large quantity of alcoholic liquor without apparently being injuriously influenced by it at the time. But a deranged state of the system would sooner or later follow, and delirium tremens or dropsy would probably intervene. A good constitution might enable a man to resist the pernicious effects for a certain time, but ultimately they would show themselves in some form of disease, and the result of his intemperance was made apparent by early death. As to what constituted intemperance, the lecturer quoted Dr. Tidy, who had said, "It is difficult to say in words what constitutes intemperance. An occasional 'drinking bout' does not make a man, in strict phrase, 'intemperate.' Again, a habit of indulgence which would constitute intemperance in one man may not constitute intemperance in another. Hence, for insurance purposes, the true question is, not What constitutes intemperance generally? but Is there reason to believe that the applicant takes more alcohol than his constitution will bear? In this matter, the general circumstances of a man's life must be considered. Much beer and much exercise is a totally different combination to much beer and sedentary habits. Hence it is evident that, in insurance cases, physicians and jury must consider the word 'intemperate' as a habit prejudicial

to the life of the special individual and not in any broad and general sense." Continuing, Dr. Kerr said that the most skilled and painstaking physical examination would fail to disclose the initial morbid states of gradually but surely advancing inebriety, in many cases. Only when the disease had attained a certain height could any appreciable sign of its existence be so diagnosed. Hence the need for some more scientific method of dealing with proposals from inebriates who were not recognized to be inebriates by public estimation. Little as we know with certainty about this malady and the action of inebriants on the human frame, we know enough to form an approximate idea of the comparative values of temperate and intemperate lives. By "temperate" lives they might mean insurable persons who, if they drank at all, drank too little and too seldom either appreciably to disturb normal functions, or to keep the system continuously under the influence of the intoxicant. There was a scale which might fairly be applied in the elucidation of this valuation. We know that one prominent effect of alcoholic poisoning, whether spread over a longer or shorter series of years, was premature aging. If there was one fact concerning alcohol better established than another, it was that it operated in antedating the day of our death. Based on an exhaustive comparison of a wide induction of insurance death returns and distribution of profits to abstainers and non-abstainers, the medical examiner ought to be able to load the premiums of any inebriate, whose life was not rejected, with additional years of premium corresponding to the increased risk. That scale might be extended in application to the lives of "moderate" drinkers. As the vital statistics of those companies which insured non-abstainers and abstainers in different sections showed a higher rate of mortality, with a smaller proportionate return of profits among the non-abstainers than among the abstainers, a thoroughly scientific revision of rates would take the abstaining life—free, of course, from organic disease, as the normal starting point. That would be

a typically healthy life, calling for no loading of premium. Each non-abstaining life which might be deemed fit to be accepted (of course some of this class of lives would involve too heavy a risk and would have to be refused) would be weighted with an addition to the premium on abstaining first-class lives, proportional to the extra risks involved. That would be fair to all parties. The non-alcoholic insurer would reap the full benefit of his healthful habits; the "moderate" or "immoderate" or "free" drinker would have to pay a premium commensurate with the actual risk on his life to the office insuring him. Having given it as his opinion that regular "moderate" drinking tended to shorten life, he said that practical confirmation of the noxious influence of what was generally held to be "moderate" drinking and of the accuracy of the scientific classification of alcohol as a poison, was afforded by the only available practical test—experience. The records of associations for insurance against sickness and death, with different sections for abstainers and non-abstainers, supplied the opportunity of applying that crucial test. Take a quarter of a century's returns of the United Kingdom Temperance and General Provident Institution. The expected and actual claims for insurance against death during twenty-five years had been, in the General Section, 7,277 and 7,043; in the Temperance Section, 4,856 and 3,423. That was to say, there was a mortality in the General Section of 96.66 per cent. and in the Temperance Section of 71.49 per cent., a difference in favor of the latter of 26.17 per cent. In other words, reckoned by a common life table, there were 243 fewer deaths in the General Section, against no less than 1,433 fewer among the abstainers. If all those insured had been non-abstainers, the total deaths would have been 11,727. If all had been abstainers, the deaths would have been 8,553, a difference of 3,174 deaths, which last total number gave the nearest approach to accuracy as to the preventable loss by death to a considerable group of selected lives. Any objection to the unmistakable

meaning and force of those figures on the score of the General Section including some inebriates, was counterbalanced by the fact that the lives in that section had been below the expectancy, supplemented by the additional fact that some of the abstaining section had been reclaimed drunkards, and had succumbed to cirrhovic and other fatal lesions dating from their pre-abstinence days. The transfer of insurers from one section to the other, both ways, had not appreciably affected the comparative death rate. The only precise information which he had as to transfers had been with regard to the Sceptre office, Mr. Bingham having supplied him with the total number of deaths in the transferred during the seven years, which had amounted to seven. The fact was that the transfers had been found to occur from the omission of the insured to fill up and send the declaration of continued abstention which had to be done at stated times. The claims by death expected during 1891 in the Sceptre (calculated by the Institute of Actuaries' HM table) as compared with those which actually occurred, were as follows :

<i>General Section.</i>		
Expected Claims.	Actual Claims.	Rate per cent.
115	93	80.86
<i>Temperance Section.</i>		
Expected Claims.	Actual Claims.	Rate per cent.
61	30	49.18

The returns of the office for eight years showed a difference in favor of abstaining lives of 22.5 per cent. Having quoted other figures to show the advantage of total abstinence, Dr. Kerr said the figures he had given proved that even the strictly limited dietetic use of intoxicating beverages was prejudicial to health, inimical to longevity, and considerably increased liability to disease. Even if the regular limited, or moderate, drinker never drank to excess, other things being equal, he would yet have less vitality, greater liability to disordered health, with inferior recuperative powers to stand up against the onset and weakening effects of disease and accident. Another very important point, especially in these later days of more active philanthropic effort at the res-

cue, and of intelligent medical treatment, of the victims of strong drink, resulting in the greatly increasing numbers of reformed and cured inebriates, was the answer which insurance companies had to make to applications for policies on the lives of inebriates who had entirely abandoned the use of intoxicants and all other inebriating substances. In their "Handbook of Assurance," Dr. J. E. Pollock and Mr. James Chisholm had written these remarkable words: "We scarcely believe in the existence of a reclaimed drunkard, so rarely is he met with in medical practice, and after many years of active professional work we have scarcely seen two such cases which could be verified." And they added: "We cannot, therefore, advise the acceptance of a total abstainer who is known to have been habitually intemperate. They almost always break out again." Mattison, in "Opium Addiction as Related to Life Insurance" (New York), said: "All companies, very properly, exclude alcoholics; but ex-rum users, if all other conditions be good, are taken by most life assurance companies on short-term policies after three to fifteen years, provided the steady taking ended before the age of thirty-five."

It must be borne in mind, continued the lecturer, that even if an inebriate totally discarded his cups and never drank any quantity of any intoxicant, nor consumed in any form any other inebriant, he could not expect in his strict teetotal days to escape "scot free" from the injurious physical consequences of his previous term of intemperance. Especially with alcoholic intoxicants did an inebriate course of five, ten, fifteen, twenty, or more years leave its mark on the frame which had been so long assaulted with heroic doses of so potent a poison as alcohol. In many different ways and on many vital organs, by tissue destruction, by structural degradation, by cell degeneration, by permanent lesions of stomach, liver, kidneys, lungs, heart, brain, and nerve substance, as well as by the deterioration caused by functional disturbance and depravity. Alcohol branded as with a red-hot rod of iron the whole man, leaving the

scars to attest, long after its abandonment, its once blighting influence on the human body. There were, therefore, additional risks in insuring an erewhile though now abstinent inebriate, but those risks were not nearly so great as Pollock and Chisholm's sweeping pronouncement would seem to indicate. The onward route of the marvelous series of phenomena of the nineteenth century known as the temperance movement, or abstinence crusade, had been thickly dotted with an enormous company of drunkards transformed by its beneficent influence into sober and industrious citizens, a chaplet studded with pearls of great price, each of which was worth a king's ransom. Reclaimed inebriates were everywhere around us, entrusted with responsibilities of no ordinary value. In all ranks, professions, and callings they were to be found fulfilling the duties of life as faithfully as the abstainer from birth. After nearly thirty years of study and experience of the case of habitual drunkards, he had no hesitation in declaring his belief that, on an average, at least one-third of such as have been under skilled treatment and in seclusion for a sufficient time have remained staunch water drinkers all through their after life. Even of drunkards brought under moral and abstinence influences alone, without medical cure (though most religious and moral missions of this kind now recognized a diseased condition in the greater number of drink victims), his observation had been that from 10 to 20 per cent. had kept steadfast in the practice of the only safe rule of life for them — entire abstinence from all intoxicants. The aggregate of the saved from alcoholic excess was thus by no means contemptible. He estimated that in Britain there were at least 200,000 ex-drunkards now consistent nephelists, a goodly proportion of whom had a record of from ten to thirty and more years' freedom from alcoholic inhibition, and there were at least as many more in the United States of America. Taking into account the similarity, rescues in our colonies, on the continent of Europe (where special sanatoria and the temperance propaganda had cared for a very large number of individ-

uals), and in other quarters of the globe, he felt that he was far within the truth in computing the present number of permanently restored inebriates in the world at no less than 600,000. He was therefore of opinion that all lives of reclaimed drunkards should not be rejected by life assurance companies. A certain proportion of such lives were so bad, the proposers had so permanently and seriously damaged their constitutions by their former indulgence, that they were practically uninsurable; and justice to the already insured demanded that such utterly bad lives should be refused. Where, however, there was no evidence on examination of organic disease, and where the abstaining period had been long enough to warrant a reasonable prospect of abiding abstinence, such lives ought to be deemed insurable at an additional risk, representing an enhanced premium. What the loading should be could be arrived at by actuarial calculation on the wide induction of facts and figures in the possession of insurance societies. In this connection, two points had to be determined — first, What term of abstinence should be regarded as a minimum requirement? There could be no absolute term fixed, as the necessary nephalian term would depend largely on the present state of the proposer's health, on the duration of the drinking habit prior to abstinence, and on his heredity — inebriate, neurotic, and general. But it appeared to him (the lecturer) that, taking into consideration the deceptive character of alcoholic action on the constitution, a minimum abstinent term of five years should be held to be the shortest abstaining career qualifying for the consideration of a proposal from a reformed or cured inebriate — in a case of not more than five years' standing. Beyond five years there should be half a year of probation added for every additional year of former intemperate career. With opiumists, the minimum term of freedom from the drug might be rather less. Though opiumania and morphinomania were more difficult of cure than alcoholomania, pathological science had not as yet revealed any *post mortem* appearances indicative of the grave organic degeneration

and permanent structural alterations seen in the bodies of intemperate alcohol takers. The well-known case of the executors of the Earl of Mar *vs.* Edinburgh Life Assurance company, tried at Edinburgh in 1830, did not yield any facts in support of the contention that opium-eating was antagonistic to long life, which was one of the pleas relied on by the company for resisting payment of the policy. There could hardly be any doubt, however, that in the opinion of the overwhelming majority of medical observers, that continuous, excessive opium consumption was subversive of good health, and therefore likely to induce premature decay. On the whole, giving due consideration to all the probabilities and risks, he agreed with Dr. Mattison's suggestion that three years' entire abstention from the drug in any form, after not more than five years, ought to qualify for the acceptance of a life in other respects eligible for insurance. He (Dr. Kerr) would add the additional condition that the applicant be not above forty-five years of age on this probation. If the practice had been extended over five years, he would extend the period of probation six months for every additional addiction term of two years. In the case of inebriates addicted to chloral and chlorodyne, he would insist on the same minimum probationary term as with opium; but in the case of chloroform and ether inebriates, on the longer term required for abstaining alcoholic inebriates. The other point for consideration was the amount of loading which the premium of an insuring cured alcohol inebriate of at least five years' good standing ought to bear to meet the additional risks on the individual life. Reviewing the results of the various series of vital statistics which he had adduced, before the exact risk was determined by actuaries from a collection of records extended enough to warrant fairly accurate deductions, they might form a rough idea for present purposes. In the case of alcohol drunkards, if the period of alcoholic addiction had been not over five years, he would suggest a loading which would bring the premium up to the

premium payable at the ordinary risk on a life being insured five years later in life. For every additional year of the alcoholic indulgence, he would add half a year's extra premium. In the case of opium consumers who had given up the poison for at least three years, he would age the premium by weighting it so as to bring it to the premium, at ordinary risks, payable if making the proposal four years older. The lives of once inebriate, but now abstinent, persons would thus be eligible for insurance at an increased charge for premium somewhat commensurate with the added risks; and a solid encouragement would be held out to drunkards to reform. There were many circumstances peculiar to an individual life to be weighed — for example, the risk would be very much greater in the case of a person who had been predisposed or excited to inebriety by permanent structural brain lesion, as in syphilis affecting that organ, than inebriety developed through evanescent functional disturbance. In the same way the risk would be smaller in an ex-inebriate with no family history of inebriety or insanity, than in one with a clear heredity of either of those diseases.

In conclusion, Dr. Kerr said that Dr. Mattison had proposed that the lives of reformed drunkards might be insured on the condition if they relapsed into inebriate excess the policy would lapse. In the event of such a course being adopted, there ought to be adequate provision for the repayment by the company of the surrender value if re-addiction should unfortunately take place. There would appear to be some doubt in the minds of insurance officials as to whether the enforcements of such a condition could be sustained in law, or whether in a suit against the insurer for the payment of the policy on the life of a reformed inebriate who had returned to his potations, the verdict would be against the insured. A legal opinion, however, had been obtained to the effect that such policies might be issued and that there was no legal objection.

THE CURE OF THE ALCOHOL DISEASE FROM A PHYSIOLOGICAL POINT OF VIEW.

BY A. ENFIELD, M.D., BEDFORD SPRINGS SANITARIUM, PA.

The day of medical theories which do not have the basis of established facts to justify them belongs to the past. It has taken ages of observation and investigation, by the greatest intellects of the profession, to elevate the science of medicine to the high position it now occupies. We live in an age of light and knowledge, an age in which old isms, theories, and fallacies are fast disappearing before the sweeping progress of this century.

The past decade has given us the beginning of a new epoch in the science of life. Medical science is now called upon to defend our bodies from the parasites which prey upon us from without, and physiological and chemical research have taught us the therapeutic application of drugs in the cure of dipsomania and kindred diseases.

The power of self-regeneration is one of great distinctive properties belonging to all organized living bodies, but the moment we commence to live we begin to die. Molecular change may be increased or retarded by various foods and drugs taken into the system at stated periods. We apply the term "hunger" to that peculiar want felt by the human system for food, a sensation (when not too prolonged) by no means disagreeable, and one which is often excited by the sight or smell of a savory dish.

It is true the taking of food is influenced in some degree by exercise and habit, as well as by the sense of hunger, and if our systems are not supplied at regular intervals by this nourishment the sensation becomes so great that we suffer great pain and distress.

All the elements necessary to nutrition (except oxygen and light) can be taken into the system by the mouth ; and if it were not that there comes a time in the history of every

organized body when the tissues fail to appropriate sufficient new material to repair the waste we would continue to live forever. Death is, consequently, a physiological necessity. Therefore, there is no such thing as true euthanasia. But it is the duty of the physician to secure for man such good health as shall bear him in activity and happiness onward in his course to the goal. Good health and happiness can be secured by living in obedience to the laws of health. When the medical profession succeeds in teaching the world how to live in a proximate, physiological, and normal condition, then physicians will have reached the consummation of their calling.

Fifty years ago there was not a medical college in Europe or America that had a special chair of neurology, whereas, to-day there is not a school that has not at least one such chair, and some schools have two or even three professors who are giving their whole time and attention to discoveries and advancements in this important branch of medical science. It is, therefore, gratifying to the American student of scientific medicine to note the amazing progress that has been made in the discovery and cure of nervous diseases, especially by American neurologists.

It was our own beloved Rush who, a century ago, stood as the great pioneer (in advance of all the world) to describe and clearly demonstrate the future of this branch of medical science. It was through men like Rush, Pinel, Brown-Sé-
quard, and others who taught us that insanity is a disease, and not the devil, in man, as was generally supposed prior to their time. So that to-day, while medicine is advancing all along the line, in no other department has there been such an advancement as in the discovery and treatment of nervous diseases. Advancement has been so rapid in this special department of medicine that some writers claim that all diseased manifestations are but the result of nervous shock.

Vesalius took his own life in his hands when he was brave enough to sharpen his scalpel for his first dissection of the human body. Galen taught us that the arteries con-

tained blood and not air, and Harvey showed us how that blood circulated. Jenner, Pasteur, and Koch have been bold enough to transfuse the very elements of chemistry into our blood, in order to kill the myriads of germs that infest our organisms, and produce disease and death. By the aid of physiology and chemistry, we have used the elements around us to cure disease and prolong life. The great labors of the past are but now beginning to bear their fruits. Alcoholic neuritis is no longer considered a habit, but a disease ; as much so, indeed, as insanity.

It is an insult to medical science to say that all the brave and good men who have killed themselves with alcohol and opium did so just from habit. Tell me that all the men of genius whose lives have been wrecked and ruined by these drugs were led to their use by mere accident? Impossible!

These men fought like heroes against their diseases, and for these diseases they are not responsible. The day has come in the fullness of time when we can say that this disease which has destroyed so many shall destroy no more. Thousands of human beings are being rescued from the destroying influence of these diseases, and thousands and tens of thousands are yet to be saved from an untimely death.

Every new advancement in science is met with a storm of opposition. Dipsomania must be recognized as a disease and not as a habit. Until recently the medical profession has neglected to examine this subject carefully from a physical point of view. We must examine this subject the same as we examine any other ailment if we wish to reach a satisfactory conclusion.

It is not the intention of this article to begin a controversy with those who honestly believe that inebriety is the result of habit alone. Inebriety is no more due to habit, vice, and sin than is insanity. If inebriety is a disease, then its cure rests with the physician ; if it is wholly a sin, and man is entirely responsible for his appetite, then his treatment and salvation must come from those who claim that it is a habit.

A Christian will be a better, a brighter, and a happier Christian if we can remove this appetite for stimulants and give him a healthy stomach. An ounce of cure is worth a pound of prevention, if applied at the proper time. Thousands have been crying for help from this dreadful disease, while theorists have been talking, and preaching, and splitting hairs as to whether it is a moral or a physical evil.

The word habit, as is the word malaria, is a convenient word with which to explain something we know nothing about. Conversion, change of heart, and the grace of God are the great moral helps, but they cannot cure a diseased system nor a depraved stomach. The moral side of intemperance has been proclaimed for ages, and yet statistics show that inebriety is on the increase.

On this subject the medical profession has remained silent entirely too long, and it has allowed the moralists to advance their own views in the matter, without any scientific examination of its cause, its nature, its character, or its curability. We must admit that the moral agitation of the subject has done much good, but still there is something wanting. The removal of alcohol does not remove the craving for its use, but rather increases the appetite for it.

If we cannot cure the inebriate by the application of drugs scientifically applied, we shall never be able to cure him by forced abstinence. Public opinion may deny this and opposition may come from every superstitious person in the land, but that will not frighten the conscientious and progressive physician who has science, experience, and results to support him. He must go patiently on, and look beyond the present opposition of the incredulous and skeptical public, until he has worked out the physiological and pathological condition of the inebriate and restored him to health.

Man is a complex animal, full of variations, and easily influenced by any change in his nerve-centers. His call for stimulants arises from a loss of nutrition to some part of the central system, just as the call for food arises from the same cause. Therefore, it is impossible to cure this morbid crav-

ing, which has its seat in the brain, without first removing the cause by appropriate medication.

The inebriate may be anxious to quit the use of the stimulant, but the moment he makes the attempt his diseased stomach and brain give notice that they must have something to nourish them.

It is not within the scope of this short article to analyze and examine the many predisposing causes of this disease,—such as heredity and non-heredity, occupation, etc.,—or we might present many facts and data that would help to determine this question, outside of any social feelings or opinions we may entertain.

There is no subject in medicine that should receive more interest or more attention from the profession than this subject of inebriety, and yet, in the past, we have allowed the laity to do all the thinking, writing, and legislating on the subject. It is time we call a halt. The physician is certainly better qualified to investigate the subject, and to pass his judgment on it than those who have never examined it from a scientific point of view.

The same general principles apply in the treatment of this disease that apply in all chronic nervous diseases. Physical laws and forces are the same in all individuals. The system broken down by long years of dissipation cannot be relieved by any one drug or combinations of drugs alone, but by building up the whole body by special diet, baths, exercise, electricity, and good hygienic surroundings.

In my hands a combination of drugs has proved most beneficial. Each and every case must have special treatment, according to the symptoms manifested.

No doubt chloride of gold may possess alterative properties, and, when properly and systematically given, in combination with strychnine, atrophine, coca, quinine, sulphonal, and codeine, has a tendency to change the habits of the system, remove the diseased condition of the nerve-centers, and allow nature to return to a normal condition.

These powerful drugs, when given for a long time, so pro-

foundly influence and build up the nervous system that the inebriate feels strong and well, and gradually acquires as much repugnance for stimulants as he before had an appetite for them. The treatment breaks or removes the cause of the disease, and the inebriate starts in a new career of life. Of course, he may relapse ; so he may from any other nervous disease. Anything that tends to exhaust the brain or lower the vital forces predisposes to a return of the disease.

The individual should live a life free from excitement, annoyance, and worry ; eat wholesome and substantial food, and be constantly under the observation of a physician. Physicians who are familiar with the modern treatment of inebriety, do not condemn that treatment ; but they rightly refuse to indorse nostrums of which they know nothing. The general practitioner has not the time to devote to the treatment of these cases. He might as well attempt to treat all his cases of insanity.

Specialists have explored the grounds, investigated the disease, and formulated the treatment, and are, therefore, more competent to handle such cases successfully. Nor is it advisable for the patient to treat himself. Most drugs that are of any value in this disease would prove dangerous in his hands.

My reason for dwelling upon the neurological and physiological aspect of this disease is, to call the attention of those outside of the medical profession to the great advancements that have been made in this special department of the healing art. The world is too apt to look with disfavor upon any new discovery that is invisible and incomprehensible to the common mind.

People grow wild over the graphophone, the telephone, or the electric car, but fail to realize the subtle and invisible agents that science is using to cure man. In conclusion, we may then state with perfect confidence that inebriety is a disease and not a habit, and, being a disease, is, therefore, curable ; and, in order to intelligently treat it, we must study the nature and character of the disease as it manifests itself in

different individuals. We must approach the subject from the physical and not from the moral side of the case. We must discard any preconceived notions and theories not based upon facts.

TEA INEBRIETY.

Dr. Wood of Brooklyn, N. Y., in the *American Therapist* calls attention to the consumption of tea and coffee at the Pennsylvania Insane Hospital at Philadelphia. He finds from the statistics of the past year that the women drank one ton and a half of tea, and nearly four and a half tons of coffee. The men drank a half ton of tea and three tons of coffee in one year.

He comments as follows :

“The writer has already reported 125 cases of tea-inebriation. In the study of these cases it was found that 72 per cent. were what is generally known as nervous persons ; 20 per cent. had frequent spells of faintness ; 50 per cent. were troubled with gastric or intestinal indigestion with all of the attending ailments ; 3 per cent. had seriously contemplated suicide ; 45 per cent. were sufferers from persistent headache or capital neuralgia ; 10 per cent. had spells of great depression ; 20 per cent. were despondent ; 50 per cent. were excited ; 19 per cent. were troubled with conscious palpitation of the heart ; 20 per cent. had insomnia, and when it was not complete, what little sleep they were able to get was greatly troubled by the most harrowing nightmares and dreams, so that they by far preferred to remain awake. In 12 per cent. there was noticed increasing muscular tremors. There were found among quite a number well-marked hallucinations, especially those of impending death and robbery. Such a picture as this presented to the thoughtful physician is most deplorable in every respect. These poor individuals often confess to a degree of tea-drinking which without question makes the habit an actual dyspsomania.

“The writer is at present studying the place of tea as a causative agent in insanity in this country. Before me lie reports from all the institutions for the insane in Ireland, and in these tea-tipling is given a most prominent place. Those in charge of these institutions do not hesitate to say that it is a direct cause. This fact, in connection with the table showing that out of the 10,562 patients 1,246 were of Irish birth, lends weight to my assertion.

“The writer has traced many cases of insanity to the immoderate use of tea. Every intelligent physician knows that coffee interposes serious obstacles in the treatment of occult diseases associated with or dependent upon hepatic torpor. Yet, here we have men (inmates) consuming coffee at the rate of 30 lbs. a year per capita, and women (inmates) consuming 37 lbs. of coffee and 13 lbs. of tea each, or in round numbers 50 lbs. of tea and coffee annually. Even when used moderately, this would be ten times as much as sane people ought to have.

“No wonder that the record of recoveries is so low as 31 and 32 among the male and female inmates, respectively.”

FUNDAMENTAL PROBLEMS. By DR. PAUL CARUS,
Editor Open Court, etc., etc. Open Court Publishing
Co., Chicago, Ill., 1894:

This is the second edition of a series of essays which have appeared in the Open Court Publishing Co. “On Forms of Thought”; Problems of Law and Nature; Questions of Cause and Effect; Agnosticism, Mysticism, Reason, Ethics, Matter, etc., etc. These and many other allied topics are presented clearly, and from the broad standpoint of modern science. The following sentence in the preface suggests the range of the book: “The philosophy of the age depends on the health of our religious, our scientific, our industrial, our mercantile, our political, and our social development.” Such works are very stimulating and helpful, and every thinking man should be familiar with them.

MALTINE WITH COCA WINE.

During the withdrawal of opium a great variety of neurotic symptoms appear which are not only very distressing, but difficult to treat. The milder narcotics are aggravating in the transient relief which they bring, and spirits are often unpleasant to the taste, and, only when large doses are used, bring relief. The question often occurs, Is alcohol, in any form, a practical narcotic for these psychological disturbances? This is variously answered, but usually in the negative. Yet, practically, some of the forms of tinctures in which alcohol is the most prominent factor are found to be excellent in certain cases. The tinct. of oats and red bark, and other tonics, have been highly praised, and, in a few cases, seem almost specifics; but much depends on the method and way of administration. The maltine preparations are all excellent tonics, in both alcoholic and opium cases, and can be used with great satisfaction whenever great debility and anæmia are present. The new combination of coca wine with maltine seems to meet many conditions present in the stage of withdrawal of both opium and alcohol that have not been observed before. In two cases of opium ediction, this drug, given in two-ounce doses every three hours, markedly relieved the distress following the rapid reduction of opium. Both cases recovered with less suffering from the use of this drug, and a week after the withdrawal of the opium, changed from maltine and coca wine to maltine and hypophosphites. These results were very satisfactory, and has encouraged us to make a more thorough trial in the future. In four cases of inebriety, the abrupt withdrawal of spirits and the substitution of maltine and coca wine, had equally satisfactory results. The usual nervousness and precordial distress was absent in nearly all these cases, and only noted at the beginning of the treatment. It appeared that this form of spirits, associated with coca and maltine, has some special tonic action that is eminently suited for such cases. We take pleasure in saying that this form of maltine appears to be of unusual

value, and deserves a careful trial and clinical study, particularly in the opium and alcoholic cases.

This prescription is very valuable in many cases, and should be tried :

CHRONIC ALCOHOLISM.

R.—Tinct. Capsici,	. . . . .	1 ounce.
Tinct. Zingiberis,	. . . . .	1 ounce.
Tinct. Valerinæ Ammon,	. . . . .	2 ounces.
Celerina,	. . . . .	2 ounces.

M. Sig.: Teaspoonful in teacupful of hot tea three or four times daily.— *St. Louis Clinique.*

The *Antikamnia Pocket Case* is exceedingly practical and a useful aid to physicians. This firm has distributed them very freely to physicians who appreciate this in many ways.

The *Antikamnia Chemical Co.* are hereafter to put this drug in a tablet form, of definite proportions. This places an excellent drug in the most available form for ready use. No remedy has become more popular as a safe and reliable sedative than *Antikamnia*.

F. A. Davis Co., the well-known medical book publishers of Philadelphia will issue a companion book to Dr. R. von Krafft-Ebing's famous treatise, "*Psychopathia Sexualis*," entitled "*Suggestive Therapeutics in Psychopatia Sexualis*," it being a translation of the original by Dr. A. Schrenck-Notzing, of Munich, collaborator with Krafft-Ebing. This book will contain about 325 pages and be sold by subscription only, at \$2.50 per volume, in cloth. It will be of the greatest importance as an authoritative work on suggestion as a therapeutic agent in the hands of the intelligent practitioner.

Dr. R. Cantalupi, writing from Naples, Italy, under date of July 24, 1893, says: "Bromidia has produced successful results in all the most varied forms of insomnia. Among others who have been benefited by its use is Professor Ces-

are Olivieri, well known as a most distinguished surgeon in this city, and who, after undergoing tracheotomy for neoplasm in the larynx, suffered terribly from insomnia, which the usual hypnotics all failed to relieve. Hearing of this, from a mutual friend, I advised the use of Bromidia, which promptly produced the desired result.

Kola Cordial has come into prominence as a powerful stimulant of the nervous system, and particularly of cardiac feebleness, neuralgias, and other disturbances arising from degenerations caused by alcohol and opium. *Park Davis & Co.* have placed a very reliable preparation of this new drug on the market. Send to this firm for the literature of this new drug.

The *E. C. Morris & Co.* Fire-Proof Burglar Safes made at Boston, Mass., are the best and most reliable on the market. Send for a circular.

Sulfonal and *Trional* have become the most valuable hypnotics in use. In cases of alcohol and opium inebriety they are invaluable, and in many cases are practically specifics, without any rivals. The well-known firm of Schiefelin & Co., of New York, are American agents.

Syrup Hypophosphites by *Fellows* has achieved a very wide-spread reputation for its peculiar tonic and nutritive properties. Its effect on the appetite and digestion is very marked and satisfactory. In all mental and nervous diseases it has become a standard remedy.

Wheeler's Tissue Phosphates contains calcium phosphate, sodium phosphate, ferrous's phosphate, trihydrogen phosphate, and the active principles of calisaya and wild cherry. It will be seen from this, that its value as a remedy is very great.

The *Arethusa Spring Water of Seymour, Conn.*, has recently come into prominence, as an exceedingly fine table water. It is alkaline, and has a marked tonic action, and may be truly said to be the great American *Apolinaris Water* which will outrank or equal all other waters in purity and

freedom from germs. The following is the analysis of this water by Professor Chittenden of Yale College :

	Grains per U. S. Gallons.
Silica,	0.607
Calcium Carbonate,	0.431
Sodium Chloride,	0.247
Magnesium Carbonate,	0.128
Potassium Sulphate,	0.095
Sodium Sulphate,	0.203
Sodium Carbonate,	0.015
Ferric Oxide and Alumina,	0.009
Total,	1.735

The water is clear, colorless and alkaline, and as the analysis shows is an exceedingly pure and soft water.

Respectfully yours,
(Signed),

R. H. CHITTENDEN.

Horsford Acid Phosphate has in our practice proved, on several occasions, to possess both tonic and antiseptic powers that was unexpected. In a case of severe erysipelas inflammation from the use of a hypodermic needle, the acid phosphate was used by mistake in large doses every three hours. Two days later when the mistake was discovered the case had improved so rapidly that the acid was continued, and full recovery followed. Later, a case of extreme debility with abscesses was treated exclusively with the acid phosphate, and recovered. In these cases it appeared when the system became saturated with the phosphates healthy granulations followed and tissue degenerations was checked. This experience has been repeated in various ways, with the same results, and it seems reasonable to state this conclusion, as sustained by many facts. In cases of tissue degeneration following drug poisoning and exhaustion, and when a strong tendency exists to formation of abscesses and elimination of poisons and dead cells in this way, the acid phosphate may be given very freely, as both an antiseptic and neutral tonic. In certain of these cases its action is that of very nearly a specific, and in all cases it has more or less benefit. In all forms of general exhaustion associated with anæmia and low vitality, the acid phosphate should be used either alone or associated with some bitter tonic. A favorite form is to combine it with fluid extract of cinchonia, and to give it in small doses frequently repeated.

THE
QUARTERLY JOURNAL OF INEBRIETY.

Subscription, \$2.00 per year.

Vol. XVII.

APRIL, 1895.

No. 2.

This Journal will not be responsible for the opinions of contributors, unless indorsed by the Association.

THE RELATION OF THE MEDICAL PROFESSION TO TEMPERANCE LEGISLATION.*

BY PROF. AUSTIN ABBOTT, LL.D., DEAN OF COLUMBIA
LAW SCHOOL, N. Y. CITY.

One of the most interesting subjects affecting the medical and legal professions just now presented by that field in which the duties of the one concur or co-operate with the duties of the other. Consider the field of these professions respectively as separate circles lying side by side. There was a time when they were wholly independent, not touching each other. The constant enlargement of the field of each profession during the last two hundred years has resulted in the overlapping of these circles so that now there is a territory which is in a sense the common domain of both. This domain is the field of medical jurisprudence in the widest sense of that term. The subjects within this field cannot be intelligently understood or efficiently dealt with by medicine alone or by law alone, they require the concurrence of these functions. This concurrence is not always harmonious; it is sometimes necessary for the law to

* Read before the New York Medical Jurisprudence Society, March 11, 1895

be instructed by the medical profession, and changes in the law which the medical profession dictate must sooner or later be conceded by the legal profession, and, on the other hand, the law frequently needs to regulate matters whose general direction is in charge of the medical profession, and to modify to some extent in view of public interest and safety what medical science might, or for abstract reasons, direct differently.

When we look at what the members of these professions are actually doing in society upon this common domain, we see two principal modes of co-operation or concurrent labor or mutual modification. In the course of justice the law, in investigating questions which involve scientific knowledge, calls on the medical profession for information and instruction, medical knowledge and medical reasoning; and the knowledge and reasoning which is the peculiar gift of the medical profession upon scientific subjects generally here is brought into the service of the law; and while, on the one hand, the law directs what inquiries may be made and in what manner and how far they shall be prosecuted, and what legal consequences shall be affixed to the conclusion which science presents, it is scientific aid and assistance which the law within these limits seeks for, and the instruction and knowledge which the medical profession give are of increasing service in the administration of justice. This is the department of forensic medicine or medical jurisprudence in the stricter sense of that term.

But we see another class or mode of co-operation between the professions in which medical men, discerning what is necessary for the welfare of the community and observing the habitual indifference of the community upon the subject, call upon the law to provide by legislation the rule of conduct and enforce it by the administration of justice. It is in this method that sanitary legislation has been so admirably developed within the present generation. This department is what we usually designate by the term state medicine. These two fields, state medicine and forensic medicine make

up the area in which the domains of the two professions overlap each other. In the first, forensic medicine—lawyers take the initiative, the law calling the physician to the aid of its administration; in the second, physicians take the initiative and the principles of sanitation in the hands of the medical profession call the lawyers to their aid for enforcement.

When we compare the relative progress of these two great movements we are struck by an interesting contrast. The law is conservative and it pursues substantially the same method now which it has from the beginning of medical jurisprudence in its use of expert testimony. Whatever advance has been made in this field has been in a great multiplication of the classes of cases in which medical testimony is called for and great increase in the number and ability of experts, and, I believe, on the whole, an increase in the respect accorded to experts who appear upon the stand to be both intelligent and impartial.

On the other hand, the department of state medicine is progressive. It is not merely doing an increasing business within the same old conservative lines. It is moving forward, extending to new subjects, discerning new needs, formulating new methods of provision or remedy, and thus giving a wholesome ascendancy over many subjects with which formerly it had no direct relation.

This notable increase of the branches of sanitary legislation will be obvious to every one upon the mere mention of quarantine and compulsory vaccination, of sewerage and drainage laws, ventilation and those parts of the building laws which have been dictated by medical opinion, and the lunacy laws, the sanction for the segregation of persons of unsound mind, and the superintendence of asylums and homes, health boards with all their various subjects of inspection and regulation, the sanitary inspection of schools, the great department of vital statistics, the growing functions of the inspectors of food products, and the prevention of adulteration, and the condemnation of that which is unfit, and

even the legal investigation of the diseases of cattle. Others present could readily name additional topics necessary to a complete view of the extent to which the medical profession are now taking the lead in originating and to some extent formulating the legislation of the state in matters affecting the general health.

It is difficult to estimate how much society owes to the influence of the medical profession caused by these and similar measures of compulsory sanitation.

In all such matters, it is important to observe that it is the judgment of the medical profession which points the way and leads. The law waits for a reasonable consensus of medical opinion. Whenever that is reached and it is made clear to the community, the law follows with legislation attempting as far as may justly be done, to give effect in the life of the community to the principles of safety and welfare upon which medical men have agreed.

This being the case, I desire to invite your attention to the relation of the medical profession to the subject of legislation respecting inebriety. I believe the time has now arrived when the community are ready to consider with candor and acquiescence what ought to be done considering inebriety as a disease. It is true that a number of the community do not believe that it is a disease, and some will persistently oppose any such view to the last; nor do I know that medical men would agree that it is always a disease. The proposition which I wish to put forward is, that the community are ready to acknowledge that to some extent, at least, inebriety may be usefully considered as a disease.

It is for the medical profession to instruct the community if anything can and ought to be done by the community through its legislature, towards diminishing its prevalence. I do not affirm that the community are ready to admit that inebriety is always a disease, but I believe that it may with confidence be affirmed that the community are ready to follow medical men in some important steps in which they may be advised that it ought to be considered as a disease and

treated as a disease. We should all agree that other elements besides pathology enter into the problem. If it be a disease, is it engendered by self-indulgence and by ignorance? Is it promoted by the profits of the traffic? Is it extended by the allurements of social attractions? Is it closely connected with other self-indulgences that are profitable to those who cater to them? It is not strange that it has thus far been treated by the law in the calendar of voluntary criminal offenses and not as a disease.

I do not suppose that the proposition to consider it as a disease would very soon, and perhaps not ultimately, terminate our treatment of it in some part as an offense, but is it not time to introduce the other element as an actual basis of the law in dealing with the subject?

The steps which appear to me to be worthy of discussion in this direction are :

First, the entire administration of the law touching inebriety as an element in those disorders which require police administration should be committed to direct medical care. Men arrested for intoxication should no longer be sent at once to prison, but in the first instance they should be committed to medical custody, and afterward go to prison, if at all, by medical consent. If such a simple change as this were made, how quickly would the medical knowledge of inebriety and the scientific methods of dealing with it become disseminated in the community and rendered practical and efficacious.

Second, the traffic in intoxicants should be subject to medical supervision to the end that adulterations and falsifications of all kinds should be stopped, and what may be more important, the foisting of intoxicants and narcotics upon people in search of health, by selling them in the guise of patent or proprietary medicines, without medical direction and without disclosure of the true nature of the preparation, should be stopped.

Third, the education of the community in a way to promote the intelligent self government of individuals in respect

to the use of intoxicants, should be accomplished by instruction under medical supervision systematically provided for by the State in all that it has to do with education.

Some important steps have been taken in this direction as well as in regard to the prevention of adulterations ; but I believe the community has scarcely begun to avail itself of the medical guidance which it needs in those respects.

Fourth, it appears to me that the open discussion as to which method for regulation of the traffic is the best, license or taxation, should receive careful consideration from medical men, and that legislation on the question should be aided by whatever light they can give.

If I do not mistake the signs of the times, the subject of inebriety is now opening, or ready to open, as a great field for the services of medical science. Hitherto it has been treated chiefly as a private and individual question. The victim has been regarded rather as indulging in a personal vice than as suffering from an aberration and bringing physical suffering upon others. It is now seen to be a social question ; and the community, as I have said, are beginning to admit that there may be some truth in the medical view which classifies it with disease. Moral suasion has been tried and though it may have prevented much and cured some individual cases, it fails to accomplish the service which the community needs. Legal suasion or compulsion has been tried with similar inefficiency. Is it not time now that scientific suasion should be tried? It is for medical men to say what ought to be done in reference to inebriety.

It is also for them to say how much of what ought to be done is practicable to do in the present situation.

I do not think that in considering such measures we should hesitate to count on the material self interests of individuals and of the community. I believe there are large and wholesome interests in the community which would tend to support a concerted movement such as I have suggested. In the first place it is for the interest of all tax-payers to put some reasonable regulation upon the increase of inebriety.

It is not necessary to enter into figures here, but we all know that a considerable portion of the burdens of taxation caused by crime, pauperism, and insanity are attributed by medical men to inebriety as the original cause.

We know, however, that the records of institutions, founded entirely on such admissions or acknowledgments as inmates may make in regard to the habits of themselves and their ancestors are not a satisfactory basis for definite conclusions in this respect.

One question which I should like to hear medical men discuss is, whether it would be practicable for competent medical examiners by personal inspection of each case to determine (with a reasonable degree of certainty in respect to any considerable proportion of cases) that inebriety was in fact a cause of the resulting condition. The statements of those who have considered this matter most fully, appear to confirm the impression that it would be practicable to show to tax-payers that a definite and considerable proportion of their burdens come from this source.

Again, in considering the subject in a practical way we should not overlook the interest of producers, and dealers in intoxicants, to stop adulterations and falsifications. We must of course assume that the traffic will go on, but it is a legitimate question how far adulterations and falsifications, which probably are now practiced on a very large scale, are a cause of degeneracy and mortality which the medical profession should greatly diminish if they were provided with suitable legislation. I am aware that there is a difference of opinion as to whether the common adulterations are detrimental to health, but I suppose there is a general agreement as to the injurious effects of intoxicants sold as patent medicines.

Again, I believe it could be shown that it is for the interest of organized labor, which is becoming so large a feature in the social question, to promote moderation in the use of intoxicants. If I am not misinformed, one difficulty with which the leaders in labor movements have to deal

arises from the tendency to excess so common among wage earners as well as among others.

It would certainly be also in the interest of the medical profession if the charge of the administrative law in reference to inebriety upon the basis of the public treatment of it as a disease should be devolved upon medical men. The advantages of scientific investigation thus rendered practical may readily be appreciated.

The importance of this subject appears to me greater than the mere question of inebriety. The law is now necessarily treating crime as well as inebriety almost wholly on the basis of punitive measures applied only after the evil has been done. Medical science alone can instruct the community how to deal with either by measures directed toward diminishing the sources. It would be futile in the present state of public opinion to propose measures for prophylactic treatment of crime, but is it premature to propose such measures in a practical form in respect to dealing with inebriety and would not the demonstration of the wisdom and propriety of such measures in that regard lead the way as fast and as far as may appear desirable to similar measures.

There appears to be good foundation for the opinion that sooner or later both crime and inebriety will be considered and tried in the light of medical science as well as of punitive justice. Now it is only a few cases comparatively in which the law calls in the medical profession, sooner or later the presumption and burden of proof must be shifted whenever it shall be made the duty of the medical profession to take charge of all accused and determine what, if anything, may be done for them or properly attempted considering the criminal as diseased, and turning over to the punitive authorities of the law those cases for which scientific treatment has no advice to give. Then and not until then will our penology be put upon its true and ultimate basis.

Let me add a few words as to the position which the legislative question as to liquor legislation now seems to occupy

in the community under our statute. In a country consisting, as ours does, of a number of States which regulate their own internal affairs in their own way, the legislature of each State becomes a sort of experiment station legislation. Ohio tries one plan, Maine tries another, New York a third, and South Carolina a fourth, and others consider plans, and adopt those which are modifications and adaptations of those mentioned.

The four leading plans which in one or another form seem to be the only ones necessary to consider, are :

First, licensing as in this State ;

Second, making the business free to all comers but imposing a tax in addition to ordinary taxation ;

Third, prohibition, with or without local option as to its adoption ;

Fourth, government monopoly of the traffic.

The question now uppermost in the minds of the most intelligent and most influential men in shaping the policy of this State, I believe, suggests a consideration of these plans in the following order :

First, local option, in each town or ward and possibly in each election district, as to whether the business shall be allowed there, and if allowed, whether Sunday sales shall be permitted ;

Second, if and where the business is allowed, is a license to be granted to selected applicants on payment of a fee, or should a tax be levied upon all who enter the business? Which is the preferable method of making the business contribute to relieve the burdens of taxation ?

Third, is government monopoly an experiment worth trying in our present condition ?

I believe it is within the power of the medical profession, by considering these and kindred questions in the light which comes from regarding inebriety as a disease, and by giving the community the benefit of their views in that aspect, to introduce a new and most wholesome element into the discussion, take the subject out of the control of polit-

ical interests and the depressing influence resulting from the present association of inebriety with crime, and lead the way to the dissemination of a better knowledge of the real uses of intoxicants in the community and to the formulation of such legislation as may be necessary, and practically enforceable, to protect the community against those excesses which now afflict so many lives and homes and which form so serious an obstacle to the prosperity and welfare of our people. Individual medical men may be wedded to peculiar opinions, but a consensus of medical judgment as to what by general agreement is reasonably necessary and practicable would, I believe, and ought, I am sure, to control and direct the course of legislation in a way in which, without trenching on individual liberty, the best interests of individuals and of society at large would be promoted.

Do not let me be understood as advocating an extension of interference by the law in reference to the drinking habits of society. On the contrary, I believe that medical opinion would guard efficiently against that. My proposition is simply this, that so far as the law does undertake or propose to interfere with questions of inebriety, the manner and the extent should be subject to medical opinion.

The first step, perhaps, in applying the principles I have suggested would be to establish within convenient access of every police precinct a correctional hospital, and to provide that whenever under existing law a person is taken into custody as intoxicated or disorderly, that is to say, without any specific charge of crime other than disturbing the peace or intoxication, he should be sent in the first instance to the correctional hospital, and there it should be determined by medical authority whether he should be turned over to the ordinary punitive justice.

ALL inebriates suffer from poisoning, auto-intoxications, starvation, and exhaustion. A large proportion of inebriates have mal-formed defective nerve centers, and suffer from exhaustion and debility before spirits are taken.

POPULAR FALLACIES AS TO ALCOHOL AND
NICOTINE.*

BY ALBERT R. LEDOUX, M.S., PH.D.

Mr. President and Gentlemen: There is probably no subject connected with human habits and appetite that has been so much discussed as the use or abuse of tobacco and alcohol. The controversies which have raged over these two substances have been continuous, although on ever-shifting grounds. I desire to state at the outset of this brief paper that the members of the Society of Medical Jurisprudence need have no apprehension that they are about to be compelled to listen to an appeal for prohibition, on the one hand, or that I shall seek to enlist the society in the movement for freer saloons or unrestricted license.

It is my purpose to consider the problems surrounding the alcohol and tobacco questions from the standpoint of an analytical chemist, rather than that of either a temperance reformer or advocate of license; a devotee of the "weed" or an anti-tobacco man.

I may dismiss the moral and ethical consideration with a few words, leaving this to be discussed by others, and this paper may perhaps in some measure clear the way for that distinguished jurist, Dr. Austin Abbott, who will at our next meeting consider the relations of alcohol to crime.

The few words with which I will dismiss the moral and ethical side of the question will be: "There is something to be said on both sides." Probably no one has better stated the relative merits and demerits of tobacco than Burton, who, in his "Anatomy of Melancholy," says: "Tobacco, divine, rare, super-excellent tobacco, which goes far beyond all the panaceas, potable gold, and philosopher's stones; a sovereign remedy in all diseases. A good vomit, I confess,

* An address delivered at the February meeting of the Society of Medical Jurisprudence, 1895.

a virtuous herb if it be well qualified, opportunely taken and medicinally used ; but, as it is *commonly abused* by most men, which take it as tinkers do ale, 'tis a plague, a mischief, a violent purge of goods, lands, health — hellish, devilish, and damned, the ruin and overthrow of body and soul." This is certainly "saying something on both sides" with a vengeance!

As far as the physiological effects of alcohol* are concerned, that its use as a vehicle for beneficent drugs is of incalculable value will hardly be denied, nor its value as a stimulant at times, nor will the sad effects of over-indulgence — temporary or habitual — be controverted ; there is something on both sides here also.

The danger which I apprehend, and the fallacy noted on all sides to-day, is that the public, always ready to follow selfish and ill-considered advice, anxious to be led by quacks, and advised in harmony with their appetites and weaknesses, are now being persuaded that there are no deleterious effects from the use of wines, whiskies, beer, etc., provided these articles are "*pure*"; and that they may smoke *tobacco* with impunity, provided they do not smoke *cigarettes*.

Some vendors of whiskies and other alcoholic beverages have been most active in this country and in other countries in seeking legislation to punish adulteration, and, while joining the prohibitionists in pointing out the alleged horrors in adulterated goods, boast of the extreme purity and harmlessness of the article in which they especially deal. How common it is to see the advertisement in the street cars: "Don't drink ; but if you do, then drink only pure whisky. Blank's whisky is absolutely pure." Temperance reformers and others interested in the welfare of their fellow-men have unconsciously assisted in the spreading of this idea, until from many platforms we hear more of the horrible adulterations of drink than we do about the physiological effects of the legitimate ingredients in all of them. Staid boards of health, public analysts, and others have also dwelt very largely upon this side of the question, until there is abundant evidence that the public is misled, and a strong proba-

* Common or ethyl alcohol is everywhere intended in this paper.

bility that many a man upon whom the alcoholic habit is fastening itself is encouraging himself with the belief that he will suffer no injurious effects if he only imbibes the product of some particular manufacturer.

Perhaps this is a convenient place to state my premise, and proceed to discuss it more in detail. As to alcohol: if the use of intoxicating drinks is, on the whole, an evil to be combatted, the medical profession, as well as all temperance reformers, should never cease to make it plain that the evil lies in the alcohol in the liquors, and not in the adulterations; that the unfortunate votary should not be allowed to deceive himself with the idea that if he drinks some particular brand, or abstains from another, he can derive benefit, or at least escape injury. If he is injured at all he is injured by the alcohol; if he is benefited at all he is benefited by the alcohol.

It is really remarkable, when one thinks of it, how very slight is the difference between all classes of alcoholic liquors as a matter of fact, however different they may be in taste, color, etc. We know that they consist essentially of water and alcohol, with only from 2 to 7 per cent. of all other ingredients, unless artificially sweetened. In wines, for instance, the difference in flavor is almost entirely due to the volatile acids and ethers, and in no wines are these present in greater amounts than $\frac{6}{10}$ of 1 per cent. The alcohol by weight in standard wines will vary from 7 to 18 per cent. the water 80 to 90 per cent., and the solid residue, which includes all the coloring matter and sugar, varies from 1 to 4 per cent., for all excepting artificially sweetened wines, like champagne.

The natural coloring ingredient of these substances in no case exceeds 1 per cent. of the material, the salts in solution in no case exceed $\frac{2}{10}$ of 1 per cent. when all the phosphoric acid, alkaline sulphates, chlorides, and carbonates are added in. In fact, the total mineral matter (ash) after burning off all the organic matter, varies, in Battershall's Table of Standard Wines, from 0.17 per cent. to 0.48 per

cent. We may therefore leave, as proven, the statement that there is nothing in natural wines that is injurious, unless it be the alcohol.

When we consider the question of whiskies, brandies, rum, and other distilled liquors we meet with another set of conditions, but to which the same facts may be applied. According to Blyth, the constituents of brandy show: alcohol from 48 to 60 per cent.; water from 37 per cent. to 48 per cent., total solid matter from 1 to $1\frac{1}{2}$ per cent., mineral matter or ash, from 0.04 to 0.20 per cent.; acids, from 0.01 to 0.05 per cent.; sugar, from 0.0 to 0.40 per cent. Twenty-five samples selected by the Metropolitan Board of Health for analysis showed alcohol by weight from 25.39 to 42.96 per cent.; solid matter from 0.02 to 1.79 per cent.; these samples being abnormal chiefly from the fact of their palpable dilution with water, reducing the alcohol from an average according to our above table, of 54 per cent., to an average of 34 per cent. The Board of Health of the State of New York in 1881 analyzed a great many samples of American whisky, finding the alcohol by weight to vary from 23 to 52 per cent., and the solid residue from 0.1 to 0.7 per cent.

Rum and gin are also, as is well known, simply mixtures of water and alcohol obtained by fermentation, distillation, different from one another and from whisky and brandy only in the average proportions of these two chief ingredients, and in the natural or artificial flavors imparted to them. Of course, as in the case of wines, popular demand, as well as the ingenuity of dealers, causes artificial flavoring of these substances with any and every ingredient likely to produce the desired result, and we find in the list of substances recommended, many which, considered by themselves, harrow the imagination; such as oil of turpentine, recommended to give a distinctive flavor to gin, in place of juniper berries, cayenne pepper, etc., etc., but the above outlined analyses show in what infinitesimal proportions these substances are added, and consequently, even when present, how slight must be their effect on the system *as compared with the alcohol.*

Numerous recipes are given for imitating genuine distilled spirits, but the worst of them show but exceedingly trifling amounts of injurious adulterations ; for instance, a well-known receipt for imitating brandy calls for 40 gallons of proof spirits, 1,000 parts of alcohol (95%), 600 parts of water, one part of essence of brandy, $1\frac{1}{2}$ parts of burnt sugar, $\frac{1}{4}$ oz. of tannin, and $\frac{1}{6}$ of an oz. of oil of cognac. The latter ingredient is chiefly amylic alcohol, but in this proportion of liquid its physiological effect is inappreciable compared to the alcohol.

Another formula for making 50 gallons of rye whisky, artificially, calls for 50 gallons of alcohol, 10 drops of oil of wintergreen, 4 ozs. of acetic ether, 4 drops of oil of cloves.

Receipts for making Scotch and Irish whiskies call for the following :

Scotch Whisky.

46 gallons 95% alcohol,
8 gallons of real Scotch whisky,
18 gallons of water,
3 pounds of honey,
5 drops of creosote,
2 oz. of acetic acid,
1 gallon of ale,
1 ounce of pelargonic ether.

Irish Whisky.

30 gallons of alcohol (proof),
5 gallons real Irish whisky,
 $\frac{1}{2}$ gallon old ale,
4 drops creosote dissolved in acetic acid,
1 ounce pelargonic ether.

The difference seems to be that there is *no water* added to the *Irish* article. The "pelargonic ether" is a flavor made up of a mixture of Jamaica rum, vanilla essence, raisin juice, and one or two other harmless ingredients, with caprylic, caproic, and other organic acids. This is probably the worst that can be said of the distilled liquors, excepting as to the fusel oil, which is another name for amyl alcohol, and even in fresh potato spirits it is never present in greater quantity than one part in 500.

It is, perhaps, a natural desire on the part of Boards of Health, temperance advocates, and other reformers to make out as strong a case as possible against intoxicants, but they overdo it when they dwell on the adulterations they are supposed to contain. Granting that wines have been found to contain tumeric, glucose, borax, gum-kino, and even arsenic, to say nothing of aniline red and other colors, and that these substances are poisonous to greater or less degree, it is, nevertheless, true that they are so *rarely* present in *any* wine or liquor, and then in such very small quantity, that injury from their presence must be exceedingly rare; arsenic, for instance, having been discovered once, in Spanish wines, and aniline dyes very seldom, if ever, in this country. There is such a thing as pushing entirely too far arguments based on the mere presence of poisons.

Whisky and other fermented liquors are, according to all authorities, seldom, if ever, adulterated in the United States. Blyth says: "In the United States, whisky is probably less subjected to serious sophistication than any other spirituous drink, and there is very little ground for the belief that it is subjected to noxious admixture to any great extent."

Some time ago the editor of a well-known weekly paper published in this city, himself an earnest advocate of temperance reform, desired to ascertain and publish what were the facts concerning alleged adulterations of, and injurious qualities in, the wines and liquors sold to the poorer classes in New York. My firm were retained to collect the samples and make analyses. The samples were purchased at various saloons and groceries on the east and west sides from Harlem to the Battery, and, I may say in passing, that some of the things observed by my agents in securing these samples were themselves eloquent sermons on behalf of the *control* of the liquor traffic. In one saloon on West street, for instance, my man had to wait for his flask of brandy until a previous customer was served. This customer was a little girl, her head barely reaching to the level of the bar. She laid down

her ten cents and handed up an empty whisky flask, which she had been sent from home to have filled. The bar-tender filled it, and set it down without corking it, winking to my representative, indicating that he should watch the child. The little thing tipped the flask up, took a drink, and replaced it on the bar. The bar-tender refilled it without a word, put in the cork, and the child went away with it. Upon my man expressing his horror at the sight, the bar-tender said: "What can I do? That is her commission. They all demand it, and if I do not give it to her she will go somewhere else."

But we are at present interested in the *results* of these analyses, not with the method of securing samples; and these results, not to weary you with details, I will sum up in the words of my report to the editor.

"The whiskies were in no respect adulterated, the coloring matters and flavoring being caramel and raisins respectively, both harmless.

"Twenty-five samples of brandy, varying in price from fifty cents to \$1.75 per quart, contained no fusel oil, no coloring matter except caramel, and no extract of pepper. All but one contained zinc and lead and had copper in minute proportions. These were undoubtedly due to metallic stills or pipes, and were no more prevalent than in soda-water led through lead pipes with syrups dispensed from metal cans in some soda-water fountains of this city and Brooklyn, to my personal knowledge.

"The alcohol in the brandies varied from 25 per cent. to 50 per cent. Two of them contained more alcohol than is natural—it had been added—while the balance of them had been diluted.

"The sherry wines contained no metallic poisons and no poisonous coloring matter. The alcohol varied from 9 to 23 per cent., most of them having been diluted with water. But one sample of the sherries had been fortified with alcohol, the balance being diluted.

"The port wines contained no metallic poisons and no

logwood or other poisonous coloring matter. Burnt sugar in most and cochineal in one were the only artificial colors.

“As a general thing, the cheapest liquors were the least injurious, as they contained, from their dilution, the least alcohol.”

I next take up the subject of beer, which, perhaps, owing to the extent of its use, is the most important. Chemists of Germany have found in beer all sorts of substances, harmful or otherwise, but the chief of these may be considered harmless, *viz.* : burnt sugar, liquorice, molasses, quassia, coriander seed, glycerine, and glucose. The harmful ingredients are only relatively so, salycilic acid being the chief of these.

The reports of the United States government experts and those of the various State Boards of Health are all against the prevalence of poisonous adulteration of beer, admitting that it is the exception, and not the rule, to find deleterious substances present.

I trust that the Society does not conclude that I am asserting that there are never harmful substances in our alcoholic liquors. I simply take the ground that as compared with the alcohol their injurious effect is absolutely insignificant ; and this is true of the salycilic acid infrequently found in beer. At great length, professional chemists and sanitary experts have experimented with this drug, and there is plenty of evidence that in continued or large doses it is injurious, yet the dose for an adult is from ten to forty grains, and in no beer or ale is it necessary, to produce the effect desired, to have it present in anything like that proportion. To-day there are few, if any, of the ales and beers on our market to which it is added, as is demonstrated by the analyses and tests constantly published.

As has been intimated, the difference in flavor between two kinds of wine, between sauterne and claret, port and sherry, for instance, is so delicate that it requires but an infinitesimal amount of the natural or artificial ether or organic acid to affect it. This can be readily seen when we consider the difference in taste between two varieties of grapes.

Instinctively the tongue recognizes the difference between a Catawba and a Niagara grape, for instance, but no chemical analysis, however subtle, could isolate, or, if isolated, determine the relative proportion or identity of the delicate ethers which cause this difference in aroma or taste.

I will conclude this part of my paper by stating some comparative figures showing the difference between wines, beers, and distilled liquors in composition, emphasizing once more how slight this is.

	Rhine wine.	Claret.	Whisky.	Brandy.	Beer.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Alcohol by weight,	9.00	12.00	38.00	50.00	3.00
Water,	88.00	85.00	60.00	48.00	91.00
All other ingredients,	3.00	3.00	2.00	2.00	6.00
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	100.00	100.00	100.00	100.00	100.00

I have not touched upon the question of the benefit or injury of the alcohol. Abundant experiments will bear me out in the statement that the benefit in typhoid fever, pneumonia, etc., derived from liquors can be exactly duplicated by plain alcohol and water; and the intoxication from plain alcohol is just as pronounced as from the worst "Jersey lightning." The color, flavor, and "smoothness" of liquors depend on age—or sometimes manipulation; their effect depends on their alcohol.

We are now brought to the second division of this informal paper—that relating to tobacco—and my premise is: If the use of tobacco is ever an evil to be combated, the medical profession, as well as all reformers, should not cease to make it plain that the evil lies in the nicotine—that is, in the tobacco itself, not in its adulterations—and that this injury does not depend upon the form in which the tobacco is used. I employ the term nicotine in its broadest sense, including all the alkaloids associated in tobacco.

A few years ago I found myself in that interesting corner of the world where the States of North Carolina, Virginia, and Tennessee come together. My driver and guide was a youth of about nineteen. We stopped at a store, and he called out the proprietor. Upon his appearing, the youth

handed *me* ten cents, and requested the storekeeper to sell me a package of cigarettes. I handed the money over, and then asked my driver for an explanation of this financial transaction. He said: "Why, you know it is against the law of this State to sell cigarettes to minors—I am not of age. The storekeepers here are strict. In this county I have to buy smoking tobacco and make my own cigarettes, or smoke cigars. Over the State line I can buy cigarette papers, but not cigarette tobacco, and some of the dealers make me show my pipe." He added: "I don't smoke a pipe, but if I simply show it I can buy all the smoking tobacco I want and make my own cigarettes. It is handier, though, to get somebody who is of age to buy the cigarettes all ready made for me."

The legislation against the smoking of cigarettes has been to me one of the most interesting phenomena of these times, especially as I happen to know something of its inception. It is now some ten or twelve years since I was approached by a gentleman representing one of the largest combinations of tobacco interests. He desired to retain me for the purpose of making a series of investigations of cigarette papers and all that pertains to this article. The gentleman stated to me, without hesitation, that the cigar and chopped tobacco men began to find their trade seriously interfered with by the growing popularity of the American cigarette, and that they had determined to offset it in every possible way. They desired to show through the public press that, first, extremely dangerous products resulted from the burning of the cigarette-paper-creosote, etc., and, second, after they had worked this scare to its utmost market value, to show that opium and other deleterious drugs were used in the manufacture of cigarettes, and that the public using them ran great danger. I undertook the investigation as a matter of business, examined no end of cigarette-papers for lead, arsenic, and other deleterious substances, but with entirely negative results; in fact, the rice paper usually employed was the purest form of cellulose that had been

brought to my attention, and the products of its combustion all told were infinitesimal in amount and effect as compared with the combustion of the tobacco-leaf itself. There is more cellulose in one cigar than in 100 cigarette-papers.

I next addressed myself to an analysis of the cigarettes upon the market, and reported that these contained various substances with which to flavor them, and to prevent their drying up, among which were angelica root, tonka bean, rum, licorice, glycerine, glucose, and nitro-benzole, but no opium, and I reported that these substances were comparatively harmless when burned in full or in part, and only the harmless ingredients were present in any amount. I found, however, that other chemists were being employed for this purpose in different parts of the country, and very soon arose the chorus throughout the press first against cigarette-papers, then the cigarette itself, which has resulted in anti-cigarette legislation and anti-cigarette leagues throughout these United States.

I desire to state right here, and in the most positive manner, that there *is one* objection to cigarettes which is not at all fictitious, and that is the handy form in which they are presented; and the fact that dealers will sell them in broken packages render them extremely alluring to the tender youth, who undoubtedly smokes oftener, and more easily acquires the habit, than would be the case if he had to acquire it from the use of a cigar or a pipe; and again, their very adulteration with artificial flavors renders them mild, and tempts to inhalation of the smoke. But I trust that I shall be able to prove the fact that, after all, *if the youth is injured*, or, for that matter, the adult, by smoking cigarettes, he is injured by the nicotine in the tobacco, and not by the paper or flavoring, or other adventitious ingredients.

The adulteration of tobacco has received great attention for many years, though not to the extent as has the adulteration of wines and liquors. Long before there were such things as chemical analyses there were stringent laws against the adulteration of wines, and there are in Europe laws

against the adulteration of tobacco. It is related that in the reign of Henry VI, in the year 1432, a petition was presented to this monarch which stated that the Lombardes were corrupting their sweet wines, and, by command of the king, "the mayor of London, John Ranwell, seized casks in divers places of the citie; the butts were broken open in the streets to the number of fifty, so that the liquor running forth passed through the citie like a stream of raine water in the sight of all men, from whence there issued a most loathsome savour."

I will not deny that a "most loathsome savour" frequently emanates from some cigarettes, and I am not an advocate of the flavoring mania of the present day, nor am I prepared to commend the cigarette on the grounds of taste or morals, but really it is a popular fallacy to suppose that it is adulterated injuriously to any greater extent than tobacco in any other form.

The worst adulterated tobacco is that which is sold in the form of snuff, and the long list of substances going into the composition of this article in Europe makes one hunt carefully before he finds the word "tobacco." The leaves are dyed with various suitable browns, among which are mentioned as articles common for this purpose, printers' ink, Frankfort black, and logwood. The microscope has revealed in snuff ground wood, ground oats, turf, moss, weeds, chicory, umber, ochre, quicklime, and even powdered glass, to say nothing of cayenne pepper. But, after all, says the Encyclopedia Britannica, in summing up an article on snuff: "Its properties are dependent on the presence of *free nicotine* and the peculiar aromatic principle developed in fermentation."

One of Dickens' characters is an analytical chemist, which individual makes himself obnoxious at every feast by saying: "Oh, if you only knew what dreadful things you are eating you would abstain," or words to that effect. I do not propose to come before this society in this role and get myself disliked, nor to harrow your feelings with detailed

descriptions of the substances which are said to enter into some of the *cigars* of commerce. But before this audience I may speak freely of chewing tobacco without hurting anybody's feelings, which sometimes cannot contain a large per cent. of tobacco in its composition, after we have deducted molasses, sugar, aloes, licorice, gum catechu, lamp-black, alum, bi-chromate of potash, tannic acid, iron, logwood, rhubarb, cabbage, burdock, and other leaves, all of which have been found in chewing tobaccos. Still, many of *these* substances are entirely harmless, and, in fact, the English laws, which are very stringent against adulteration, specifically allow some of them, like licorice, to be added to chewing tobacco.

The purest tobacco is undoubtedly that which is prepared for pipe smoking, purer, in my opinion, than that found in the average cigar, yet the nearer it comes to the absolutely pure leaf the higher the per cent. of nicotine; but neither in the cigar, nor cigarette, nor chopped or cut tobacco, is there at this day, among all the adulterations, anything approaching in potency this nicotine which they contain.

Whether we are smokers or non-smokers, whether we are moderate or immoderate drinkers, or total abstainers, let us fearlessly and honestly and intelligently instruct the rising generation that alcohol and tobacco are substances to be avoided by youth, no matter in what form or under what name they may be sold; and let the intelligent physician, who meets in his practice the too slavish devotee of the tobacco habit or the votary of alcohol, inform his patient in all candor and fearlessness that it is the alcohol and the nicotine which he must let alone, and not endeavor to shift him from port to sherry or from cigar to pipe, under the vain delusion that if one harms the other will benefit.

A few years ago, before the days of the cigarette, warfare raged around the cigar, which began to supplant the pipe. That was the day when our grandfathers were all told to drink port *ad libitum*. In our youth, here in New York, we

were told *nullum vinum nisi hungaricum*, and to-day we are warned against wines by our medical friends, and told to drink only Scotch whisky. Let us be honest.

Mr. President, the card I received reminding me of this meeting to-night states: "A collation will be served after the meeting." I had not noticed this on the cards announcing other recent meetings, and I wanted to see if it had any connection with my subject, so I looked it up in the Century dictionary. I found many meanings for the word "collation," and give them in their order:

1. "A comparison of manuscripts."
2. "A collection of the lives of the fathers of the Church."
3. "The act of reading or conversing on the lives of the saints."
4. "A conference."
5. "A contribution from several participators."
6. "A sort of theological lecture, laying down propositions *without necessarily proving them.*" (This sounds like the General Assembly!)
7. "A reasoning: drawing conclusions."
8. "A repast; a meal originally partaken of by monks after reading the lives of the saints."

I read no farther, for the illustration of this meaning was a quotation from Whiston, the English theologian of 1700. He had been invited to a conference, and says: "I found such a collation of *wine* and *sweetmeats* as little corresponded to the terms of the invitation." (He was subsequently declared a heretic.)

A collation, then, may include wine, and perhaps cigars; so I will prudently close my paper before I say too much.

DR. FRANKLIN of Indianapolis reports a case of a child born asphyxiated in a difficult labor, who was given hyperdermatically one-fourth of a grain of morphia every two hours until one grain of morphia was taken. The child recovered, but died two weeks later. The morphia was given by mistake, supposing it to be nitro-glycerine.

OPIUM IN GYNECOLOGY.

BY JOSEPH PRICE, M.D., PHILADELPHIA, PA.

The medical profession has always been responsible for the opium habit of patients or the laity. The reckless and indiscriminate use of anodynes and narcotics, generally used for the treatment of symptoms—rarely does the routine practitioner make a precise diagnosis, before giving opium if pain is present. Opiates are commonly used without a clear recognition of an indication except that of pain. The opium habit is rarely acquired, except it be antedated by pain or an illness for which some doctor has given morphine or some preparation of opium. There is scarcely a remedy in the Pharmacopœia used so recklessly and ignorantly and none doing more general mischief—it has always done thrice more harm than good. In the general practice of medicine some of the preparations of opium are to be found in about every prescription. The hypodermic syringe has made thousands of morphine habituates, either with the syringe or without it with the powder. The abuse of the drug is much more common in some States than in others. The influence or impress of certain teachers of therapeutics has been wide in certain sections. The very common remark of teachers, “Gentlemen, it is your mission to relieve pain and suffering,” has done a world of mischief. Many of them spend days talking over the numerous preparations of opium without an allusion to the importance of an accurate knowledge of pathology and diagnosis. The growth of the poppy in North Carolina is to be lamented; it will do just what it has done for China—decimated a great people.

While a student of medicine we were taught the use of opium throughout the treatment of about every disease. In many of the hospitals Dover’s powders were dubbed “dozing powders,” and begged for nightly. Many patients purchased

hypodermics immediately on their discharge from the hospital. The abuse of morphine with the hypodermic has resulted in two great evils, an habituate, and the mercenary use of the drug ; the unfortunate patient the prey. Now, daily at eight o'clock, I see a physician drive to a house to give a hypodermic ; the visit is made twice or thrice daily at fixed hours, to repeat the injections, not for malignancy. It is a common thing for physicians to visit patients regularly for the specific purpose of giving a hypodermic. Again without an effort to determine the nature of the trouble, or cure the patient with well-applied treatment. It is in surgery and nervous disturbances that opium and patients have been most abused. But few physicians re-educate themselves ; the few that have successfully tried it, realize the great importance of deviating from the routine methods of practice still commonly taught. It is to be hoped that the more scientific schools of the day will recognize the great evil.

The comfort of patients throughout their convalescence in abdominal surgery has been so gratifying and pleasing without the use of opiates in any form that I constantly take pleasure in exhibiting patients to visitors and pupils, and directing their attention to the total absence of all the uncomfortable symptoms following its use.

The management of all surgical cases is easy and the convalescence more satisfactory and speedy when opium preparations are not used. I am satisfied that the use of opium in some form, either by injection, suppository, or solution, has been largely responsible for much of the high mortality in abdominal surgery. I rejoice I have never used it in abdominal work except where cancer existed. I have watched the work of others and compared the mortality of the operators who use it with that of those who reject it— all that condemn it head the list with a low mortality. It is simply cruel and unkind to use opium in abdominal surgery. The use and abuse of it before painful troubles are removed obscures symptoms, impairs nutrition, and greatly compli-

cates the management of the patient. Without opiates the patient co-operates, the pain lasts only a few hours in all abdominal and pelvic operations.

The numerous uncomfortable conditions favored by opium are wholly absent without it.

The surgical profession should make an earnest effort to withhold opiates before discussing this subject.

We can justly speak of the opium or morphine habit as that of the profession, not of the patient.

The following report of four instructive cases will illustrate most beautifully the successful management of four typical cases of acute, angry, and general peritonitis, a painful trouble, one always treated by opiates and rarely successful; quite universally admitted a fatal disease.

Case I. October 13, 1894. Mrs. A. F., aged twenty-five years — acute general peritonitis, persistent nausea, distention, general adhesions, bloody serum, lymph and muddy fluid throughout the peritoneal cavity. Freeing of all adhesions, irrigation and glass drainage, followed by speedy recovery.

Case II. October 13, 1894. Mrs. M. B., aged twenty-three — acute double pyosalpinx, with acute general peritonitis. Section irrigation, glass drainage; speedy recovery.

Case III. October 17, 1894. Mrs. J. C., aged twenty-one years — acute double pyosalpinx, with general peritonitis. Section removal of suppurating tubes and ovaries, irrigation and drainage, freeing of all adhesions; recovery.

Case IV. October 25, 1894. Miss J. R., aged twenty years — acute pyosalpinx, general adhesion and peritonitis. Removal of suppurating tubes and ovaries, unraveling of all adhesions, thorough flushing, glass drainage; recovery.

This was a very angry and ill group of patients. The treatment was rather simple, rapid and thorough. Section, irrigation, drainage, and rest, quiet and position, without opium. All varieties of peritonitis have been uniformly and successfully managed by the simple treatment suggested.

DUTY OF THE PROFESSION IN INEBRIETY.*

BY HAROLD N. MOYER, M.D., CHICAGO,

Professor Mental Diseases, Rush Medical College, Fellow of the Chicago Academy of Medicine.

Is inebriety a vice or a disease? To the philosophical mind it would seem as if the above question was useless, as our answer will depend almost wholly on the definition that we attach to the terms "vice" and "disease." The term disease as used by medical writers has come to have a narrow and restricted meaning. That was not true of the old French word *désaise* from which the word is derived, and which simply meant a want of ease, or discomfort, and might be applied to an immense variety of conditions and objects. This broader use of the word was common with the early English writers. Spenser says :

"Labored long in that deep ford with long disease."

Of late the term has become more and more restricted until it is now largely used by medical writers to designate certain morbid conditions of the body or its organs, usually accompanied by a disturbance of function or appreciable alterations in the tissues. Later writers, particularly those indoctrinated with the evolutionary views of Darwin, Spencer, and Huxley, would again enlarge the scope of this term, and now define disease as "a want of harmony between the individual and its environment." In this broad sense all vice and criminality are but diseases, which is substantially the view adopted by Lombroso, Maudsley, and others interested in criminal anthropology.

In this, as in many other discussions, an exact appreciation of the scope, and agreement as to the meaning, of the terms employed would at once settle the main points of contention.

* Chicago Pathological Society Transactions.

It is apparent that in the narrow, restricted sense inebriety should not be considered a disease, certainly not in the same sense that pneumonia is. Of course, the secondary effects of alcohol, the changes of brain, stomach, and liver that are produced by it, are diseases. The question, however, does not relate to these, but to the drink-habit *per se*. At first it would seem that inebriety must surely be a vice, that to drink alcohol or to refrain from doing so is something peculiarly within the domain of the volition of the individual, and if we adopt the theological conception of free-will we must place inebriety among the vices ; but it is at this point that evolution steps forward and denies the freedom of the will in its broad sense. We are, therefore, on the horns of a dilemma. We must accept one theory or the other. Which shall it be? Before answering this question let us consider the question of utility, for theories must, to a large extent, govern practice, not only in medicine, but in human affairs. The world once burned its witches, because on the then theory of witchcraft they believed it would be dangerous to allow witches to live and be at large. The revolving stool, baths of surprise, and chains were part of the necessary outfit for the treatment of insanity. It was not that the people of those times wished to be cruel, but the treatment was an outgrowth of a mistaken theory of insanity. This theory was based on the metaphysical conception of free-will. The doctors interrogated their own minds and found that they had the power to control their wayward fancies and co-ordinate their conduct. They believed that lunatics had the same power if they were only furnished a sufficiently powerful motive, hence the stripes and chains with which lunatics were treated, and according to their theory of the diseases the treatment was certainly appropriate. They could not conceive of the mind being diseased, hence insanity marked but an imperfection in the will. The same question is now raised concerning inebriety, and we must ask ourselves whether the chronic drinker *will not* or *can not* abstain from liquor. If the liquor habit marks but an imperfection of the

will its natural treatment will be prayers, exorcisms, and moral suasion, as well as fines and imprisonment. The world has been following this prescription for many years, and with, so far, but imperfect results. The agitation against liquor has greatly lessened its use as a beverage, and has quite banished it from the tables of the better classes of the community, but at the same time we doubt if there has been a material decrease in inebriety, certainly not if we count the various drug habits that in a measure have taken the place of alcohol. The chief argument that is used in support of the vicious theory of drunkenness is, that to admit for a moment that the inebriate is a diseased person removes at once all incentive to moral regeneration, that he will sink supinely into the condition of an interesting invalid and will give up all hope of reformation. We do not think that this view is well taken or that it is borne out by the experience of those skilled in the treatment of inebriety. If we tell a gouty person that his disease is the result of an indiscretion in diet, and that he must be more abstemious in the future, do we thereby lessen his inhibitory power? Would it be better to say that there is nothing the matter with him, and that the pain in his toe marks but an imperfection in morals?

If we assume that inebriety is a disease, we place an additional restraint upon the use of alcoholic liquors. If the consequences of over-indulgence are once clearly pointed out, and that the chronic ingestion of alcohol not only produces a disease, but in a measure renders an individual irresponsible, not only will there be an additional incentive to refrain from its use, but the community will deal much more justly and rigorously with the inebriate. The chief enemy of these unfortunates is their immense egotism. It is rare to meet one who does not say that he can give up the habit any time. Or, after a brief period of abstinence, he will say that he could wade through a lake of liquor as deep as his chin and not drink a drop. Such remarks as these are usually precedent to a most disastrous relapse. The only way to overcome this egotism and the too great confidence of friends is

to teach that inebriety is to a great extent beyond control of the person's will, that the mind and body are diseased and that it is necessary for the person to place himself under medical advice for the bodily ailments and the best circumstances for aiding the feeble will.

Another matter that has served to obscure the discussion and proper understanding of this subject is that there is no well marked line of division between liquor taking and inebriety. One swallow does not make a summer, and one drink does not make an inebriate. In fact, some individuals do and may take liquor in moderate quantities for many years, without becoming inebriates. It is impossible to lay down any hard line on one side of which a man shall be said to be an inebriate and on the other that he has the drink habit. It would be desirable for our theories if nature would follow our classifications and make clean-cut distinctions. We can divide the whole world into inebriates and sober people, but we shall find all gradations, from the individual who takes three or four drinks a year, to the victim of the drink disease who is as hopeless and helpless in the presence of his malady as is the sufferer from epilepsy or hydrophobia. This want of division is not peculiar to inebriety, it is characteristic of insanity, and one of the chief difficulties in dealing with the legal control of the lunatic arises from this want of a dividing line between sanity and insanity, a difficulty that our judges have been attempting to overcome for two hundred years. It is impossible to lay down any definite rule, but in a general way, where there is a distinct craving for alcohol, which is only partially restrained, or where we have unrestrained indulgence with the more constant phenomena of acute or chronic intoxication, or where we have the secondary effects of alcohol upon the tissues, we may make a diagnosis of inebriety. It is well understood that such division is but arbitrary, and the effects of alcohol in the milder cases is one of degree and not of kind. Still a division must be made somewhere, and it would seem best

to place it near the point where alcohol affects self-control and civic relations.

The profession at large owe a great debt to the inebriate and one that they have appreciated too lightly in the past. It is rare that a patient presents himself directly for the alcohol habit ; it is usually for some intercurrent affection or for the secondary results of the alcohol. As a rule the symptoms are prescribed for, a few inquiries are made regarding habits and the patient is told to moderate, or stop his use of alcohol, and dismissed with a few added injunctions as to diet. In these cases the physician regards as a cause that which is in reality the disease (inebriety). It is the duty of the physician in every such case to make a careful inquiry into the family and previous history of the patient, the date of beginning of the alcohol habit, its cause if ascertainable, and finally the quantity, time, and kind of alcoholic drinks taken. These, with an estimate of the condition of the nervous system and an examination of the internal organs, will furnish a guide for prognosis and the general indications for treatment.

I do not believe there is any specific treatment for inebriety, nor that there is any drug or combination of drugs that will relieve the craving for liquor, except they are themselves intoxicants, or are like strychnine, atropine, or other alkaloids, that when exhibited in very large doses produce a marked toxic effect. Not that these drugs are devoid of value when exhibited in proper doses, and under proper directions. They are most excellent tonics and restoratives, but when given in extraordinary quantities and particularly beneath the skin, they may produce very profound disturbances in the nutrition of the nerve centers that may lead to insanity or the production of the more grave degenerations.

Such drugs as ext. cocoa and the general nerve tonics are indicated, but they are not to be given in doses that shall in any way make them substitutes for the alcohol that has been taken. Hot baths are useful, especially the Turkish bath, where available. They tranquilize the nervous system

and aid elimination. Chloral, the bromides, and other sedatives are useful to procure sleep. These patients ought to be kept busy as much as possible with their treatment. Medicines should be given often, in small doses, and the baths frequently repeated. It is astonishing sometimes what a wonderful effect a small bottle of a comparatively innocent drug will have in allaying the thirst for liquor, providing the patient is told with sufficient earnestness that it is given for that purpose. In a general way, the home treatment of inebriety, like that of insanity, is unsatisfactory. In the milder cases good results may be achieved. In the more advanced cases, where the peculiar mental changes of chronic alcoholism have come on, it is better to send the patient to some institution. In this way old habits and associations are interrupted, and a more profound impression is made upon the mind of the patient than can ever be reached by the physician at home, be he ever so skillful.

In bringing this article to a close, I am profoundly impressed with its fragmentary nature. I have made no attempt to go into the extensive and valuable literature with which, indeed, I am but imperfectly acquainted. I have simply endeavored to set down a few suggestions that have been the outgrowth of my experience with this class of cases. If it shall but stimulate the profession to a livelier sense of their responsibility in dealing with these unfortunates it will fulfill the object for which it was written.—132 *LaSalle St., Chicago.*

DEPARTMENTAL INQUIRY ON INEBRIATES.—The Scottish Departmental Committee on vagrants and inebriates, concluded the reception of evidence at several sittings in London last week. Among the medical witnesses examined were Sir James Crichton Browne, Dr. Hoffman, Dr. Nicolson of Broadmoor, and Dr. Norman Kerr. Sir Charles Cameron, Bart., M.P., presided as chairman of the committee; Dr. Farquharson, M.P., and the secretary (Dr. J. F. Sutherland) were also present. The committee expects to meet in London in March or April to prepare their report.—*British Medical Journal*, February 9th.

TEA AND ITS EFFECTS.

BY JAMES WOOD, M.D.,

Visiting Physician to the Brooklyn Central Dispensary.

Excessive tea drinking is fast becoming a greater evil in this country than it ever has been in England and Ireland, the countries most noted for this indulgence. People so easily fall into the habit of using this form of stimulant that they are surprised when the physician calls their attention to the fact that they are drinking too freely. It is generally thought to be so harmless that it has become almost a household drink in many families, and in consequence the use is steadily increasing. It is, indeed, a very frequent occurrence to find one member of the profession advising patients to use tea and another immediately prohibiting its use. This procedure testifies most strongly to a want of some definite knowledge of the subject, and consequently there is no principle for guiding the course to be taken. What result this condition of affairs has had upon the limitation of the use of tea is well illustrated in the increasing demand and consumption in this country.

In 1890 there were imported into the United States 83,494,956 pounds of tea, an appreciable increase over the previous decade, and giving an allowance of $1\frac{1}{3}$ pounds to each individual — truly a surprising quantity.

Some there are who deny that "theinism" is a common condition. In reply, the statement is made that since January 1, 1894, of 1,000 patients applying for treatment, 100 gave such symptoms in the general examination as to point directly to tea inebriation. How many suffered from a similar condition, but applying for treatment for such diseases that did not necessitate going into a history of their daily customs, were addicted to the same habit, it is hard to state. The estimate is made that at least 50 per cent. drank the in-

fusion to a greater or less extent. Here, then, we have clinical data of a cause of 10 per cent. of the ordinary derangements which one meets in general practice, especially in our large cities. Surely the importance of the question merits a careful study of tea and its effects upon the system.

There seems to be a very wide divergence in the results of different authorities in the analytic examination of the tea leaf or of an infusion of the same. Probably the best representative analysis is as follows :

Theine,	2.8 per cent.*
Albuminoid principles,	3.5 per cent.†
Carbohydrate elements,	9.0 per cent.‡
Tannic acid,	14.2 per cent.§
Essential oil,	0.75 per cent.
Cellulose,	23.0 per cent.
Water,	0 per cent.

These are considered the principal constituents of the tea-leaf, but besides the ones already mentioned, we have others, such as wax, resin, extractives of different kinds, salts, xanthine, hypoxanthine, boheic acid, and apo-theine. From this extensive list of constituents we might with justice consider the tea-leaf a very complex body. However, there are but few of value either from a dietetic or scientific standpoint. Those which we shall consider are theine, tannic acid, and the essential oil.

Tea is usually used in the form of an infusion,—very often it is a pure decoction, made from the leaves, and the action which it has on the human organism is as the sum of the effects of the three important constituents named above. The theine affects directly the nervous system primarily and the organic system secondarily; the tannic acid affects the digestive apparatus and such organs as are intimately connected with it; while the essential oil gives us the peculiar

* Kozai says 3.3 per cent.; Muller, .65 per cent.; Peligot, 3 per cent.; Stenhouse, 2 per cent.; Bauer, 1.3 per cent.; Parkes, 1.8 per cent.

† Kozai says 5.9 per cent.; Muller, 3 per cent.; Bauer, 9.4 per cent.; Parkes, 2.6 per cent.

‡ Parkes, 10 per cent.

§ White, 7.17 per cent.; Parkes, 15 per cent.; Kozai, 10 per cent.

intoxication so typical of tea dipsomania. The natural order of study of this commodity and the effects of its use would be to consider at this point the infusion of tea. Tea is usually taken in this form by the people at large. The length of time of the infusion will greatly change, not only its composition, but influence almost entirely its action upon the system imbibing the same. A good example of this is found in the following table of the difference in the amount of tannin taken up in a three and fifteen-minute infusion :

	Finest Assam.	Finest China.	Common Congou
Infusion for 3 minutes yielded	11.30 per cent.	6.77 per cent.	9.37 per cent.
“ “ 15 “ “	17.73 per cent.	7.97 per cent.	11.15 per cent.

It will be seen from this table that in an infusion of fifteen minutes of the finest Assam (Indian) tea, the yield of tannin is nearly two and a half times as much as the finest China. In all of the different teas, we find the length of time of the infusion affecting greatly the composition, with possibly an exception in the case of the better qualities of China tea. About six-sevenths of the entire soluble matter — 33 per cent.*— of the tea-leaf can be incorporated in the first infusion. Again the authorities differ † greatly, but the above percentage will be found to be that most often met with in teas in common use in this country. Of the total amount of nitrogenous substances, 47 per cent.‡ is soluble and is present in the infusion. The amount of tannin will range from 7 to 11 per cent., differing in the kind of tea. The amount of essential oil is about .75 per cent., and is present in larger quantities in the first infusion than in subsequent ones, and if the tea is not drunk immediately, it is soon lost. This is well illustrated in the frequent headaches complained of by professional tea-tasters, who use

* Pavy, Bauer, and Peligot.

† Soc. of Pub. Analysts of Eng. says 30 per cent. ; Muller, 45 per cent. ; J. Lehman, 15 per cent.

‡ Parkes.

the infusion immediately after it is made. Thus much for the constituents of the infusion.

The amount of tea which can be drunk every twenty-four hours with impunity differs with the individual. Some people are profoundly intoxicated by indulging in two cups of strong tea per day, while cases have come under my observation where fifteen pints of the strongest were taken every day with very little damaging effects. Usually we find that an ounce of tea-leaves used daily will soon produce poisonous symptoms. This amount would contain from six to ten grains of theine.

The question might very properly be asked: What are the functions of the body disturbed by drinking tea, and what prominent symptoms are most often present.

From the first 100 cases which presented themselves for treatment and advice the following analysis has been prepared:

ANALYSIS OF SYMPTOMS IN 100 CASES OF THEINISM.

Sex, 69 per cent. female; 31 per cent. male. Quantity: 2 pints or less, 54 per cent.; 4 pints or less, 37 per cent.; 10 pints or less, 9 per cent. Strength: 77 per cent., strong; 15 per cent., ordinary; 8 per cent., not known. Number nervous: 72 per cent. Bowels: 40 per cent., constipation; 2 per cent., diarrhoea; 15 per cent., irregular. Pains: 16 per cent., general; 10 per cent., heart; 9 per cent., back; 6 per cent., side; 7 per cent., chest. Dizziness: 20 per cent.; faintness: 8 per cent.; gastric and intestinal indigestion: 19 per cent.; intestinal catarrh: 8 per cent.; dreams: 5 per cent.; "nightmare": 5 per cent.; depression: 10 per cent.; despondent: 20 per cent.; excited: 5 per cent.; suicide: 3 per cent.; headache: 45 per cent.; rheumatism: 5 per cent.; irregular menses: 12 per cent.; palpitation: 19 per cent.; muscular tremor: 12 per cent.; insomnia: 15 per cent.; anæmia: 6 per cent.; dyspnoea: 5 per cent.

In subsequent cases careful study is being made of the irregular cardiac action, hallucinations, nightmares, success-

ive dreams, obstinate neuralgia, anxiety, a persistent, sinking sensation in the epigastrium, prostration and general weakness, excitement, and mental depression. These are more or less present in nearly all cases of tea intoxication, and are often the symptoms for the relief of which the patient seeks medical advice. Certainly comment on the table is hardly necessary ; it bears silent but impressive witness.

In the abuse of this drink we have the ætiological factor, either direct or indirect, for nearly 50 per cent. of the headaches, one-fifth of the cases of dizziness, and the same percentage of despondency and palpitation of the heart. Truly an agent capable of so strongly affecting the human organism is worthy of more than passing attention.

The effects of tea drinking on the digestive organs is very pronounced. In a large number of cases it is the active agent in the production of constipation, in others an alternating constipation and diarrhœa, and in some an intestinal catarrh. Some patients after drinking tea give a history of severe abdominal pains accompanied with nausea, and the action of the bowels greatly diminished.

These or any of the effects which tea has on the digestive system are largely due to the estringent action of the tannin.

Schwann has shown that tannin will throw down a precipitate from artificial digestive fluids and render them inert. What else can we expect but deranged digestive action, when people will indulge in copious draughts of strong tea before, during, and after each meal, and often nearly every hour in the day ?

Let us now consider the principal constituents of the infusion of tea separately that we may better appreciate the latent power which they contain. The theine is probably the most important of them all, and yet what changes this nitrogenous body undergoes in the system is still uncertain. We know that the end products, like those found after the metamorphosis of any nitrogenous body, are undoubtedly urea, uric acid, creatinine, water, and carbonic acid, but what intermediate changes have occurred before the final

results are reached, is unknown. If it is oxidized artificially, we have as the result methylamine ($\text{CH}_3\text{H}_2\text{N}$), hydrocyanic acid (HCN), and malic acid ($\text{C}_{12}\text{H}_{12}\text{N}_4\text{O}_7$).

Theine lessens the tissue metamorphosis to a considerable extent,* as we find a decrease in the amount of carbon dioxide expired. If theine is pushed until we get its full physiological effects, we have a general excitement of the circulation, with rapid pulse, muscular tremor, and a very urgent wish to empty the bladder. The imaginative faculties are more acute, or the mind may wander, hallucinations and visions make their appearance, and a peculiar form of intoxication supervenes. These symptoms end, after a long period of wakefulness, in a deep sleep from exhaustion. Theine seems to affect chiefly the sensory system, but, in large doses, it may cause spasms and convulsions. The peculiar rhythmical contraction, which we find in the voluntary muscular fibers and lasting for a considerable period, often several hours, acts transversely across the fiber, because we find that it is elongated at each contraction. Hypodermatic injections of theine acting on the sensory system produce local anæsthesia at the point where the needle was inserted, and for some distance below, thus having an efferent action along the nerve trunk. It is not narcotic.

Of the 47 per cent. of nitrogenous substances, little of value can be said. Traces of xanthine and hypoxanthine were found by Baginsky, and these bear the same relation to similar if not identical bodies which we find in the extract made from muscular tissue, and they undoubtedly occur as the result of a like process, namely, a retrograde metamorphosis of nitrogenous elements.

The amount of nitrogenous elements which is available for nutrition is manifestly too small to be of any value, and additionally it exerts little if any influence in the chemico-physiologic changes by virtue of which vital force is now produced. The arguments which certain individuals bring forth

* Dr. Edward Smith, Phil. Trans.
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to substantiate its high-sounding claim as a valuable addition to our list of food stuffs are truly amphigoric.

The next most important constituent of tea is the essential oil. This oil gives the aroma to the tea in a properly prepared infusion. Johnson is skeptical about its existence before the roasting and drying process has been completed, and thinks it is produced during this procedure. It is found more plentifully in the green tea, and seems to be lost during the greater oxidizing process through which the leaves are put in order to produce the black variety. Physiologically it exerts a stimulating and intoxicating effect which is so powerful that the natives do not use tea until it is at least a year old. This alone is the narcotic agent found in the tea leaf and infusion. The amount usually found will average about 1 per cent.

Mention has been made of a difference existing between the black and green varieties of tea. The green tea is richer than the black in theine essential oil and tannin, and all the constituents soluble in water by fully five per cent. The influence which the green tea has on the nervous system, and for which it is largely noted, is due to one of the above named constituents — the essential oil. Among the better class of people who drink tea, and can afford the better varieties, the black is given the preference, because it is less astringent and exerts less influence on the nerves. The poorer classes, in Ireland especially, use the Indian (Assam) and cheaper varieties and cannot avoid the deleterious effects which the better class escape.

Next to the effects of tea on the nervous system the digestive organs are most often deranged functionally. In so many cases the so-called infusion of tea is nothing more or less than a very strong decoction that its contact with secreting and excreting surfaces must result in harm. If tea is imbibed too soon after a meal is taken, the digestive action will be seriously disturbed and hindered. The condition is not to be wondered at when we are aware of the ease with which the active agents of the digestive juices are precipitated

and rendered inert by the tannin, or tannic acid, always present in the infusion or decoction. A very persisting gastric disturbance is often excited and maintained, which is positively non-responsive to any medicinal remedy and is only relieved by a total abstinence from the use of tea. In a large percentage of tea inebriates, as can be seen from the analysis given, the action of the bowels is greatly diminished, nausea is common, and very distressing abdominal pains are present. The nerve ganglia of the solar plexus are in an irritable condition, and a sinking feeling in the epigastrium is much complained of.

This description of the effects of tea on the nervous system and digestive apparatus is necessarily brief. To elaborate the different effects noted in those who indulge too freely, would be to narrate most of the common complaints suffered by humanity. In reports just received from institutions for the insane in Ireland great prominence is given to the immoderate use of tea as a causative factor in insanity.

The use of tea by the two sexes is a very interesting study. In the table of the 100 cases reported, 69 females were inebriates, while only 31 were of the male sex. This difference is often greater, especially among the poorer classes in our cities. Why this difference between the sexes exists is probably explained by the greater use of tobacco by men and the consequent satisfaction for a stimulant. Women assuage the importunities of the system for a stimulant by tea.

Undoubtedly the primal cause of the use of stimulants is poor health. Excessive labor, insufficient and unhygienic sleep, improper and inadequate amount of nutrition extending over a long period, possibly years, creates the best possible condition which calls for stimulants.

It is hardly within the province of this article to discuss the relation of tea-drinking to poverty, general perverseness, and other economic factors; these are reserved for future narration.

The relative position of theine among other stimu-

lants is interesting, as we may thereby the more readily appreciate the power which this drug—for we may with justice so class it—is capable of exerting.

Theine and digitalis exert certain physiological actions in common. In toxic doses reflex action is lowered, especially of the nasal mucous membrane, by exciting Setschenow's inhibitory center. Both cause prostration, muscular tremor, and often convulsions. They are mildly diuretic and diminish urea and uric acid. They cause nausea, vertigo, and abdominal pains. They are antagonized by opium.

The contrast between theine and caffeine is of still greater interest, because a large amount of so-called caffeine is made from old tea leaves, and is nothing more than theine. Is it, then, to be wondered at that some of the caffeine found in our shops proves of so little value?

Attention is called to the following table of the comparative actions of the two drugs:

THEINE.	CAFFEINE.
Effects sensory system.	Motor.
Produces neuralgia.	Does not.
Causes spasms.	Does so late, if at all.
Causes convulsions.	Does so late, if at all.
Impairs or abolishes nasal reflex.	Does so late, if at all.
Diminishes temperature.	Increases.
Is astringent.	Is relaxing.
Dilates capillaries of splanchnic arcade.	Contracts the same.
Mildly diuretic.	Is powerfully so.
Causes irregular and feeble cardiac action.	Causes strong and regular.
Causes sinking sensation in epigastrium.	Relieves the same.
Causes sick headache.	Relieves the same.
Opposes active nutrition.	Increases nutrition and tone of system.

While theine and caffeine are diametrically opposite in the above actions on the system, they are similar in producing cerebral excitement, wakefulness, hallucinations, and a soporific state following the exhaustion of insomnia. It is very apparent from our study of tea and its principal constituents, that we have an agent of great power,—one

capable of producing the most detrimental effects on the system.

A fact has been noted among those tea inebriates who also drink coffee which is in support of the above statement. There are a considerable number of people who indulge very freely in both coffee and tea, and it is often difficult to determine which is producing the poisonous effects.

When we endeavor to make a diagnosis by exclusions aided by the table already given, the difficulty is even greater. Caffeine and theine do undoubtedly antagonize each other, or rather, the symptoms which each are likely to produce alone are not present when the two are used in conjunction with each other. This was first noticed in some few patients who could drink large quantities of both tea and coffee and be but slightly affected thereby. They, however, complained the most of insomnia and cerebral excitement and of almost no other symptom. The study of the action of these two drugs in the system at the same time, was one of the most interesting phases of our investigation of tea intoxication and gave the idea for the employment of caffeine in the treatment of this condition — a procedure which has given the best results.

It is a question whether theine represents any physiological action worthy of a place as a therapeutic agent. It has been used hypodermatically in a few cases of sciatica, but with uncertain results. That its constant administration either in the uncombined form or in conjunction with other bodies, as for instance in the infusion or decoction of tea, is followed by undesirable effects on the system is undeniable. The pernicious influence on the organism which our study of tea has brought to light, and with its increasing use, should not be lightly treated, but an effort made to educate the people as to the danger of using it. Tea is one of the principal articles given to the poor by the charitable societies of some churches, and is a factor, therefore, of some importance in producing the increase of sickness among these unfortunates.—*Brooklyn, N. Y., 162 St. John's Place.*

UNWHOLESOME WORKSHOPS AND DRINK.

BY DAVID WALSH, M.B.,

Assistant Physician, Western Skin Hospital, London.

Your president, Dr. Norman Kerr, has asked me to contribute a short paper for discussion at your Society. In complying with that request I shall not attempt to deal with any of the deeper scientific issues involved in the study of inebriety, but shall endeavor to present you with some suggestions upon what appears to me a matter of some importance, namely, the relation of unwholesome workshops to intemperance.

The study of inebriety is now rapidly assuming the position of an exact science. Investigators recognize that alcoholism does not merely mark a failure in individual morality, but that it is to a large extent the outcome of heredity and environment. So that instead of bemoaning the personal wickedness of the drunkard the tendency nowadays is to unearth, as far as we may, the causes underlying his unhappy condition. To put the matter in other words, we no longer waste our time in treating symptoms, but do our best to get at the root of the disease. This attitude is the more hopeful inasmuch as we have in alcoholism to deal with a morbid condition which is in all cases much easier to prevent than to cure.

I venture to think that this logical way of approaching the question constitutes a great step towards the solution of a complex and difficult problem. It has always seemed to me that the temperance party has lost a great deal of support owing to the unattractiveness of its methods. Beyond a doubt the advocates of total abstinence have won great triumphs in the teeth of persistent opposition and abuse. Still, from a scientific point of view, their work is open to the objection that it has been carried out on a narrow basis, and

has appealed to emotions rather than to reason. Folks of sound understanding require something more than the hymns and the "horrible examples" of the teetotal platform to convince them of the dangers of alcoholic excess. They are more likely to pay attention to a broad philosophical treatment of the whole question, with a systematic examination of causes, symptoms, and results.

Such a task, however inviting, would be far outside the limits of this short paper. For present purposes I will assume that the evils of excessive drinking are granted. I will draw no lurid picture of how the demon drink plays havoc with the homes and the lives of all classes of society; of how it brings disease and suffering and death in its train. Nor will I attempt to discuss the broad question of why men drink. At the same time I may perhaps be allowed to classify what are in my opinion the chief causes of intemperance. They are briefly as follows :

1. Fashion, a powerful lever. Habits of excessive drinking have ceased to be fashionable among the wealthier classes, and are now in vogue chiefly among the poor.

2. Weakness of body, hereditary or acquired, leading to a natural desire for stimulus for heart and brain.

3. Weakness of brain, also hereditary or acquired; closely connected with bodily weakness, and shown by want of control.

4. Temptation, which abounds on every hand, owing to the absurdly disproportionate number of places licensed by government for the sale of drink.

5. Acquired habit; as the health is undermined and self-respect destroyed, drinking becomes a fixed habit.

6. Individual environment, such as starvation, poverty, overwork, idleness, unwholesome dwellings and workshops, leading to weakness of mind and body, and so predisposing to alcoholism.

My part of the subject is to show how the environment of an unwholesome workshop may drive a man to drink.

First of all, apart from mere unreasoning custom, I im-

agine that the desire for drink, in the earlier stage at any rate, is purely physiological. In other words, a man drinks for the two reasons that he is thirsty and exhausted. For instance, if engaged in a hot and laborious calling, such as iron smelting or baking, he finds temporary comfort and aid in alcoholic beverages. His thirst is quenched and his flagging heart stimulated in a quick and speedy way by a draught of ale or porter.

Besides heat and hard work, however, the workman is often exposed to other injurious influences. In a workshop where the ventilation is defective, for example, he is exposed to the injurious effects of carbonic acid gas, given off in respiration, by gas jets, and by furnaces. It must be remembered, moreover, that a man when working hard throws off much more carbonic acid than when at rest, and therefore needs a greater air supply. The following table furnishes a fair idea of these varying conditions of waste and demand:

	CO ₂ given off per hour in cubic feet.	Fresh air needed hourly per head in cubic feet.
Adult male at rest,	0.72	3,600
“ in light work,	0.95	4,750
“ in very hard work,	1.96	9,800

That is to say, an adult gives off more than twice the ordinary amount of carbonic acid when at hard work, and requires nearly three times more air than when at rest. From these figures it is clear that a workshop demands a specially abundant supply of fresh air. What are the actual facts of the case? I imagine those who are acquainted with the average condition of workshops in this country, sanitary inspectors and others, will tell you that not only is ventilation in the majority of instances totally inadequate, but also that overcrowding is the rule rather than the exception. With regard to overcrowding it is no doubt difficult to fix a standard of cubic space that should be exacted for each workman. In barracks the minimum allowance is 600, and in prisons 800 cubic feet for each occupant, but in each case it must be noted that free ventilation is insisted upon. Would it not

be feasible to impose a general minimum average for all trades of 300 cubic feet for each workman, permitting that minimum only when accompanied by proper ventilation? It is obvious that some trades require a larger amount of air space for workers than others. Thus in bakeries, to which my friend Dr. Waldo and I have given special attention, we are of the opinion that at least 500 cubic feet of air space should be allowed for each occupant.

A familiar instance of the ill effect of carbonic acid is seen when a person faints in a crowded church or theatre, and then the popular, and indeed, the physiologically correct remedy is fresh air and a dose of alcohol. The workman in a badly-ventilated workshop suffers from a form of chronic carbonic acid poisoning, which gives rise to headaches, anæmia, rheumatism, lung and heart affections and general debility. In point of fact, this is just the condition in which a man goes to the nearest public-house for a stimulant as naturally as a duck would make for the nearest pool of water.

Besides carbonic acid there are of course many other injurious agencies hurtful to health in an unwholesome workshop. Among them may be mentioned, darkness, damp, and poisonous sewer gas from imperfect drainage. Special trades, again, have their own peculiar dangers, such as lead and other metallic poisoning, the irritation of dust, and the deadly action of various kinds of chemical fumes.

After a close investigation of the subject Dr. Waldo and I have come to the conclusion that the badly constructed and unhealthy bakehouse is to a great extent answerable for the drinking habits that unfortunately prevail among the journeymen bakers. We take that class because it has come especially under our notice, but in many other trades there is no doubt as great or a far greater amount of intemperance.

If we compare mortality according to occupation and classify certain specified causes of death we obtain some interesting results as to the diseases and trades closely asso-

ciated with alcoholism. It is extremely difficult, however, to steer clear of fallacies in dealing with statistics of this sort. Dr. Whitelegge, however, has laid down a general statement that statistics tend to establish the relation between intemperance and diseases of the heart, liver, kidneys, and nervous system, and also phthisis, gout, and suicide.

Broadly speaking, it may be assumed that men who spend the greater part of their time at indoor work are likely to be of impaired vitality. The difference is shown by the enormous disparity of the rates of mortality between the town and the country laborers. The longer life of the countryman is probably due to the fact that he spends most of his time in the open air, and has little opportunity for indulgence in alcohol. Otherwise he shares many of the unfavorable conditions that apply to the town brethren, such as bad housing, scanty food, poor pay, and long hours of labor. The London general laborer has a mortality three times as great as that of a corresponding class in the country.

Enough has been said to show that the question of occupation and environment in relation to mortality is both wide and complex. If, however, it can be shown that an unwholesome workshop is one of the causes that lead men to crave for a physiological stimulant, we have at once the key to a preventive measure capable of wide application. Place the workman under proper conditions in his workshop and he will be less likely to crave for drink. The definition of "proper conditions" is by no means an easy one to make. It is clear that the matter cannot be disposed of simply by handing it over to the medical officer of health. There are other important economic factors that must be taken into consideration. Hours of work, for instance, will have to be shortened to a reasonable length, in order that the workman's bodily strength may not be unduly taxed. He should have a fitting time and place provided for his meals. He should also be able to command a fair living wage, so as to procure for himself good food, clothing, and housing.

Here, then, is a sufficiently wide field for the energies of the temperance reformer. An old proverb reminds us that it is ill talking to a starving man. In my opinion it is just as useless to preach temperance to a man who is daily and hourly weakened in mind and body by exposure to long hours of labor in an unwholesome workshop.

Finally, I may say that I have found even this small section of the subject of inebriety to be beset with difficulties. In our present state of knowledge it seems hopeless to attempt any formal proof of the views I have advanced. My remarks have been necessarily for the most part of a general character, and I feel that their possible value may lie in a certain suggestiveness. At the same time I have endeavored to avoid the faintest approach to dogmatism.

The conclusions I draw are:

1. Anything that weakens the health of the individual predisposes him to resort to alcohol.
2. That an unwholesome workshop, by undermining the bodily and mental health of its occupant, leads him to seek physiological relief in alcohol.
3. That the temperance reformer should also be an earnest health reformer.

DISCUSSION.

Dr. Waldo, medical officer of health for Southwark, thoroughly endorsed what had been advanced by Dr. Walsh. With reference to the true mortality of alcohol, he said, "In my report for 1892, I remarked that the deaths attributed directly to chronic alcoholism and to delirium tremens did little to indicate the actual loss of life due to the abuse of alcohol. I further pointed out that the natural wish to spare the feelings of surviving relatives prevented the returns from mentioning the real cause of death. Hence the offensive term "alcoholism" was often replaced by one of its secondary results, such as disease of the liver, brain, kidneys, or stomach."

With this fact in view the following suggestion was made:

“That a nearer approach to truth as regards alcoholism and certain other diseases could, I think, be arrived at were it made obligatory, in future, for medical practitioners to forward all death certificates, in confidence, direct to the registrars, instead of handing them to relatives, which is at present the usual procedure.

Since the above was written the select committee appointed by the House of Commons to report on death certification, has recommended “that medical practitioners should be required to send certificates of death to the registrar, instead of handing them to the representatives of the deceased.”

The following is a list of those children suffocated while lying in bed with their parent or parents during the year 1893, together with the particular day of the week on which they died :

Sunday,	.	.	.	.	.	.	.	1
Monday,	.	.	.	.	.	.	.	2
Tuesday,	.	.	.	.	.	.	.	0
Wednesday,	.	.	.	.	.	.	.	2
Thursday,	.	.	.	.	.	.	.	1
Friday,	.	.	.	.	.	.	.	2
Saturday,	.	.	.	.	.	.	.	5
								<hr/> 13

Comment on this list is needless.

Mr. H. H. Collins, surveyor for the city of London, and Vice-chairman Paddington Sanitary Committee, looked more to education of the people in sanitary knowledge than to new Acts of Parliament. The law, if carried out, would be very beneficial. Insanitary conditions led to drinking, and in the interests of sobriety the people's surroundings should be made happy.

Dr. Allen, medical officer of health for the Strand district, concurred as to the unhealthy condition of workrooms creating a tendency to force people to drink. With the polluted air so often to be found no wonder that a craving was engendered which found speedy relief in drink. He held that in every domestic workshop there should be 400 cubic feet for each worker.

Dr. Longhurst thought too much stress had been laid on insanitary conditions as driving people to alcohol. He had seen great overcrowding in India in bakehouses, etc., and natives literally forced to rush out to drink and assuage their thirst, but the drink was water. Heredity and other causes operated more strongly.

Mr. Raper pointed to omnibus and cab-drivers as free from polluted air, but as being considerably intemperate. Insurance statistics showed that the alcohol itself was the destroying agent.

Mr. Gandy held that while bad sanitary conditions should be remedied, temptation ought to be diminished.

The president said that there was no true antagonism between temperance reform and sanitary reform, both reforms running on the same lines. Indeed, abstinence from intoxicants was real sanitation applied to the individual, being simply the avoidance of the introduction of lowering poisons into the human system. Vitiating air and a foetid atmosphere predisposed to drunkenness by their depressant influence, and this predisposing cause, with a variety of other physical predisposing causes, should never be lost sight of.

THE CURE OF INEBRIETY.—The drunkard is curable in at least one-third of the cases. The basis of cure is forced and prolonged total abstinence, which should be instituted at once. Delirium tremens does not result from suddenly stopping the alcohol; its only results are headache, malaise, and sweating. The treatment should be undertaken only where the patient may have calm surroundings and a military discipline; some drink, which will quench the patient's thirst and give him pleasure, should be substituted for the alcohol. Treatment should last at least for one year, and before it is terminated the force of the patient's resistance should be tried. When the treatment is concluded some moderate surveillance should still be exercised. If a certain trade or profession has been a causative factor it should be abandoned.—*Marandon de Momytel in Annal. Med. Psych.*

AUTO-TOXÆMIA IN DRUG HABITS.

BY WILLIAM F. WAUGH, A.M., M.D.,

Professor of Practice, Chicago Summer School of Medicine; Professor of Medicine, Chicago Post Graduate Medical College, etc.

Without having occasion to withdraw anything I have written concerning the drug habits, I am inclined to regret that I ever published an article upon them. I would like to hunt up those papers and add to each as a postscript that the remarks applied to the cases on which they were based exclusively, and not to narcomania in general. For the cases vary so much that they defy classification, and the symptoms, causes, and treatment in one case may be precisely contradicted in the next. Even physostigmine, the best of the remedies, has its limitations. In many cases it is of great value; in others it has proved useless, in some even injurious.

In the management of narcomania there is no royal road to success. Each case must be individually studied and be treated as its special symptoms require. Physostigmine has proved best suited to cases with capillary stasis, constipation, fever, and delirium following trifling excitants, when the disease has been of long standing, with many relapses, and when alcohol has been used freely, as well as morphine. But in one such case, where cocaine and tobacco had also been used to excess, and the heart's power was materially weakened, the physostigmine in doses of gr. $\frac{1}{100}$ produced toxic effects at once. When this alkaloid has proved unsuitable, one of its congeners sometimes succeeds, such as muscarine, solanine, pilocarpine, caffein, etc. On the other hand the antagonistic groups, the atropines, picrotoxin, strychnine, brucine, cruraine, etc., prove so decidedly useful in other cases, that one is perplexed to account for these observations.

Possibly the explanation is to be found in the study of

the phenomena attending the prolonged use of toxic agents. When asked why persons who would be fatally affected by a grain or two of morphine, after using it a long time are able to consume a drachm daily with impunity, we answer that they have become accustomed to it. But this is only a re-statement of the fact, and not an explanation of their immunity. Why are they immune?

· My observations in treating many cases of various drug habits, suggested the following hypothesis: When any toxic agent is taken into the system, there is developed in the body an antidote—a counter poison. If the dose of the drug taken be increased slowly, *pari passu* with the power of the system to elaborate a corresponding dose of the antidote, the toxic effect is prevented. If the taking of the poison become habitual, the production of the counter poison becomes also habitual. If, then, the taking of the drug be suddenly stopped, the elaboration of the antidote does not necessarily cease at the same time, because its production has become a habit. Hence, what we term the withdrawal symptoms, following the disuse of a drug habit, are really symptoms of poisoning by the systemic poison, which, no longer needed to antidote the drug taken, exerts its toxic action upon the body producing it. If this hypothesis be correct, we will see, when the habitual drug is withheld, the symptoms due to the leucomaine; and the treatment of this stage will consist in endeavoring to prevent the formation of this organic alkaloid, and in antidoting its effects. Certainly the most direct antidote will be the drug habitually taken, and hence the gradual withdrawal is better, so far as relieving pain is concerned, than the sudden stoppage. But our experience has been that it is still better to substitute for the habit-drug some other antagonist of the toxic leucomaine.

The study of the phenomena of intestinal sepsis has shown that in the intestinal canal are produced two toxic bodies, known as the atropine alkaloid and the muscarine alkaloid. Whether it is in the intestinal canal or elsewhere that the toxins in narcomania are produced, I know not; but as the trend of professional opinion is setting strongly

toward considering the intestinal canal the laboratory in which are elaborated the toxic principles of uræmia, diabetes, and many other affections, it is at least possible, even probable, that the toxin in these cases of morphinism, alcoholism, etc., are also prepared in the bowels. If this be the case, the treatment of the narcotic habitues should be improved by the use of agents that render the intestinal canal aseptic.

The following case is the only one I have as yet treated on this principle, but its history is in some degree confirmatory of the hypothesis proposed.

A physician, aged forty years, began the use of morphine to relieve asthmatic attacks, and soon became a habitual consumer. He took the drug hypodermatically, up to eight grains a day, in four doses, with a small dose of strychnine nitrate. This use of strychnine was peculiar. In all cases where I have given strychnine to morphinists, the hyperæsthesia has been aggravated and the suffering increased. The night following his admission to my private hospital he had a very severe asthmatic paroxysm, not relieved by aspidospermine or by trinitrin. The next day he took a purgative dose of calomel and magnesia, and the bowels were emptied by a large enema, passed high up through a long tube. This was repeated a number of times during the following week, bringing away large masses of dark, hardened feces, until finally the stools became natural. Calomel and sulphate of magnesia were still given in small doses daily, and an antiseptic drink containing eucalyptol and zinc sulfocarbolate. To prevent the asthmatic seizures a full dose of quinine sulphate was given at bedtime; fifteen grains at first, gradually lessened to seven. I will say here also, that quinine has not as yet proved of any special value in the treatment of morphinism, the hyperæsthesia being unaffected by it, and the tendency to hallucinations increased.

The morphine was reduced rapidly for four days and then discontinued; the strychnine was continued until the fifteenth day and then stopped. No substitute was given, or other medicine except as a placebo. Cold baths were employed from the end of the first week. He did not lose a

night's rest nor a meal, did not keep to his room nor absent himself from the table for a meal ; in fact, the amount of suffering from discontinuing the drug was too trifling to be worth mention. The first day he did without the strychnine he sat about the house "feeling rocky," he said ; but he bathed, ate, smoked, etc., and played cards as usual ; and this trial, trifling as it was, was greater than that which followed the deprivation of the morphine. During the whole time, care was taken to keep all the emunctories, the skin, kidneys and liver in active operation. There is generally with narcomaniacs a decided tendency to sluggish or deficient action of the excretory organs ; and also a deficiency in the supply of the digestive ferments.

Before this patient had discontinued his strychnine he wanted to return to his business, feeling perfectly well and eager for his work. I detained him for another week on account of his asthma, as I desired to see if it would recur when the quinine had been discontinued ; but as far as the morphinism was concerned, he was a well man in two weeks from the day he began treatment.

Men who have taken the drug in but small doses for a short time, and who are as yet of good physique, have broken the habit and returned to their work in two weeks, after an ordeal that tried their utmost powers of endurance. The case I have just described is the first I have known who got well in so short a time with but little suffering. He was a man of good nerve, but deficient in physique ; his muscular system undeveloped, and his digestion weak. I can only attribute the favorable result to the care taken in keeping the alimentary canal in an aseptic condition. I would be much more confident of the permanency of the cure if he were to go to a gymnasium for six months ; get up a little home gymnasium, with Indian clubs and a pulling apparatus, and remove to a locality where he would be free from asthma. For a sound, equably developed body is a good thing to have, and perfect health needs no drugs.

103 STATE STREET, CHICAGO.

ANNUAL REPORT OF WALNUT LODGE HOSPITAL, HARTFORD, CONN.

During the year 1894 fifty patients have been admitted to this hospital. This, with the eight cases under treatment at the beginning of the year, makes fifty-eight persons treated. Fifty-two of these cases were discharged, and one died the second day after admission. The following table represents the class and character of these cases. Many of them were mixed and complex in the causes, symptoms, and progress.

Periodical Inebriates,	20
Constant Inebriates,	12
Dipsomaniacs,	2
Opium Inebriety,	4
Opium and Alcoholic Inebriety,	5
Cocaine Inebriety,	3
Chloral, Ether, Ginger, and other Inebriates,	4
Complex Inebriates, using any narcotic that was most convenient,	6
Spirits used medicinally for insomnia and debility,	2

In all these cases except the last two, there was the characteristic morbid impulse or mania to obtain relief from and by the use of spirits and drugs, under all circumstances. Periodicity is not common, except in alcoholic cases. Other inebriates have no free intervals, but continue the use of the drug constantly. Complex inebriates are cases who at one time use opium to excess, then turn to alcohol, chloral, ether, chloroform, cocaine, and any drug which gives relief. These cases are usually incurables, and go the rounds of asylums, and are recorded as cured of some particular addiction at each place. One such case has been treated in four different asylums, for alcohol, opium, cocaine, and chloral inebriety, and will no doubt continue as an inmate of different asylums as long as he lives. In two cases, spirits had been advised by the physician, one for general debility

with threatened lung trouble, the other for insomnia and nervous prostration. In both the use of spirits had increased to such proportions that they were brought for treatment. The withdrawal of spirits was followed by recovery. Two of the cases of cocaine inebriety began to use cocaine first for nasal catarrh. All three cases were physicians, and two were in special practice; the third was a general practitioner, who began to use cocaine as a tonic when exhausted. In a study of the causes, more attention has been given to exhaustive family histories, and the term heredity has been separated into three divisions. The first, direct heredity, is the appearance in the children of the same diseases and defects as seen in the parents. Second, the indirect heredity, is where the inebriety of a remote ancestor appeared in the grand or great-grandchildren, the members of the families intervening manifesting neurotic defects and degenerations. The collateral heredities are cases where inebriety, epilepsy, hysteria, paranoia, consumption, and other nerve and brain defects have appeared in each generation, apparently alternating and depending on some special favoring causes. The following is the table:

Heredity, Direct, 16	Traumatism, 8
Heredity, Remote, 13	Exhaustion, 4
Heredity, Collateral, 14	Environment and Contagion, . . 3

The term traumatism describes a class of causes that date from shocks and injuries and sudden, severe mental strains, associated with unconsciousness. Some of these cases began to use spirits on recovery from acute inflammation, others commenced after psychical and complex physical shocks. Cases included under the term exhaustion began to use spirits after profound debility and conditions of acute anæmia, also cell and tissue starvation. Environment as a particular and only exciting cause is rare; in the three cases observed it was the most prominent factor. As an exciting cause developing latent tendencies it is common in many cases of heredity. A more exhaustive study of these

cases might have revealed some other causes. It is a fact not recognized, that in a certain number of cases the first symptom is a desire to associate with low people in very bad surroundings, and the use of spirits comes on gradually. The impression is that environments are the causes; in reality, some unknown palsy of the higher brain has begun, and the desire to be with low people in bad surroundings is only a symptom. The inebriety is also a symptom, and imbecility and paralysis are the common sequels.

Of the ages and general conditions of the persons treated, the following tables are presented :

AGE OF PERSONS UNDER TREATMENT.

From 20 to 30 years of age,	11	From 50 to 60 years of age,	6
From 30 to 40 years of age,	25	From 60 to 65 years of age,	1
From 40 to 50 years of age,	15		

SOCIAL CONDITION.

Married and living with wife,	22	Widowers,	5
Married and separated from wife,	11	Single,	20

OCCUPATIONS.

Physicians,	9	Judge,	1
Lawyers,	4	Engineer,	1
Farmers,	3	Hotel-keeper,	1
Bankers,	3	Importers,	2
Clerks,	6	Liverymen,	2
Veterinary Surgeon,	1	Drummers,	3
Manufacturers,	2	Gardener,	1
Teachers,	4	Undertaker,	1
Builders,	2	No occupation,	2
Lumberman,	1	Women :—	
Speculators,	2	Housewives,	2
Druggist,	1	Teacher,	1
Merchants,	2	No occupation,	1

DURATION OF THE INEBRIETY.

Less than 5 years,	6	From 15 to 20 years,	5
From 5 to 10 years,	19	Over 20 years,	4
From 10 to 15 years,	24		

EDUCATION.

Collegiate,	17	Academic,	24
University,	5	Common School,	12

NATIVITY.

Connecticut,	10	Nebraska,	1
New York,	16	Missouri,	2
New Jersey,	5	Wisconsin,	1
Rhode Island,	2	Illinois,	1
Massachusetts,	3	Canada,	2
Pennsylvania,	4	Texas,	1
Vermont,	2	Ireland,	1
Ohio,	4	Maryland,	1
California,	1	District of Columbia,	1

FORMER TREATMENT IN OTHER HOSPITALS.

Received treatment at Keeley Institutes,	26
Treated by other Gold-Cure Specifics,	11
Treated at other Hospitals,	6
Never treated before,	15

The number of relapsed cases from the various specific gold cures is increasing, and the possibility of their recovery seems more difficult than in other cases. Delirium and extreme prostration are common symptoms, and spring up from the slightest exciting causes. Defects of vision and visual hallucinations are also common. The relapses of these cases resemble acute insanity in symptoms and duration.

Of the results of treatment, the following is the approximate record:

Recovered,	18	Benefited,	12
Improved,	23	Died,	1
Unimproved,	5		

Those who are discharged and go back to active life with excellent promise, and who are known to be doing well, are recorded as recovered. In this class are those cases in which local and hygienic causes are prominent. It is believed that the removal of such causes and the restoration to health constitutes, to a large degree, the measure of their curability. The second class, marked improved, are the paroxysmal cases, whose drinking is a distinct neurosis, and who may possibly relapse, after long or short free intervals of sobriety, from causes that are unknown and unantici-

pated. Of the third class, unimproved, two were opium inebriates and one a cocaine-taker. After a short period of treatment, they refused to give up the drug and were discharged. The others were inebriates who went away in a few days without any results from treatment. The third class were termed benefited, but remained so brief a period that, while improved for the time, no positive results could be expected. One died from cerebral hemorrhage the second day after admission.

All institutions for the cure of inebriates are unable to keep the patients long enough to secure a degree of restoration that gives reasonable promise of permanency. The law gives us full power to hold cases four months, while in most cases twelve or eighteen months is far too short a time. All institutions suffer seriously from the difficulty of securing records of restored cases. Persons who recover make unusual efforts to conceal the fact of having been under treatment, and even deny it as an act of disgrace. On the other hand, incurables and relapsed cases become the most bitter detractors and prominent critics and defamers of the institutions. Hence public opinion of the real work in an asylum is often unfair and misleading.

The physiological studies of the past year have been continued with the additional aid of the sphygmograph, and special studies of the action of the heart. Muscular impairments have been studied with a dynamometer, and various tests of the disability of the muscles and senses have been made. The special studies of heredity have been continued with increased interest, and it is expected to publish at an early day some very interesting conclusions. Inquiries of the present condition of cases under treatment before 1885 have been made during the year. The results, so far, of the reported histories of sixty-six cases, show that sixteen are living temperate and well, not having relapsed, and are considered cured; twenty-one died, all relapsed, and death was more or less the result of the relapses; four became insane, and are confined in asylums; ten have become hopeless

inebriates, and fifteen are still drinking at irregular intervals. Most of this number have tried gold-cure and other asylums, with only temporary relief. These figures are reported as very suggestive and encouraging.

The special work of this institution, to combine all the best scientific measures known with the comforts and seclusions of a home and special personal care of each individual case, has been very warmly commended during the past year. The *London Hospital Journal* for December, 1894, and many other medical journals of this country, have published very flattering descriptions of the work of this Hospital. The increased use and value of baths continue to become more prominent every year, and this, with other appliances, brings increased confidence in the permanent restoration of an ever-increasing number of persons, as the years roll around.

ALCOHOL has the power of degenerating nerve-fibres. It is especially an irritant to the pneumogastric nerve and has an especial destructive affinity for that nerve. The children of parents who suffer from alcoholism are, in a tremendous percentage of cases, the victims of consumption. In fact, the children of parents who are even moderately hard drinkers always prove the easy victims of consumption. Furthermore, the records show that hard drinkers themselves are particularly susceptible to consumption, and that alcoholism in a very great percentage of cases leads to consumption. These facts are due to reflex action over the pneumogastric nerves.

A FATHER MATHEW CHAIR.—The Catholic Total Abstinence Union has established a professorship in the Catholic University at Washington, known as the "Father Mathew Chair." The Rev. Thomas Conaty, D.D., has delivered the first of a series of annual lectures on temperance thus secured to the university.

REPORT OF THE MASSACHUSETTS INEBRIATE
HOSPITAL AT FOXBORO, MASS.

This is the only asylum in the world where the problem of the pauper inebriate is being practically solved. The State of Massachusetts has erected fine hospital buildings on a large farm in the country, and now sends the incorrigible and indigent inebriate to this place for restraint and treatment.

The following extracts from the reports of the trustees and physician are most suggestive of the obstacles and struggles of this great pioneer work which will occupy a large share of public attention in the coming years.

It is now about eighteen months since the hospital was opened and the first patient received. In these first months many difficulties have arisen, as was to be expected in trying to start into existence a new institution. During the last year patients have continued to be committed under a mistaken idea of the laws governing the institution and the purpose for which it was founded, though to a less extent than a year ago.

Some are committed by their friends for "punishment," and when, after a short stay in the hospital, they have been, in the opinion of their friends, sufficiently punished, fault is found with the institution because they are not released upon their own request or that of those so committing them. Others are sent there simply that they may be locked up, where they can be kept from being a trouble and a nuisance to their friends; while the fact that the object of the hospital is to treat inebriety, and, in such cases as it is possible to do so, to cure the patient of the disease, is in these cases and many others quite or entirely lost sight of by those sending them, and much objection is raised when it is found that they must submit to the laws governing the hospital and the treatment instituted there.

The hospital is not a penal institution, and consequently is not protected against escapes of the patients by walls or guards about the grounds. There have been, therefore, many escapes ; but they have decreased in number considerably during the year, while the number of voluntary returns of patients who after their escape have found they needed the protection and care of the hospital more than they had realized, has steadily increased.

Such patients as the superintendent believes can be trusted are paroled — that is, given the liberty of the grounds from breakfast until supper, which not merely increases the time that a patient can remain in the open air, and so helps to build up his health and repair the injury done by liquor to his physical system, but this reliance on his honor acts most favorably on his moral and mental condition, and the self-control thus gained assists him to resist the temptation to drink when he is once more thrown upon the world on his release from the hospital.

It is most important that the patients should be kept constantly occupied, for the health of both mind and body and for the establishment or restoration of the habit of industry, which is commonly entirely lacking in them. It has been difficult to devise means of keeping all the patients busy. Some are employed as assistants in the various departments, kitchen, laundry, and so forth, of the hospital. During the warmer months of the year others are employed on the farm ; but for the employment of many in the summer, and of most in the winter, a workshop of some kind was needed. The trustees began a year ago, as stated in the last report, a small workshop, which has since been finished. In this there is, on the lower floor, a carpenter shop, where the repairing for the institution is done, and a paint shop ; on the second floor there is a broom shop. The making of brooms has proved a marked success. The work is light, easily learned, and in one part or another of the process employment can be found for those mentally or physically weak, as well as for the stronger and more able-bodied.

From the paint shop, as a basis, the walls of nearly all the rooms and corridors in the buildings have been painted, and the woodwork, both inside and out, done over by the patients.

As has been stated, it has been found difficult to devise means of employing certain of the inmates. One source of the difficulty has been the unwillingness of the patients to do what is asked of them. There is a considerable number of refractory patients, who will not work unless a parole is given them, but who would escape as soon as paroled. This class is being slowly diminished in number, as they learn to realize that employment does improve their condition physically, mentally, and morally, and helps materially to place them finally in a condition when they may be released from the institution.

A system of gymnastic exercise and baths was introduced last June, and has proved most beneficial in every way to such patients as have taken it, and gradually the number of these has increased and is still increasing. This exercise is under the direction of a well-trained and skilled gymnastic teacher. One of the day rooms has been utilized as a gymnasium, and a garden hose with water that can be graduated to any temperature has to answer for the bathing establishment. These exercises make the mind more alert, train the muscles and the will power over the muscles, and so over the man. By the muscular exercise the effete matter and poisonous accumulations in the body, the results of the prolonged use of alcohol, are thrown off and replaced by new tissues in the body and brain. The bath acts as a most powerful stimulant, especially to the nervous system; indeed, some feel so directly stimulated by the bath that they willingly take the muscular exercise for the sake of the bath which follows. The results obtained from this physical exercise and baths have been most satisfactory. It is hoped that we may be able to have some time in the future a properly constructed gymnasium and bathing establishment.

It should be borne in mind that many of the patients at the hospital are of the worst type of inebriates. Some do

not care to be cured, while nearly all are sent there more or less against their will, and so do not give their active assistance and co-operation in the treatment, which is most necessary in treating successfully all diseases of this class. Many of the men have been already under treatment in other institutions, both public and private, before their commitment to Foxborough, and, indeed, are finally sent to this hospital merely that they may be under legal restraint, and, as already stated, not with any idea on the part of their friends, or of the physicians committing them, that they can be cured.

The superintendent, with the help of the assistant superintendent, has made, this summer, personal inquiries into the condition of all those who have been discharged from the hospital, traveling from one end of the State to the other for this purpose. The results have been gratifying. Of those cases regarding which we have been able to obtain positive knowledge, it has been found that 42.14 per cent. are "doing well," which means, as far as the investigation could determine, that they have been entirely free from inebriety since leaving the hospital; that some 14 per cent. are "improved"; while 43.80 per cent. are left as "unimproved," — all of which is set forth in detail in the report of the superintendent. Inasmuch as the time since the different patients had been released from the hospital varied from two to fourteen months, cases which had been out less than two months not having been considered, it is probable that some of those, now reported to be "doing well," will yet relapse.

Attempts to smuggle liquor into the hospital have been, and are always liable to be, made. The trustees see no reason why the protection afforded by law to the penal institutions in this matter should not be extended to the hospital.

Although there are now in the hospital more patients than at any previous time, the wards are not yet full, and it will be impossible during the coming year to meet the expenses from the board of patients; hence the trustees re-

quest an appropriation for part of the current expenses in 1895.

In the superintendent's report occurs the following : This is the first full or complete year since the opening of the hospital on February 6, 1893.

There were 108 persons in the hospital on October 1, 1893. Since that date there have been 163 admissions. Of these, 153 were by order of commitment from the courts ; of the other 10, 4 were returned from leave of absence granted during the previous year, and 6 from elopement during the same year. There were then 271 cases under care during the year. These 271 cases are represented by 265 persons. One person has been committed twice by order of court within the year, having received his second commitment while out on leave of absence from his first. Two were recommitted while out on leave of absence granted during the present year. Three had been discharged from the hospital during the present year by reason of the expiration of the two years fixed by the law as the maximum period of detention.

As the hospital will not have been open two years until February 6, 1895, no person has been a resident in it for the maximum period. Those who have been discharged by expiration of the maximum or two-year limit are persons who were originally committed to the hospitals for the insane, and transferred to this hospital soon after its opening. In their cases it was the judgment of your board to consider the time spent in the hospitals for the insane as time spent in this hospital, and to discharge them accordingly at the expiration of the two years from the date of their commitment to the hospital for the insane.

During the year 25 were given final discharge, 3 by death while in the hospital, 2 by death while out on leave of absence, 1 by death while on visit to the Massachusetts General Hospital for operation, 9 by transfer to a hospital for the insane, 1 by time limit while out on leave of absence, 5 by time limit while in the hospital, 3 by recommitment, being

at the time out on leave of absence granted within the present year, and 1 by order of court as not being a dipsomaniac.

Of those who eloped or were granted leave of absence during the year, 29 and 107 respectively remained away at the close of the year, as absent, not finally discharged, their maximum time not having expired.

Of the 41 reported Sept. 30, 1893, as absent, not finally discharged, on Sept. 30, 1894, there were still absent, not finally discharged, 8 by elopement and 11 on leave of absence. Of the others, 4 had been returned from leave of absence, 6 from elopement, 2 by recommitment while on leave of absence, 5 had been discharged by time limit while on leave of absence, and 5 while out on elopement.

The daily average of patients was 101.08; the average weekly cost of support per patient was \$8.41+.

There has been no special or epidemic sickness among the patients or employes.

Three patients have died within the year, the causes of death being pulmonary tuberculosis, alcoholic neuritis with delirium tremens, valvular disease of the heart.

Employment has been provided in the usual ways in the various departments, both in and out of doors. No more wage-earners have been employed than are necessary for a proper supervision and performance of the work, which otherwise would fail easily through the frequent changes among the patients, many of whom have no previous training in or taste for the work to which they are assigned. Apart from the laundry, kitchen, and dining-rooms, for some of the more visible results of their work, your attention is called to the painting of the interior walls of the various rooms and halls of the three cottages and dining-room building, which is now completed and has been done solely by the labor of the patients. Great progress has been made in the redressing and varnishing of the ash finish of the buildings.

Your attention is also called to the products of the farm, as shown in an appended list, in which the valuations are made at a wholesale or jobbing price. Except a portion of

the milk, all these products are consumed at the hospital. Some progress is being made in grading the roads about the buildings this fall.

During six or seven months of the year the broom shop has been in operation, under the supervision of a skilled broom-maker, affording occupation for from eighteen to twenty-two men. There is sufficient variety in the various steps of making the broom to afford occupation for the infirm as well as the vigorous, and to preserve the interest of those who are engaged. Thus far the work has proved self-sustaining.

In June last, by action of your board, the services of a skilled teacher of gymnastics were secured, and provision made for the exercise of the patients in classes for physical culture. At the outset only free movements were attempted, later, chest weights were added, also the out-of-door games of medicine ball and basket ball. It is now proposed to add to the variety of the exercises by the use of wands, dumb bells, and horizontal bars. Under the direction of the instructor the exercises and classes have been arranged in a manner adapted to the needs and ability of the young and the old. As an essential part of the exercise, each class at its close is required to take a spray bath at a regulated temperature. About one-sixth part of the patients are unable to take part in the exercise by reason of some serious infirmity or organic disease; as many more refuse to take part for no sufficient reason; others cease taking it after a longer or shorter trial; while some have sufficient exercise by reason of the hours and nature of their work, so about one-half of them take the exercise with regularity. That the physical culture is of positive benefit in the renovation of the diseased tissue is manifest in the cases of many of those who persist. There is evident brightening of facial expression, increased promptness in the working of the mind, greater elasticity of movement, with increased capacity for and interest in work.

Between the 6th of July and the 10th of August of the

present year, an effort was made to obtain reasonably accurate information concerning those who had been discharged from the care of the hospital prior to May 6th, were still absent from the hospital on July 6th, and had been exposed to all the trials and temptations presented in daily life. As indicated, the inquiry was directed towards those who had been discharged from the hospital for two or more months. The purpose of this inquiry was to ascertain how many individuals were unimproved, or drinking as much as ever; how many were improved or drinking less; and how many were doing well, or had been abstinent since leaving the hospital.

In conducting this inquiry little use was made of correspondence, it being thought better to make a personal inquiry in the several towns and cities from which the men had been committed. As it best could be, information was obtained from the town authorities, certifying physicians, police and probation officers, friends and relatives. In very many instances the individual was seen.

Prior to May 6, 1894, from Feb. 6, 1893, the date of the opening of the hospital, a period of fifteen months, there were 248 admissions, of which number 6 were recommitments; therefore, 242 persons were admitted prior to the given date. Of these 242 persons, 88 were remaining in the hospital on May 6, 1894, 63 by continuous residence, 10 by return from leave of absence, *i. e.*, unimproved, and 15 by return from elopement; therefore, 154 persons had gone from the hospital.

For the purpose of the inquiry, 43 of the 154 persons are excluded for the following reasons: 3 had died while in the hospital, 4 had died after leaving the hospital, 7 had been discharged as being insane, 1 had been discharged by order of the court as not being a dipsomaniac, 2 could not be traced, and 26 had eloped. This leaves as subject to the inquiry, 111 persons who had been discharged from treatment prior to May 6, 1894, and were still absent from the hospital on that date. Of these, 12 were returned to the hospital between May 6th and July 6, 1894, as relapsed or unim-

proved cases, while 99 continued absent on July 6, 1894, two months after the date of discharge of the last person under consideration. If to these 111 persons are added the 10 relapsed and returned prior to May 6th, 121 is obtained as the whole number under consideration.

Of these 121 persons, it was ascertained that on July 6, 1894, two months after the discharge of the last person under consideration, 51 were regarded as doing well or abstinent, 17 as improved or drinking less, and 53 as unimproved or drinking as much as ever. In percentages, 42.14+ per cent. as doing well, 14.04+ per cent. as improved and 43.80+ as unimproved.

Incidentally it was learned that, of those who had gone from the hospital prior to May 6, 1894, whether by elopement or regular discharge, 2 are in the Massachusetts Reformatory, 5 are or have been in the House of Industry at Deer Island, and 7 are or have been in a house of correction. Some were sentenced for crime, more for drunkenness.

I recommend for your consideration an enlargement of the present workshop building. Several times the present number of men could be under the direction of the broom-maker, provided there was sufficient floor space. This additional provision for workroom is particularly needed for the winter, when the usual out-of-door employments cease.

DIMINISHING CONVICTIONS FOR DRUNKENNESS IN ENGLAND.—For the third year in succession there is shown a very notable diminution in the number of offenses in which drunkenness is involved. The total of 1893 was 153,072; for 1892 it was 159,003; for 1891, 168,999; and for 1890, 173,036. The decrease in the number of convictions since 1890 is thus seen to be close upon 20,000, or about 11½ per cent. of the total as it then stood. Moreover, in the meantime, the estimated increase in the population amounted to nearly 3½ per cent., so that the reduction of drunkenness in proportion to the population is even greater than that.

MEDICAL INSTRUCTION OF INEBRIETY IN
COLLEGES.*

BY T. D. CROTHERS, M.D., HARTFORD, CONN.

The diseases and injuries which are directly or indirectly traceable to the use of spirits and narcotic drugs, if not increasing, are clearly becoming more prominent every year. Practical physicians, engaged either in general or special practice, assert positively, that alcohol and narcotics are very common causes and always serious complications in most of the diseases they are called to treat. Medical men with hospital and large general practice have estimated that at least twenty per cent. of all cases are suffering from the poison of alcohol and other narcotics. Many of these cases are so-called moderate drinkers, or use spirits at long intervals, or take narcotics irregularly for various purposes. A certain class of cases who drink excessively come for treatment, and the disorders from which they suffer are clearly traceable to the spirits used. Another class have complex disturbances, not so clearly due to spirits, yet recover quickly from the withdrawal of spirits and narcotics. A third class are well-marked inebriates, who appeal constantly to the profession for help, and receive the stereotyped advice to "stop drinking." There is probably not a living physician of any class or school, who has not been called for counsel and help in cases of moderate or excessive drinking.

This is increasing with every advance of scientific knowledge. The degenerations which follow from the use of alcohol, and the disease of inebriety in which the craze for spirits is a symptom, are becoming more and more a recognized fact in practical medicine. Busy physicians find clinically that alcohol is the very genius of degeneration when

* Read before the American Association for the Study and Cure of Inebriety, at New York city.

used as a beverage and continuously. Also that the drink paroxysm and morbid impulse to procure spirits at all hazards, is something more than a moral state or a weak will power. In some vague uncertain way the possibility of disease may be recognized, but how to study and what means to use in the treatment are practically unknown. The text books of medicine give little or no information, and the physician is obliged to turn to moral and ethical lines of treatment. He gives lectures, warnings, appeals, and threats, and possibly placebos, or he may administer secretly remedies to cause nausea, or give narcotics to check the morbid impulses. By these means, he expects to rouse up the weak will, or produce disgust for spirits, and thus give new power to abstain for the future; or by checking the drink impulse by narcotics destroy it. These means fail, and not unfrequently the use of morphine beginning in a prescription ends in its addiction. Chloral, cocaine, and other drugs begun in this way, are equally disastrous. This failure of the family physician to relieve or even to check the inebriety only for a short time, opens the door for all sorts of quack remedies, and charlatan schemes. The recent wild wave of gold cure specifics, with its boastful pretensions, would never have been possible had the physical nature of inebriety been recognized by the family physician and proper treatment given. Thousands of cases in despair of any better means for relief have taken these secret remedies, and received temporary relief, only to realize later that they were more incurable and the drink craze more difficult to control. Thoughtful men in the profession recognize a field of practical work in the scientific study and treatment of the inebriate, but suppose it confined to specialists. In reality, the inebriate is more curable in the early stages, at home under the direction of the family physician. The prevention of inebriety can only be accomplished here, and as in other diseases when the case is neglected until chronic stages come on, the possibility of cure becomes more remote. The use of alcohol alone in a previously healthy person is followed by poisoning with cell and

nerve starvation and central exhaustion. The use of alcohol in an unknown proportion of cases is from the beginning a symptom of derangement and exhaustion, a predisposition, or a demand for relief from some organic suffering. In all these cases poisoning, starvation, and exhaustion are present. Derangements of nutrition, growth, development, and environment, associated with inherited or acquired defects, appear in every case. These are physical facts, the knowledge of which is absolutely essential to the rational treatment. The assertion has been made by reliable authorities that one-tenth of the male population use spirits as a beverage, either in moderation or excess. At least half of this number appeal to medical men for help from disorders due directly or indirectly to the use of spirits. The chronic cases from the lower walks of life, who are inebriates, constitute a class who are ever appealing for medical assistance. Another class higher up and actively engaged in the world's work, yet suffering from the effects of spirits, mutely turn to the family physician for help, and both classes fail, the physician is unable to give relief.

He is unacquainted with this malady; he cannot understand the condition of these poor victims who are whirled rapidly down the road to dissolution by laws and forces that are largely unknown. The physical study of inebriety has reached a point where the facts are sufficiently clear and established to make it possible to teach authoritatively the conditions, causes, and natural progress of inebriety, and to point out certain general therapeutic principles available and practical in its successful treatment. From this study comes the clearest evidence that a large proportion of all inebriates are curable in the early stages, through the family physician's care and wise counsel. His knowledge of the environment and physiological conditions of the patient's life and living, enable him to use means and remedies for cure with very great certainty. The possibility of prevention and cure in the early stages along these lines are fully equal to that of any other disease, when used by the intelligent medical man.

The time has come for a public recognition of this need by the medical colleges of the country. The students who go out without some idea of inebriety from a medical point of view, are unable to treat or counsel wisely the first cases they are called on for help. While they may not be any more incompetent than other neighboring physicians to treat such cases, they are clearly without capacity and knowledge to render assistance that would give them a permanent reputation for the future. The drinking man who sends for the young physician because he is a stranger, hoping for some relief which the family physician has failed to give, is disappointed. The new physician has less knowledge than the elderly man, although he has recently graduated at the head of his class. Had he been taught some general facts of inebriety, it would have been the opening door for a successful practice in the future. There are vast numbers of men and women who are literally supporting armies of quacks and charlatans, simply because the medical men are unacquainted and unable to treat their disorders. The progress of medical science and wider range of instruction given in colleges are slowly and steadily reducing the ranks of these chronic cases. The inebriates constitute the largest class of these defectives, and the few pioneer students who are pointing out the physical side of these cases and the new realm of practice, appeal to medical colleges to instruct its students along this new line of cure and prevention. Every graduating class should have four or five lectures on the general facts which are prominent in the causation and progress of inebriety. This will enable them to not only study these cases, but act intelligently when called for counsel and advice. It is such knowledge as this that will help solve the drink problem and raise its present treatment from the realm of quackery into the field of exact science.

An eminent man in a recent speech said, "I despair of any great progress in this drink question until medical men shall take up this matter and teach us the facts and their meaning." To this I add that the time and literature and magnitude of the subject call for instruction from our med-

ical colleges. There is a demand that young medical men be equipped with some knowledge of the most numerous cases they will be called on to treat in many circles of life. The theories and delusions concerning inebriety, repeated in every community with the assurance of being positive facts, fail when tested at the bar of accurate inquiry. The supposed popular knowledge is ignorance, and the real facts will appear only from careful examination by medical men. It is from a knowledge of the phenomena of this drink problem only that means for cure and relief can be ascertained. Medical instruction of students along this new line is a need becoming more apparent every day.

ALCOHOL IN DISEASES.

In writing to the *Physician and Surgeon*, Dr. Bryan of Detroit writes thus on the use of alcohol in diphtheria :

“It is my belief that it is in diphtheria that the most dire results are to be observed. In that disease the vast majority of cases die by asthenia, or else by sudden failure of the heart. To what is this sudden cardiac paralysis due? The elucidation is as follows: In the grave cases there is almost invariably a subnormal temperature, together with great muscular prostration. Also it is a physiological fact that a decrease of the temperature slows nervous conduction. As the system is made colder the nervous force flows slower and slower. In diphtheria the heart muscle is very weak, the temperature falls, the lessened nervous energy but feebly animates the muscular fibres, and so actual paralysis ensues, death closing the scene almost instantaneously. Now, in such a state of imminent danger, brought about by such causes, what could be worse than to administer an agent which notably reduces temperature, and at the same time enfeebles muscular power? May I add, what would be the remedy in such a condition? and I answer, *External heat freely applied to the whole surface of the body.* This will prevent the cardiac paralysis whenever it is preventable.”

Abstracts and Reviews.

ENGLISH INEBRIATE HOSPITALS.

Our readers will remember that for fourteen years the English Government has had an inspector who visits all inebriate retreats and asylums and makes a yearly report. We publish the summary of last year's report.

The fourteenth Report of the Inspector of Retreats, under the Inebriates' Acts, 1879 and 1888, for the year 1893, states:

With regard to the general condition of these establishments, there is no fault to find, as a rule, and the health of the patients has been very satisfactory, on the whole. No death is recorded.

There has again been a slight increase in the total number of patients admitted to the various retreats during the year. In 1891 and 1892 the admissions were 115 and 124 respectively, but in 1893 the number rose to 129.

In answer to an invitation the licensees of a number of retreats have furnished observations as to the working of the Acts and the result of the treatment.

"Fallowfield.—The Manchester Retreat for Inebriate Women was opened July 24, 1890, in accordance with the provisions of the Inebriates' Acts of 1879-88. These Acts encourage the opening of retreats either for male or female inebriates, to be conducted only by licensed managers, and subject to the approval and open always to the visits of an inspector appointed by the Crown. In fact, the law regards the treatment of habitual drunkards as somewhat analogous to that of lunatics, viewing their malady as a physical disease. And such it unquestionably is. But it is a moral disease also, which needs moral as well as physical remedies, and the successful cure of inebriety will depend on the care and skill with which these moral and spiritual remedies are applied by the

managers and committees of retreats. The law, however, concerning the detention of inebriates differs at present from the lunacy laws in two important particulars. In the first place, it makes no provision for the support of retreats, except from the payment of inmates. The attempt, therefore, to rescue poorer persons and wean them from inebriety, is wholly left to private benevolence. Now this has from the first been a prominent aim of the promoters of the Manchester Retreat. The Grove receives two classes of patients. One class consists of women of a certain social position, who pay readily for their maintenance. These live apart in the better rooms, and are encouraged to occupy themselves in their favorite pursuits, whether drawing, or painting, or the art of the needle. But a larger number are working women, who pay at lower rates, according to their means, or even nothing; they employ themselves in the necessary work of the household. As far as possible the retreat is made self-supporting by means of the work and the payments of the inmates. But the admission of poorer women — sometimes gratis, and at the suggestion of the magistrate before whom they have been brought for trial, and as an alternative to the gaol — makes the maintenance of the Grove dependent in part upon the generosity of subscribers.

“In the second place, the Inebriates’ Acts give no power to anyone to commit a patient to a retreat without the patient’s own desire. They may be committed to gaol for being drunk and disorderly, and are so committed for short periods hundreds of times over, to the mockery of justice and to the vast expense of the nation, but absolutely without any good result. In entering a retreat, however, everything is left to the inebriate. Upon being certified to be an inebriate by two witnesses (who must neither be managers of a retreat nor immediate relations of the patient), he or she may make application to two justices of the peace, and so obtain admission. Once admitted, indeed, the patient is compelled to remain for a whole year. But the mode of obtaining admission is so cumbrous, and leaves so much to

the perverse and capricious will of the drunkard, that in practice we find very few applicants proceed so far as to gain admission, and precisely the most distressing cases are those for whom the law provides no help.

“It is certain that the number of habitual drunkards of both sexes in the kingdom is so large as to constitute not only a grave scandal, but a serious burden upon the community, and, above all, a frightful source of misery to many thousands of households. It is estimated that there are at this moment 6,000 inebriate women in prison — not to speak of men similarly detained, nor of the crowds of both sexes whom drink has brought either to the workhouse or to the asylum, and quite apart from the far larger number of habitual drunkards outside of such places, who are free to indulge their fatal craving and to be the daily and hourly scourge of their homes.

“In the meantime, in spite of the difficulties caused by the insufficiency of the Acts on the one hand and by the prevalence of temptations on the other, the work of the Manchester Retreat has gone steadily on. Of the eight retreats at this moment licensed under the Act, the Grove is considerably the largest. It is certainly second to none in pleasantness of surroundings (an important element in the treatment of inebriates) and in efficiency of management. It is licensed for twenty-five patients. We are ready to confess that nearly half of those who leave us apparently cured do relapse. But amid such temptations as surround them this is scarcely strange, nor can we forbear reflecting upon the criminal folly of husbands, who, when they bring their wives to us, assure us that they would do anything in the world for their recovery, and then, when the wife goes back again a changed woman, refuse to become abstainers themselves, or to assist the wife’s resolution by clearing the drink out of the house.”

“Rickmansworth.— There can be no doubt of the advisability of some more satisfactory method of dealing with criminal inebriates. The present police-court procedure in connection with this class has proved an utter failure from

every standpoint. Experience has shown abundantly that little or no benefit accrues from a short punitive confinement in prison, or from short periods of residence in insane asylums. The desire for liquor is only increased by temporary seclusion, and the prisoners on release soon fall easy victims to their previous habits. Of late the repeated expressions of opinion from magistrates and parochial boards have added force to the long-recognized fact of their inability to cope with the condition, and of the urgent need for the establishment of suitable public retreats for the reception and care of such cases."

"Twickenham.—The number of patients taking advantage of the Act here is about one-tenth of the total admissions, and this notwithstanding that we try when consulted to get the patients to come under the Act. Doubtless this will not be the case when the mode of signing before the justice is simplified. Again, there are a very large number of inquiries from patients and their friends, who eventually fail to enter any retreat at all, and these cases will be met when measures of compulsion under certain circumstances are in force, and when retreats are established wherein patients with limited means can be received. Of our admissions, half of them are in the married state and half unmarried, and the majority are hard workers, and not the lazy drones many people would have us believe. The most important fact to which attention should be called is the number of occasions in which the inebriate patient is the victim of chronic physical disease. Fully 50 per cent. of our admissions are suffering from disease other than and in addition to the liquor habit, cases of serious exhausting disease — phthisis, rheumatism, locomotor ataxia, neuritis, and other diseases are frequently met with, and it is by no means easy to appraise precisely the position of such affection in the causation of the patient's condition."

UNUSUAL CASE OF MORPHINE INEBRIETY.

Dr. McGillivray of Ottawa, Canada, reports the following case in the *Massachusetts Medical Journal*:

I was called to see a man in one of our hotels who had symptoms of delirium tremens. He was thirty-seven years of age, stout, muscular, and plethoric, and of intemperate habits, had resided in New York city for the last six years, where he practiced his profession as attorney-at-law. About the commencement of January, 1885, he had an abscess in the thigh from which he suffered severe and continuous pain, and in order to allay his agonies and induce sleep, he was given by his physician a drachm of laudanum each night, beginning of course, in smaller doses and a similar quantity during the day. He continued that prescription for a period of three months, until every symptom of his complaint had entirely disappeared; he then discontinued it, but much to his discomfort, becoming nervous, irritable, and wakeful, and subject occasionally to intolerable tremors. He was forced to resume his habit. He made repeated efforts to master his desires, and stop the use of opium in any form, but without avail, and finding it impossible to do without it, he was obliged to resume his accustomed draughts, gradually increasing the dose from time to time, as nature seemed to suggest and require it, until he had the daily habit of taking astonishingly enormous quantities. In order to satiate and appease his abnormal appetite, he found it necessary to take half a drachm of sulphate of morphia daily, some days more and some days less.

He took as much as a drachm and a half in thirty hours, and found no alarming effects to follow; he frequently took three ounces of laudanum at one gulp, and repeated the same dose within twenty-four hours, with the only effect of causing snatches of sleep lasting from one to four hours. He had always had a good appetite for food, and enjoyed comparatively good health. Abstinence from opiates was latterly followed by troublesome diarrhoea, associated with the other symptoms already named, and when sleep occurred

it was disturbed by frightful dreams. He was an inveterate smoker and a hard drinker, almost incessantly reveling in debauchery and profligacy; the more whisky he drank the more morphia he required to take. Until about a year ago he used laudanum almost exclusively, but to avoid the inconvenience arising from carrying about him such large quantities as he required to use, he betook himself to the use of morphia, of which he kept abundance on hand, but he took laudanum occasionally.

One evening after he had recovered from his illness at about seven o'clock, while I was present with him in his room, in order to assure me of the capability of his system to resist the effects of opium, an experiment I was very reluctant to witness, he opened a parcel containing twelve small bottles, each of which contained a drachm of sulphate of morphia, he took up one of these bottles and emptied its whole contents into a tumbler which he had half filled with whisky, stirred the mixture well and swallowed the terrible dose at one gulp (a quantity sufficient to destroy twenty or more lives), and in the course of fifteen or twenty minutes after drank down at one draught four ounces of laudanum, which he had procured in a drug store close by.

An hour after performing the dangerous experiment he went to spend the evening in the theatre, where he enjoyed the drama with all due complacency. I visited him at his rooms in the hotel at eleven o'clock the same evening, and saw him take nearly a fourth of a drachm of morphia in a glass of whisky, before retiring. Fearing that the experiment might have proved to much for him during the night I called to see him at an early hour the following morning, and to my utter astonishment found him wideawake, after having passed a quiet night, and apparently suffering from no ill effects of the poison. He asked for more whisky and morphia. I strongly remonstrated and cautioned him against the results sure sooner or later to follow such enormous doses of poison, and such flagrant abuse of his constitution. His only reply was, "I am used to it and there is no danger."

Satisfied and easy in his own mind that there was no danger, and that the seeming immunity he enjoyed in the past, he would still enjoy in the future, he was willing and determined to pursue his dangerous habits. Two days after he went home to his family in New York and was gone nearly four months; at the end of that time he returned to this city with the intention of taking up his residence, and practicing his profession; when he arrived here he consulted me for urethral stricture which caused him intense pain, and to allay it he was obliged to use opiates in larger quantities.

He was now feeble and exhausted, worn and emaciated, apparently fast sinking a victim to his evil habits, of the dangers attending which he was now fully convinced. He had been addicted to this destructive vice of opium-eating for nearly three years, and it had gone on increasing from day to day, until it had acquired its alarming and incredible magnitude. With the perfect consciousness at last that he was destroying himself, and with every desire to struggle against the insatiable cravings of his diseased appetite, he found it utterly impossible to offer the slightest opposition to them. In vain did he try to resist the baneful temptation. His love for ardent spirits was so strong, his appetite for opium so uncontrollable, that he must still indulge in the use of these insidious poisons which he knew were undermining his system, slowly but surely, and as an inevitable consequence nature yielded to their pernicious influence; an attack of delirium tremens supervened, and death closed his sad career.

THE report of the N. H. Railroad commissioners shows that 90 per cent. of the deaths caused by railroads last year were due to intoxicating liquors. On ten of the twenty-four persons killed were found bottles of liquor, while many of the others bore marks of drinking and were likely intoxicated at the time of death.

DUNGLISON'S DICTIONARY OF MEDICAL SCIENCE. Containing a full explanation of the various subjects and terms of anatomy, physiology, medical chemistry, pharmacy, pharmacology, therapeutics, medicine, hygiene, dietetics, pathology, surgery, ophthalmology, otology, laryngology, dermatology, gynecology, obstetrics, pediatrics, bacteriology, medical jurisprudence, and dentistry, etc. By **ROBLEY DUNGLISON, M.D., LL.D.**, Late Professor of the Institutes of Medicine in the Jefferson Medical College of Philadelphia. New (21st) edition, thoroughly revised and greatly enlarged, with the pronunciation, accentuation, and derivation of the terms. By **RICHARD J. DUNGLISON, A.M., M.D.** In one imperial octavo volume of 1,191 pages. Cloth, \$7.00; leather, \$8.00. Lea Brothers & Co., Publishers, 706, 708, and 710 Sansom street, Philadelphia.

This work has been before the medical public over forty years, and is yet the standard authority. In this time twenty-one different editions have appeared, and each one has been a larger, more complete work. Thus by the process of evolution and growth it has become the great lexicon of medical science. Some idea of the book is apparent from the fact that forty thousand new terms, tables, and definitions are now published for the first time, and many of the definitions are encyclopedic, giving a concise review of the symptomatology and treatment of many diseases. The correct pronunciation and derivation of all words will be of inestimable value to every medical man. Such a work becomes an essential aid to all practitioners, going beyond the journals and text-books, and constituting the foundation of all accurate knowledge of medicine. The new Dunglison's is fully up to the very front ranks of the present, and is equally valuable and indispensable to-day, as it was in our student days of long ago. Every office and every library should have a new copy of our old friend of long ago. The science of healing has gone on, and the new Dunglison gives permanent record of this advance, matured and perfected by the experience of nearly

half a century. It stands out alone, unrivaled as the great work of every medical library.

THE NATIONAL DISPENSATORY. Containing the natural history, chemistry, pharmacy, actions and uses of medicines, including those recognized in the pharmacopœias of the United States, Great Britain, and Germany, with numerous references to the French codex. By ALFRED STILLÉ, M.D., LL.D., Professor of the Theory and Practice of Medicine in the University of Pennsylvania; JOHN M. MAISCH, Phar.D., Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy, Secretary to the American Pharmaceutical Association; CHARLES CASPARI, JR., Ph.G., Professor of Pharmacy in the College of Pharmacy, Baltimore; and HENRY C. C. MAISCH, Ph.G., Ph.D. New (fifth) edition, thoroughly revised in accordance with the new United States Pharmacopœia (seventh decennial revision). In one magnificent imperial octavo volume of 1,910 pages, with 320 engravings. Cloth, \$7.25; leather, \$8.00. Lea Brothers & Co., Publishers, 706, 708, and 710 Sansom street, Philadelphia.

We take great pleasure in calling attention to this work for its practical value in every medical library. It is not only a guide, but a most reliable work of reference on all questions of drugs and pharmacy. In small hospitals and physicians' offices back from large cities, such a work is of the greatest practical value in preparing medicines and giving facts of their uses not found in other works of materia medica. The special value of this work is in its pharmaceutical and chemical facts, and formulas, with tables, and also records of many of the new synthetic remedies which are attracting so much attention; also tables and tests and methods of analysis. The action of drugs and the treatment of special diseases are presented in a very graphic way. Like a dictionary, it has a permanent value, and is the constant source to which every practical physician

will turn daily for facts and instruction. Such works are libraries in themselves, and working tools of the science of medicine. This Dispensatory has become national in character and popularity, and is heartily recommended by all authorities for its accuracy and completeness.

THOUGHTS ON RELIGION. By **GEORGE JOHN ROMANES**. Edited by **CHARLES GORE, M.A.**, Canon of Westminster. Chicago: The Open Court Publishing Company. 1895. Pages, 184. Price, \$1.25.

Prof. George John Romanes left some unfinished notes on religion which were handed, at his request, to Mr. Charles Gore, the Canon of Westminster, a friend of the late scientist and a representative of ecclesiastical dogmatism. Mr. Gore decided to publish these notes together with his own editorial comments and two unpublished essays on "The Influence of Science upon Religion," written by Romanes in 1889, and they now lie before us bearing the title "Thoughts on Religion."

The book will create a sensation, for it shows that the late scientist was possessed of an eagerness to believe, but was still unable to overcome the objections made by science. He showed, nevertheless, an increasing tendency toward belief, and we are informed by the editor, Mr. Gore, that Professor Romanes "returned to that full, deliberate communion with the Church of Jesus Christ which he had for so many years been conscientiously compelled to forego."

Whatever opinion we may have, the book is an obvious evidence of the importance of the religious problem. An article on the late Professor Romanes' thoughts on religion, setting forth the lesson which they teach, will appear in the April number of *The Monist* from the pen of its editor, Dr. Paul Carus.

SLEEP AND DREAMS. By **DR. F. SCHALZ**, Director of the Bremen Insane Asylum, and **DR. H. M. JEWETT**, of Danvers Insane Asylum. Funk & Wagnalls Company, New York city. 1893.

This little work is a popular scientific dissertation on sleep and dreams, and the analogy of insanity to these phenomena. The causes of sleep are presented in one chapter, and dreams, their meaning and significance, fill up the second part of the work. Sleeplessness and its prevention is one of the best chapters, and describes in a clear way the common-sense rules to overcome insomnia. This very difficult subject is presented in a very clear, graphic way, and the work is an excellent contribution that will be read with interest and satisfaction by all.

The Buffalo Medical Journal has passed the half-century milestone of existence, and is a typical example of the survival of the fittest. With Dr. Potter at the helm, one can safely predict another half century, free from rocks and storms, and replete with strong helpful influences for science and humanity.

The *Voice* has won a commanding place in the temperance world, and its utterances are listened to with careful attention. Send to Funk & Wagnals of New York city for a copy.

The Medico-Legal Society announces a medico-legal congress at New York city in August. A very extensive program embracing many important subjects is announced. A sub-committee on the Legal Responsibility of the Inebriate, under the care of Dr. Crothers as chairman, will present this subject. A very general invitation is given to all persons interested in this topic to send their names to Clark Bell, Esq., Secretary, 57 Broadway, New York city.

No other journal brings a greater variety of clearly written scientific papers regularly to the reader than the *Popular Science Monthly*. The issue for the past few months has contained some excellent papers on mental diseases and psychological studies. It has come to be an essential for every thinking man to keep in touch with this journal.

We find the *Scientific American*, published by Munn & Co. of New York city, a paper that is read thoroughly, and whose coming is watched for with great interest. Its records of the march of science are more fascinating than fiction.

The Homiletic Review tells the story of theologic thought, and the direction of the great themes of the world to come. Funk & Wagnals are the publishers.

Dr. Lyman of the State Insane Asylum at Cleveland, Ohio, writes this in his last report :

“I cannot refrain from saying a word regarding the whisky and opium habits. Here are cases which deserve something more than reprimand and censure. In many cases drunkenness is a real result of real disease or diseased condition. The patient is practically helpless, unless the State, in its beneficence, reaches out and tenderly directs him to a haven of safety. He is like the shipwrecked mariner who has not a single spar to which he may cling. Our good, philanthropic people pass him by and dismiss the subject with the thought. We should have hospitals for the treatment of this class of unfortunates, where the very best medical skill could be procured, and the poor wretch treated for his disease and not trampled upon and ostracized as a willful criminal. Many cases are admitted into and treated in our State hospitals for the insane because there seems to be no other place for them ; but it is not right that they should be so placed, nor is it justice to the insane, for whom every spare room is needed. We simply desire to call attention to the fact that so far there has been no disposition on the part of the State to take custodial and curative care of these distressing cases, and we hope that some philanthropist may in our next legislature take the initiative in this commendable work.”

Editorial.

DELUSIONAL INEBRIATES.

There is a certain class of men belonging to the middle and upper circles of social and business life, who early in their lives have found that alcohol in small doses produced very pleasant effects. The exhilaration and apparent physical and mental vigor following its use has made a profound impression of its value. Later they use spirits regularly, and claim that it brings a certain nerve rest, and power of adaptability and enjoyment of the surroundings not possible otherwise. Later in their history, the early exhilaration grows shorter, and periods of heaviness ending in stupor and sleep follow. The common depression and reaction from the narcotism of alcohol is not prominent or noticeable, and is never recognized as due to spirits, but is always referred to other causes.

Excesses from the use of spirits are not followed by the common symptoms, but appear in complex neuralgias and so-called rheumatisms, and transient acute inflammations, together with functional disturbances. The mental exaltation turns into egotism and delusions of strength, and power of control. The constant dulling of the senses by the use of alcohol removes all warnings of danger, and increases the delusion of capacity and of power and judgment, and full realization of his condition of mind and body. The value of spirits, and its usefulness in all conditions of life are defended with enthusiasm and vigor. Literally, he has a certain predisposition for the narcotics of alcohols, the effects of which are accumulative and masked. He drinks regularly in moderation, and sometimes to excess, carries on the active duties of life with moderate or average success, and is a warm defender of alcohol, and a bitter critic of in-

ebriates and total abstainers. If he is a brain-worker, his delusions of self-control will grow into suspicions and doubts of others. Delusions of persecution, of intrigue, of dishonesty, and deception and neglect will follow. His former integrity and moral character changes, he is less honest and more unstable in his conceptions of right and wrong. These may be concealed and only known to his intimate associates. Often acute brain disease terminates the case, or some sudden collapse from heart failure, cerebral hemorrhage, or acute inflammations of the lungs or other organs. The muscle-workers of this class always suffer from rheumatism, neuritis, and chronic degenerative neuroses, and are always the first to die in epidemics. Both muscle and brain workers in this class may live the average period of life, and continue the daily use of spirits. But the large majority will die early, and all will suffer from functional and psychical paralysis. Alcohol has obscured and paralyzed the higher brain and sensory activities, and the man has been cut off from normal relationship to the world, and correct knowledge of himself. Such men appear as defenders of the use of alcohol as a beverage. Such men doubt the question of disease, and believe in free will, and full power of control at all times. Such men are always dangerous unsound theorists, and literally paranoid delusional inebriates.

When such cases appear as patients in inebriate asylums their moral paralysis is unmistakable. They are oblivious to reason, sympathy, or any other rational motives or rules of conduct. Nothing but force, fear, and appeals to the lowest impulses have any influence. They are uncertain and reckless of every consideration of normal life and living. The psychical paralysis is strangely blended with intelligence and many misleading traits of character, which are always a source of wonderment. A large class of these cases are only known as moderate drinkers, and their degeneracy and real condition is seldom recognized. When such cases come into places of trust and prominence, or have new duties and new responsibilities put upon them, they manifest weakness and

instability that is not understood. They also display very faulty reason, with childishness or absence of all rational motives, and very low grade of principle. In the future these cases will be studied, and then we shall be able to explain the strange conduct and crime, and unusual acts of men who are only known as moderate drinkers.

OPIUM DELUSIONS.

Recently some very marked examples of delusions in opium cases have been noted in the daily press. A prominent woman telephoned the police station that a murder was committed in the house adjoining, and urged them to come at once. The patrol wagon with officers reached the house in a few moments, and found no one stirring; two servants were working before an open window, and the lady of the house was asleep. The accuser described, with great minuteness of detail, two women fighting, and a man rushing in and stabbing one, then disappearing. This was seen from her window. When told that she was mistaken, she became very angry and positive of her impressions. The two servants working before the open window formed the basis of her delusion. Later it was found that she was using opium daily.

A well-dressed man, with a bruised face and some head wounds, appeared at the police station and gave a minute detail of an assault by a leading merchant, who attempted to kill him. The motive was supposed to be political, to prevent him from securing a nomination the other wished. All the circumstances of meeting, and exchange of blows, and violent language, and his escape by jumping over some rocks near the roadside, were given with graphic exactness. An examination proved that the merchant was in a distant city at the time, and no assault had been committed by any one. The supposed victim was an opium-taker, and had no doubt jumped over a rocky ledge, bruising himself. He was on good terms with the merchant, and never had quarreled in any way.

The following case was submitted to me for examination and opinion. A widow of wealth, culture, and the highest respectability, charged her physician, an eminent man, with committing a criminal assault. The physician was astonished. This lady was supposed to be in excellent health, and had not called on him professionally for years. He was a friend of her husband, and only called at long intervals, and usually on some mission of charity.

The alleged offense was affirmed to have been committed at night, and the lady was so overwhelmed that she remained in bed for two days. A week later she confided to her clergyman, and he called in a lawyer, and a meeting was held. The doctor was emphatic in his denial, and the lady was positive in her convictions. It appeared that the doctor had called that evening, about seven o'clock, and remained a short time. He came to announce the death of a distant relative of the lady in a foreign country, who was traveling with his son. Later the doctor accompanied his wife to the theater, and remained at home all that night. The lady's statement was that the assault was committed late at night, then she changed and said it was early in the evening, and that she was so much confused that the exact time was not clear. The very unusual feature was the apparent unimpeachable integrity of both parties. There had been a feeling of profound respect between them, and no intimacy or familiarity. The physician seldom called except on some errand, and the lady was apparently strong and actively engaged in charity and the management of her property.

In my interview with this lady, there was no appearance of vindictive anger, only deep sorrow, and her statement was clear and natural in all its details. The pupils of the eyes had a suspicious contraction, and she spoke of some neuralgia, for which she had used McMunn's elixir. She acknowledged having used this drug the day of the assault, and in larger quantities for several days after. I found from the druggist that she used large quantities of this drug at different times, although never seemingly stupid from the use of

it. I concluded that if this was an opium delusion, she would have another attack, so the decision was postponed. Ten weeks later, she asserted that the same physician had visited her room at midnight and assaulted her the second time. The physician at the time was on the ocean with his wife, going to Bermuda, having sailed two days before the alleged act was committed. This woman was declared an opium-eater and went under treatment, from which she recovered, and no return of this delusion followed.

Fortunately these delusions are not very common, and are so often mixed up with circumstances that indicate their real condition as not to be mistaken.

PSYCHICAL HISTORY OF THE DRINK PROBLEM.

We have repeatedly called attention to a certain class of facts, which seem to prove that inebriety and the consumption of alcohol have a peculiar wave-like movement, rising and falling like the action of the tides, under the influence of certain psychical laws unknown at present. The prevalence of inebriety in small circles, where the history has been recorded for some years, brings out this fact in many ways. The following editorial from the *Temperance Record* indicates the same general fact in relation to the consumption of various alcoholic and non-alcoholic beverages. Its significance and value in a study of this very remarkable field cannot be over estimated.

Sir Frederick Hunt, in a motion before the British Parliament, "showed the consumption from 1861 up to the latest date, of tea, coffee, cocoa, and chicory, of alcoholic beverages, and of tobacco, compared with the increase of population," has just been issued, and is a most interesting study. The line on the diagrams showing the consumption of non-alcoholic beverages is almost uninterruptedly upward. In 1861 the consumption of non-alcoholic beverages (tea, coffee, cocoa, and chicory) was 127,000,000 lbs. In 1862 it fell to

119,000,000 lbs. From 1862 there is a regular ascent till 1867, when the consumption was 159,000,000 lbs. In the following year there was a drop to 153,000,000 lbs., and thence a regular ascent till in 1879 it was 217,000,000 lbs. Next year it was 214,000,000 lbs., and then followed a gradual ascent till 241,000,000 lbs. was reached in 1885. A temporary drop of 4,000,000 lbs. was followed by a rise to 246,000,000 lbs. in 1888. A drop of 3,000,000 lbs. next year was followed by a rise to 267,000,000 lbs. in 1892, and then came a drop of 1,000,000 lbs. in 1893, the last year included in the return. Between the highest and lowest figures embraced in the return, the increase is shown to be 224 per cent. Per head of the population the increase is from 4.06 lbs. to 6.99 lbs.

On looking at the diagram which shows the consumption of tea, coffee, and cocoa separately, it is seen that by far the greatest increase has been in tea. In 1861 the tea consumed per head of the population was $2\frac{3}{4}$ lbs.; in 1893 it was about $5\frac{1}{2}$ lbs.—as nearly as possible double. In 1861 the consumption of cocoa was less than 3 oz. per head; in 1893 it was 9 oz. Coffee, in 1861, was consumed at the rate of $1\frac{1}{4}$ lb. per head of the population; in 1893 it had fallen to 11 oz.

Turning to the diagrams which show the consumption of alcoholic liquors, let us look first at beer. In 1861 the consumption was 20,000,000 barrels, and in 1876 it had risen to 31,000,000 barrels. The lowest consumption after that was in 1880, when 26,000,000 barrels were consumed; and about that figure the consumption continued till 1888, when a rise commenced, which attained its greatest height in 1891, when the consumption was 32,000,000 barrels. In 1893 it was only a little less. The diagram showing the consumption per head of population tells us that in 1861 it was $24\frac{1}{2}$ gallons. In 1874 it had risen to $33\frac{3}{4}$ gallons; in 1886 it had fallen to $26\frac{3}{4}$ gallons; in 1891 it was 30 gallons; and in 1893 it was $29\frac{1}{2}$ gallons.

The diagram showing the consumption of British and foreign spirits and wines tells us that in 1861 it amounted to

35,000,000 gallons, and there was an almost steady rise until 1876, when it amounted to 60,000,000 gallons. From that year there was an almost equally steady decline, until in 1886 it had got to 47,000,000 gallons. Again there was a rise, until in 1891 and 1892 it reached 54,000,000 gallons, and in 1893 it had declined to 51,000,000 gallons. The consumption per head of the population in 1861 was 1.22 gallons, in 1876 it was 1.80 gallons, in 1886 it was 1.30 gallons, in 1891 it was 1.42 gallons, and in 1893 it was 1.35 gallons.

Turning to the diagrams which indicate separately the consumption of rum, brandy, and Geneva and other foreign spirits, we find that in 1861 the consumption of rum was 3,500,000 gallons, or 0.18 gallons per head of the population. In 1867 it had risen to 4,300,000 gallons, or 0.28 gallons per head. In 1875, with fluctuations in the interval, it had risen to 5,400,000 gallons, or 0.36 gallons per head of the population. From this year there was a pretty steady decline till 1886, when it was 3,800,000 gallons, or 0.23 gallons per head; and then came a rise until 1890, when it was 4,600,000 gallons, or 0.24 gallons per head. In 1893 it had fallen to 3,800,000 gallons, or 0.20 gallons per head.

The consumption of brandy followed pretty much the same course as rum, rising from 1,500,000 gallons in 1861 to 4,500,000 gallons in 1876, and falling to 2,500,000 gallons in 1888, subsequently rising to 2,700,000 gallons in 1891, from which there was a slight reduction in 1893. Geneva and other foreign spirits (except rum and brandy) had a consumption of 250,000 gallons in 1861, and rose to 1,200,000 gallons in 1868, and in 1875 to 2,000,000 gallons. In 1880 the consumption had dropped to 600,000 gallons, and in 1889 it had again risen to 2,000,000 gallons, and in 1893 it was 1,500,000 gallons.

The diagram showing the consumption of wine gives lines indicating the fluctuations in the consumption of French, Spanish, and Portuguese wines, and then of wines other than French, Spanish, and Portuguese. In 1861 the consumption of French wines was 2,200,000 gallons, and it

rose to 4,500,000 gallons in 1868, and to 6,800,000 in 1876. From that time there have been fluctuations, mostly downward, and in 1893 the consumption was 5,500,000 gallons. Spanish wines were consumed to the extent of 4,000,000 gallons in 1861, and the consumption rose to 7,000,000 gallons in 1873. From that year there has been a pretty steady decline, and in 1893 the consumption was 3,100,000 gallons. The wines of Portugal were consumed in 1861 to the extent of 2,600,000 gallons, and in 1875 the consumption had risen to 3,900,000 gallons. A decline followed that year, and for several years the consumption was very steady at about 2,900,000 gallons. It rose again to 3,700,000 gallons in 1890 and 1892, and in 1893 was 3,500,000 gallons. The other wines have been very steady during the thirty-three years embraced in the return, ranging from 1,500,000 to 2,100,000 gallons.

The diagrams which show the consumption, per head, of British and foreign spirits, separately from foreign wines, show that in 1861 the consumption of spirits was nearly 7 pints per head, and it rose to $10\frac{1}{2}$ pints in 1875; fell in 1887 and 1888 to $7\frac{1}{2}$ pints; rose in 1891 and 1892 to nearly $8\frac{1}{2}$ pints; and in 1893 was under 8 pints. In 1861 foreign wines were consumed at the rate of 3 pints per head; in 1873 and 1876 the consumption was $4\frac{1}{2}$ pints; in 1886 and 1888 it was just under 3 pints, and so it stood in 1893.

The diagram referring to tobacco shows an almost steady rise in consumption from 35,000,000 lbs. in 1861 to 63,000,000 lbs. in 1893. These figures tell us that the consumption per head was $19\frac{1}{4}$ oz. in 1861, and 26 oz. in 1893.

[A striking confirmatory fact has just been made public in the Internal Revenue Report of this country, ending in June, 1894. This shows a reduction in the amount of spirits, wines, and malt liquors on which a revenue was paid of over ten million five hundred and ninety-five thousand dollars for the year of 1893. A reaction backward has clearly begun.—ED.]

STRYCHNINE DELIRIUM.

Those members of the medical profession who have employed caffeine very largely in the treatment of cardiac and renal disease, have recognized that large doses of this drug, continuously administered for a considerable period, developed in certain individuals what has been popularly called "caffeine craziness." In other words, the full medicinal doses required by the condition of the heart or kidneys have also been sufficiently large not only to produce an increased activity of the brain, such as is seen when coffee is taken in large amounts, but also have gone farther than this, and by the very cerebral stimulation produced temporary insanity. Within the last few years the medical profession has been employing in certain states what may be considered as massive doses of strychnine in the treatment of failing respiration or circulation, and has obtained therefrom very good results. It having been found that these full doses of strychnine acted favorably when given in an emergency, we have been tempted to continue their administration where the symptoms were relieved but temporarily, and, as a result, have oftentimes been pleased with their effect. On the other hand, a sufficient number of cases have been seen in which cerebral disturbance has followed these large doses to put us continually on the lookout for such untoward symptoms. As a rule, he who administers large doses of strychnine in an emergency is on the *qui vive* for some twitching of the muscles of the forearm or other portion of the body as an evidence of the physiological action of the drug. While we believe that these symptoms are commonly produced by a single administration of the remedy, we are also confident that its continued administration in full doses frequently fails to produce these evidences of heightened reflex activity, and in their place causes a more or less active delirium, in which the patient frequently refuses to take his medicine, or develops the delusion that his attendants are conspiring to poison him or do him some other injury.

The above editorial note in the *Therapeutical Gazette* calls attention to a fact not often recognized. In cases of inebriety who have been drugged freely, particularly in those who have received strychnine, low deliriums and imbecilities are common. Remove all drugs and pursue the eliminative plan of treatment and these symptoms disappear.

THE SAN FRANCISCO HOME FOR INEBRIATES.

This well-known asylum has recently been assailed by a leading daily paper, the principal reason being the refusal of the board of trustees to pay two hundred dollars for a column of praise. It appears that various gold-cure establishments had fallen victims to this paper scheme, and paid liberally for an extravagant "write-up" they received. The refusal of this institution to buy the commendation of the public was followed by wild charges of abuses and wrongs, and appeals to the grand jury to investigate them. After a series of savage onslaughts and vindictive efforts to gather evidence against them, the grand jury found no cause of action, and the paper, of course, had the last word, and made the usual unpleasant ending to the scene. The gold cure schemers were clearly at the bottom of the trouble. While the charges of the paper were childishly assumptive, and showed very little knowledge of human nature and sad lack of business sense, the managers of the asylum failed to take advantage of this splendid opportunity to enlist the sympathies of the people. Attacks of this kind on strong, reputable asylums are welcomed by sharp business managers as magnificent advertisements that can be turned into gold and golden influences at once.

This Home has been before the public thirty years, and has been managed by very able men. The present Superintendent, Dr. Potter, is a well-known writer and teacher of medicine, and his management of this Home has commanded the respect of medical men all over the country. Asylums like this should never pray to be delivered from their enemies, but for an occasional battle with them, so they can keep right before the public and have a lively, healthy interest all the time.

MANY criminal inebriates suffer from sense delusions and hallucinations. They act from misconceptions and errors of the senses, which to them seem real. They are unable to correct these false impressions, or to judge of their value, but act at once as if they were real and true.

Aural hallucinations of voices, threatening and violent words, have caused many fatal assaults that were sudden and unprovoked. Visual hallucinations have provoked similar assaults, committed in supposed self-defense, and other unexplained acts are often traced to the same disturbances of the sense impressions.

THE Keeley gold-cure people are concentrating an immense amount of energy to secure laws in different States, giving judges power to commit chronic pauper inebriates to Keeley institutes at the expense of the tax-payers. The other gold-cure discoverers, who claim that they have better remedies than Keeley, oppose these bills. In many of the public hearings before the legislative committees, the question of which specific has cured the largest number of inebriates is discussed with great freedom and positiveness. From the statements on both sides, it is evident that Munchausen has been carefully studied, and his famous methods of expression copied with exactness.

Notwithstanding these peculiarities, the general subject of the public treatment of inebriates is receiving prominence and eliciting discussion that will clear away the heavy fog-banks of superstition which now invest it.

HABITUAL MISCARRIAGE.

R. Reece, M. R. C. S. Eng., 1851, L. S. A., 1832, Walton-on-Thames, England, says: I used Aletris cordial in a case of painful menstruation. It was most valuable. The wife of a minister suffered much and had had three miscarriages. Prescribed Aletris Cordial. She has, for the first time, gone her full time, and was safely confined with a male child. I also prescribed it to a relative, suffering with leucorrhœa for years. Great relief from pain, and the discharge much less. In the first case related it was truly a God-send to her.

DR. CHARLES HENRY BROWN of New York, editor of the *Journal of Nervous and Mental Disease*, says: "Maltine with coca wine has served me well in cases of neurasthenia from any cause. It serves as a most excellent sustainer and bracer. Besides these two essential qualities, we are forced to believe in another element in this combination, and that is the sedative quality, which makes it a most valuable therapeutic desideratum. It does not seem to me that this action depends entirely upon the coca, or the coca in combination with wine. My conviction is, that the maltine plays a leading part in this triple alliance"—*Medical and Surgical Reporter*, Dec. 22, 1894.

Clinical Notes and Comments.

DR. CHAUNCEY STEWART of Allegheny City, Pa., has used Iodia very extensively in his practice, and regards it as the "Ideal alterative—the *sine qua non* in the treatment of syphilis, scrofula, and all diseases arising from syphilitic contamination or a strumous diathesis. Iodia has this advantage over mercurial treatment in syphilis; when the patient does get well he is well. He is not tortured with mercurial rheumatism nor made to blush through the syphilitic blossoming of his face in after years. He is well. Unlike the long-continued use of other alteratives, Iodia does not reduce and debilitate the constitution, but invigorates and restores the vital power and enable the patient at all times to continue in the discharge of his vocation."

At this season of the year, when radical and sudden thermal changes are the rule, it becomes of vital interest to the busy practitioner to have in compact, ready form, such approved medicaments as meet the analgesic and antithermic requirements of the bulk of his patients. As pertinent we call attention to the following combination tablets: "Antikamnia and codeine," each containing $4\frac{3}{4}$ gr. antikamnia and $\frac{1}{4}$ gr. codeine, "antikamnia and quinine," each containing $2\frac{1}{2}$ gr. antikamnia and $2\frac{1}{2}$ gr. quinine, "antikamnia and salol," each containing $2\frac{1}{2}$ gr. antikamnia and $2\frac{1}{2}$ gr. salol, and "antikamnia, quinine, and salol," each containing 2 gr. antikamnia, 2 gr. quinine, and 1 gr. salol. These together with the well-known "antikamnia tablets," of varied sizes, and "antikamnia powdered," constitute indispensable factors in the armamentarium of the physician, and are more than ordinarily indicated in present climatic conditions.

Park, Davis & Co., with their usual masterly enterprise, have already on the market a supply of antitoxin. They have established a bacteriological department, and begun new investigations in this fascinating field.

The experience of every person confirms the value of *trional* and *phenacetine* as narcotics of rare powers. The literature of the subject is already quite large. W. H. Schieffelin & Co. of New York city are the American agents for this drug, and will forward papers to any address.

Wheeler's Tissue Phosphates is a very strong combination of lime, sodium, iron, phosphate, cherry bark, and calisaya. Practically, it is almost a specific in many cases.

Horsford Acid Phosphate, like the song of the brook, "goes on forever." Its value grows with the years, and its uses widen, until the demand has now reached such proportions that a vast manufactory and an army of men are required to supply it.

Celerina is a standard remedy in all cases of exhaustion coming from alcohol and narcotic drugs. The Rio Chemical Co. of St. Louis have done excellent service to the profession by placing this remedy where it can be used and tested. We urge a careful trial of it in these cases.

The Vernon House at Bronxville, N. Y., under the care of Dr. Granger, is an admirable place for mental and alcoholic cases. Each case receives special personal care.

Fire-Proof Safes have become a necessity in every institution and in every case where valuable papers are kept. E. C. Morris & Co. of Boston, Mass., make a specialty of safes of all kinds. Send for a circular.

Fellows' Syrup of Hypophosphites is a rare preparation for building up the brain and nervous system, and one of the few remedies that are usually prescribed very freely after having been once used by the physician.

The *Arethusa Spring Water* of Seymour, Conn., is an excellent water for nervous invalids, and grows in popularity wherever it is used. Send for some circulars.

Horlick's Malted Milk is an excellent nutrient for debility and exhaustion. It can be used on the table as a substitute for food with the most satisfactory results. It is milk combined with malted barley and wheat, and rich in phosphates. Send for a package.

THE
QUARTERLY JOURNAL OF INEBRIETY.

Subscription, \$2.00 per year.

Vol. XVII.

JULY, 1895.

No. 3.

This Journal will not be responsible for the opinions of contributors, unless indorsed by the Association.

THE DANGERS OF MORPHIA IN GYNÆCOLOGICAL PRACTICE.*

BY H. MACNAUGHTON JONES, M.D., M.A.O.

There are reasons, which I hope to make apparent before the close of this paper, why a discussion on the subject I have selected for our consideration is as important as any other that can occupy our time or attention. It has at least this charm attaching to it—that it takes us away from the constant iteration of purely surgical procedure, and attracts us through the dual interest of the therapeutic tolerance manifested, and the ethical responsibility incurred, in the administration of a powerful toxic agent. I say “toxic agent,” for, in dealing with the danger of morphia administration in gynæcological practice generally, I have to consider rather those physiological effects which are followed by pathological and psychical manifestations in the person of her to whom morphia may be either imprudently administered, or in whom its usage is carelessly prolonged. Morphia, with such poisons as ether, alcoholic spirits, hashicsh, and opium itself,

* Read before the British Gynæcological Society at the April meeting in London, and published in *Medical Press and Circular*.

is used in excessive or toxic quantities, either with the object of producing pleasure, and ministering to voluptuousness, or for certain therapeutic and medicinal purposes ; stimulating and dietetic, as in the instance of the alcohols ; stimulating, supporting, sedative, and narcotic in that of opium or its alkaloids.

It is not too much to say that in the reaction that followed the teachings of Todd and Graves, when the pendulum swung from its highest point of antiphlogistic treatment of bleeding, blistering, and mercury, to the opposite one of extreme stimulation (though it must be remembered, in justice to both these great teachers, that neither of them can be held responsible for the abuses founded on their doctrines), many died more of alcohol than of the diseases it was administered to cure. Many in fever were sent, unintentionally but rashly, more drunk than delirious from life. Morphia also has been responsible for many deaths other than those which have followed its use with a suicidal object ; nor can we forget the many who have been accidentally poisoned by over-dosage. The desire to relieve pain, or cause sleep, has either overridden or lulled caution, when the narcotic and other effects of opium and morphia were distinctly contra-indicated. I, myself, had to thank an imprudent dose of opium, given to me in the helplessness and delirium of typhus fever, for an over-distended bladder, consequent catheterization, and a recto-vesical abscess, which, fortunately for me, discharged itself through the rectum.

I propose to consider the question of morphia administration in women from the following points of view: The influence of temperament on its action and effects ; our knowledge of its physiological and psychological influences ; the precautions to be observed in its exhibition.

With regard to temperament, I must ask your attention for a few minutes to that large class of sufferers from affections of the female generative organs, commonly spoken of as "nervous." The neurotic woman, I take it, is to be regarded in the light of a by-product of that unstable nervous

organization which we style the nervous temperament, and it were well to confine our employment of this term "neurotic" to such abnormal and morbid exaggerations of it as are so uncommonly found associated with pathological conditions of the woman's pelvic viscera. Thus we can frequently trace the incipency of the neurosis to the occurrence of some accident or injury, which may have had a dual consequence through the infliction of shock, or the inducement of some displacement or affection of any one of these organs. Previous to such accidental determinations the woman may have been normal in her control of her will, feelings, and emotions. Her energy and impulses have directed her actions, without causing that sense of reaction and fatigue which is so constantly present after slight exertion, when her impulses are diverted by unhealthy excitations, and her energy is dissipated by morbid introspections. Such a nervous temperament is frequently satisfied with little sleep. Under the influence of excitement fatigue is quickly recovered from, and a latent reserve force of nerve energy appears ever ready on demand to carry its possessor over unsurmountable obstacles. All this accumulated governmental control of will and nerve energy are missing in the neurotic, but none the less is that loss felt when the unequal struggle occurs between the sovereignty of an enfeebled indeterminate will and the rebellious and more masterful emissaries, the woman's "lower passions and lower pains." While in health such individuals can pass through great physical and mental exertion without stimulants, but when the natural call on their reserve energy finds no response they apply the artificial spur of alcohol, or some other excitant, such as morphia, to the flagging nerve cells. Such individuals are quite cognizant of the abeyance of the power to exercise free will. The desire to suppress the expression of pain is present, but the usual control is lost. Also, there is general hyperæsthesia of the peripheral nerves, which find in the frequently ill-nourished central cells a susceptibility to slight impulses and morbid sensitiveness, with an exaggerated perception of compara-

tively trifling stimulation. Here we are dealing with an *acquired* neurosis, for which possibly we may find no clue through atavistic transmission. On the other hand, we can often see in early childhood the traits of temperament which clearly foretell the future neurotic woman. Capriciousness, irritability, selfishness, restlessness, and excitability, are the characteristics which stamp the moral prototype in the child of the adult neurasthenic and hysterical woman, though it is after puberty that we frequently find such distinctive features of character develop themselves. When a woman of this type marries, in the demands on her nervous system, if she be not sterile, which the claims of children and domestic duties involve her in, she generally escapes those neurotic and hysterical manifestations that are found in the unmarried and sterile. In the former we are more likely to meet with those erotic thoughts, desires, and practices that still further enervate her nervous system and enfeeble her central control. She is, perhaps most of all, the back drawing-room or boudoir woman who is apt to fall, to use Professor Clifford Allbutt's expression, "into the net of the gynæcologist."

Turn we now for a moment to the lymphatic antithesis of this unfortunate victim to unbridled and morbid nervous and sexual impulses.

There is a type of woman, familiar to us all, indolent, lethargic, fanciful of ailments, with a superficiality bordering on childishness in conversation, dull of comprehension, readily open to flattery, even to her own self a bore, and often one to her husband and children, if she be married; fringed with layers of pectoral and abdominal fat, the easy prey to quack systems of dieting and to the "man of the world" physician. Her defective metabolism and a sexual voluptuousness, makes this proprietary article the registered dual property of the "pure specialist" for gout on the one hand, and the cotton wool gynæcologist on the other. She is one of the principal sources of revenue to the new *Franc Tireurs* of the outposts of medicine — the ubiquitous masseurs or masseuses, as the previously described sufferer is to the fashionable "Weir

Mitchell Home." With her, every twinge is "agonizing," to walk is impossible, and, once let her evolve uterus and ovary "on the brain," whether these organs are diseased or not, they are made responsible for every ill her peccant flesh is heir to, not even excluding "housemaid's knee." She is not of the classical neurotic type previously described, though her visceral neurosis may be legion. She may suffer from congestive dysmenorrhœa and ovaralgia, her uterus may be as flabby as her brain, and her ovary as fertile in aches as her imagination in fanciful allusions. Her voluptuosity is not limited to her appetites of palate, but is not infrequently manifested in sexual abuse. She fancies that she sleeps for many hours less than she actually does, and hence is often seeking for some new, when she has already exhausted every conceivable variety of reputed, hypnotic. While we find in the unmarried more frequently examples of the first type of temperament, married women furnish a larger proportion of the latter. Both, however, are to be found constantly as representatives of the habit of morphinism.

It cannot be denied that numbers have succumbed to the desire for morphia, and have ultimately become morphinomaniacs, in whose instances it could not be attributed to any temperamental tendency. Here pain, the result of disease, more especially in the nervous system, has invited the first use of the drug, and the recurrence or continuance of the pain has suggested its reapplication. Unfortunately, many have used it rather in anticipation, than for the present relief, of suffering. This has led to its employment when its therapeutical action has been expended on the nervous system, when the relief afforded by its narcotic action could not be experienced, yet the patient has been subjected to the exhilarating and pleasurable sensations which are produced by repeated doses of morphia.

Let us consider very briefly the facts which are now fully established regarding the etiology and course of morphinism, leading up to morphinomania. It is a curious fact that not until 1864, when Nusbaum drew attention to the conse-

quences following the abuse of injections of morphia, was there any serious notice taken of its ill effects, and the first English physician who seems to have written on the subject was Dr. Clifford Allbutt, who wrote in the *Practitioner* of 1870, of the dangers following incessant injections of morphia, and pointing out that while relieving the severe pains in various neuralgias, the need for the use of morphia increased, and that it created an artificial craving, the yielding to which only resulted in a depression and irritability due to intoxication by the drug. The writer then clearly recognized the craving and intoxication of morphinism.

During the seventies Laher (1872), Fielding and Hirschfeld (1874), Michel (1876), Lewinstein (1875-77), Burkart (1879), wrote monographs on morphinism, Lewinstein writing a complete description of the affection to which he gave the name of "Morphiumsucht" (1879).

Clarke wrote on the sudden discontinuance of morphia after its protracted use, in the *Lancet*, in 1879, and Griffith on the abuse of the morphia habit, in the *Guy's Hospital Reports*, 1878.

Erlenmeyer insisted, about the same time, on the relapses after treatment. Braithwaite also in England (1878), Mattison in America, Dealbanne, Zambaco, Landowski, and Pichon in France contributed material to the literature of the subject.

During the next decade Burkart, Erlenmeyer, Leppmann, Obersteiner, Samter, in Germany; Zambaco, Bourneville, Grasset, Benjamin Ball, Jennings, in France; Loose, Mann, Kane, in America, were the principal writers.

In 1890, Regnier published his brochure on chronic intoxication by morphia, a valuable and comprehensive monograph. This latter, with the work of Dr. Albrecht Erlenmeyer, "Die Morphiumsucht," gives the fullest information with regard to the entire subject, on which so little has been written in this country.

It is sufficient for me to emphasize certain points which have been fully established by these and other observers. We may follow Regnier in separating morphia-takers into

two broad classes, morphinises and morphinomanes, according as the habit can be resisted, and is more or less under control, or, as in the latter class, it passes beyond this stage, and the craving is, or tends to become, irresistible. Zambaco divides morphia patients into three classes — those suffering from painful chronic diseases, who have daily recourse to morphia; secondly, those who, having been cured of such affections, still continue its use; and lastly, those who abandon themselves to morphia abuse for the mere pleasure it affords, as in the case of alcohol or absinthe. Eloy briefly summarizes all morphiomaniacs under two headings — those who have become such from a necessity, or from passion. Lewinstein, again, classifies the morphia intoxicants into two categories; first, those who, in spite of themselves, have been driven by a painful and often incurable affection to the use of morphia (the morphinises of Regnier) and secondly, morphinomaniacs. The clear distinction to be drawn between the two is that in the one case the morphia is taken solely for the relief of suffering, and not for its exhilarating, exciting, and agreeable effects.

Let us here notice some indisputable facts as regards the effects of morphia. Pain accounts for a certain immunity from the toxic action of the drug, even when continued over a considerable period of time (14 years in one case, Hirschberg). This is especially true of cancer, and in certain maniacal cases Voisin has given, in gradually increasing doses, over a drachm of morphia in the 24 hours, and continued this treatment for some time without, either during administration or at its relinquishment, producing any symptoms of morphia intoxication. It may be concluded that age, sex, condition of health, and the intervals between administration, influence the effects of the dose.

Morphia administered by the mouth is somewhat less active in causing intoxication. The abscesses which at times accompany the subcutaneous punctures have been variously explained by Despres, Jacquet, Verneuil, and Charcot, and may be attributed to one or more of the following causes:—

Misuse of the injecting syringe, suppurative tendency in the subcutaneous tissues of the patient, and microbial infection. Both the staphylococcus having been found in the pus of these abscesses, points to the necessity for efficient sterilization of the morphia injector.

It is important to note that so far statistics appear to prove that men are more subject than women to the morphia craving. Lewinstein and Burkart have assigned the relative proportion at about 25 per cent., but Landowski considers that the habit is more successfully concealed in the case of women, who more completely abandon themselves to it, and make no confession of the practice. Also the prevalence of morphinomania amongst doctors, nurses, and pharmacists has to be remembered, doctors representing by far the largest number of all classes in which the craving has been recorded. Out of 150 morphinomaniacs noted by Lewinstein and Burkart, 86 were either doctors or persons connected with the medical profession. Rochard considers that doctors furnish more than half the number of male sufferers. This unfortunate prevalence of the propensity in the ranks of medicine may be accounted for, says Regnier, first, by the facility with which the drug is procured, and, secondly, by the arduous nature of a calling which oftentimes makes irresistible demands on a frame already over-fatigued and suffering.

So far as the influence of age is concerned, it would appear that the majority of morphinomaniacs will be found between the ages of twenty-one and fifty, though in France cases have been recorded in females from thirteen to eighteen years of age. Apart from the narcotic effect of morphia in assuaging pain in a healthy individual, it is well to summarize its effects in the person of a truly hysterical or neurotic woman. Following the injection there is a period of repose during which the patient has a pleasurable sensation. She loses her feeling of depression and sense of fatigue, becoming more alive to all that goes on about her, takes a greater interest in conversation, and is rendered more capable of her ordinary occupations. At the same time her pulse is stronger and her breathing freer.

Lewinstein applies to this condition the term "euphoric" (euphorische). Its duration is variable. It may last for twenty-four hours, or even longer, but its length is diminished as the number of injections is increased, and gradually this pleasurable period is reduced, after some months of indulgence, to a few hours, and, ultimately, minutes. Little by little, as the number of injections and quantity of morphia is increased, the periods of depression are intensified; a sense of malaise and a feeling of restlessness succeed, complete reaction to the previous exhilaration follows, the cardiac rhythm may become irregular, the skin is pale, a sensation of feebleness and loss of nerve control ensues, and the prostrate and languid sufferer craves again for the artificial stimulus of the morphia. Should she also be subject to neuralgia, whether in her pelvic organs or elsewhere, her pains return with redoubled force, and find, in her paralyzed will and disordered imagination, a house ready swept and garnished for every devil of hysteria and hypochondria to enter in and play havoc with her moral nature. To such we may apply these lines of Milton:—

Which way she flies is hell — herself is hell,
And in the lowest deep, a lower deep,
Still threatening to devour her, opens wide.
To which the hell she suffers seems a heaven.

I have not time to touch upon those incidental troubles which are known to be associated with morphinism. I allude more particularly to disorders of digestion and dyspepsia, constipation, and occasional vesical irritation, with abnormal changes in the urine, both in its quantity and quality, and urethral pain; visual disturbances, amblyopia, diplopia, and disorders of accommodation; lessened reflexes; rotatory oscillations of the arms, defects of memory and moral perversion, psychical apathy (due probably to a direct effect of the morphia on the discharging energy of the brain cells), and interference with the metabolic function of the liver through its influence on its glycolytic function. With regard to the last action, we are reminded that there is a certain cumulative tendency in morphia, and that this is specially shown in the

case of the liver. The experiments of Rogers and others tend to show that there is an interaction between the hepatic glycogen and the morphia, the glycogen having the property of arresting the alkaloid, an interaction which Regnier and others suppose has to say to the occurrence of glycosuria in more advanced morphinomaniacs. Outside the afore-mentioned complications there are the occasional cardiac changes to be remembered, which have been noted by Lewinstein, Schweininger, Hirschfeld, Ball, and others, in the form of hypertrophy, sclerotic changes, and fatty degeneration. Such effects on the heart have to be considered if morphia is frequently administered during pregnancy, when there is a natural tendency to such complications.

What touches us more especially is the influence exerted on the catamenial function through the morphia habit, namely, frequent arrest of the same, constant irregularity or complete suppression. Sterility is at times the consequence of this arrest of uterine function. There is also the undoubted effect of morphia on the embryo, and the fact that the infants of morphia-takers suffer immediately after birth from the consequences of the habit has to be recollected. But the fact before all others that I am anxious to emphasize, and which has been clearly proved by a number of observers, is, that what we understand by hysteria occupies the foremost place in the causation of morphinomania. Hysteria, neurasthesia, neuralgia, cephalalgia, ovarian crises, dysmenorrhœa, spinal neuropathics, neuro-mimesis, are the correlated conditions, often associated with sexual disturbances, which stand in the forefront in the etiology of morphia abuse in women. And they are, unfortunately, the very conditions for which it is most frequently prescribed.

Recall, now, the temperament that I have endeavored to depict as types of those most susceptible to the deleterious effects of morphia. They are distinctly those which all experience has proved are most likely to be conquered by the physiological action of the drug. Such persons are always importunate for its employment, once they have experienced

its effects, and the weak-kneed physician is compelled to yield to their importunity. A prescription is given, possibly a nurse is entrusted with the administration, and very frequently, when the nurse leaves, the patient, retaining the prescription, not alone administers, but practically prescribes, the medicament for herself. I have known a supply of morphia solution of the British Pharmacopœia to be obtained daily at different chemists, and thus as much as 18 to 20 grains of morphia has been taken subcutaneously within the 24 hours. The original prescription was copied at different establishments, and no demur was made to compounding it even after the lapse of two years from the date of the original prescription, nor was the physician who prescribed it made cognizant of the fact that it was so repeated. I cannot but look upon such a practice as a grave and dangerous abuse of that mutual trust which should exist between the physician and the pharmacist. When morphia can thus be readily obtained in large quantities, the tendency often arises for one woman to recommend its use to another, and even to go so far as to herself subcutaneously inject it into friends. Thus the habit becomes contagious, and there is even a morbid delight felt in the act of puncturing, not alone herself, but others.

We must also bear in mind what the condition of the nervous system is during and after pregnancy, when morphia is thus occasionally administered to relieve vomiting, or to give sleep. Here we have an abnormal circulating current and a temporarily altered condition of the entire vascular and nervous systems. Mental irritability, capricious or depraved appetites, emotional and hysterical states, periodical neuralgic waves of pain in different parts are not uncommon. Thus we have associated with pregnancy those very physical and psychical states in which we might expect to find morphia excite a craving for its effects and repeated use. Its action on the foetus through its tendency to cause abortion, and lower the vitality of the embryo, I have already referred to.

I have said sufficient to indicate the caution it is necessary to observe in determining to resort to morphia for certain

affections of women, which specially fall to the lot of the gynæcologist to treat. Many of these are of a reflex nature, arising out of disorders of the uterus and its appendages, and are to be cured only by the restoration to health of the deranged pelvic organ. In the majority of such cases the morphia syringe is the most mischievous remedy to resort to. It may bridge over a period of time, but often this gain is achieved at the expense of the entire moral control of the woman, and her latent power to endure even trifling pain. I do not quote particulars of cases, but I can say that numerous observations of women whom I have known to be addicted to the morphia habit, owed their misfortune to what I could not but regard as the indiscriminate and too careless administration of the drug. In one case a lady of considerable refinement and culture had found her way into a private asylum, an eminent gynæcologist having permitted her to take morphia by the mouth at her own discretion, until at last she arrived at such quantities as would almost seem incredible. On leaving the asylum, where she had been cured, she still continued to fall back occasionally on the use of the morphia, and some years afterwards, when I saw her for a hæmorrhoidal affection, she handed me up a small phial containing acetate of morphia in powder, confessing that she occasionally took it in varying quantities and without measurement. For some years she has been completely cured of the habit.

One other point I will only make a passing allusion to, and that is, the double-edged nature of this weapon, when used by the surgeon after abdominal operations, in masking symptoms of peritonitis, and possible interference with the natural process of cure through arrest of the secretions. As Greig Smith well says, "The routine employment of morphia is to be condemned. Complications are better met with a system unimpregnated with morphia."

The moral of this paper is that there is a responsibility attached to the employment of morphia for the relief of pain in the affections of women, not sufficiently recognized in

practice. This responsibility imposes on the physician the duty of differentiating those cases in which morphia may almost certainly be given with immunity from its toxic effects, from those in which the risk of intoxication by its repeated use is great. It is not too much to say that under no circumstances whatever should a patient be permitted to inject herself, and it is questionable, for many reasons, whether relatives or friends, save under very exceptional circumstances, should accept the responsibility of doing so. Only small quantities of a solution should be ordered at one time, and such an amendment should be made in the Sale of Poisons Act as to prevent the dispensing of prescriptions for morphia injections or powders which do not bear the signature of a physician of a date recent to that on which they are presented to the chemist. The effects of morphia, especially when the doses are repeated or increased, should be carefully watched, and its employment suspended if these appear to contra-indicate its use. The need for sterilizing the morphia syringe, which has been referred to, should be remembered. These are some conclusions I would place before the Society, and though I have absorbed a portion of its valuable time, I do not feel that the subject is one which does not justify the expenditure of it.

In the discussion which followed Dr. Leith Napier spoke as follows. Dealing with the author's reference to the influence of temperament on the action and effects of morphia, he thought that too much stress had been laid on this point in the paper. The quotations of woman's "lower passions and lower pains," was neither accurate nor, it seemed to him, applicable. He would suggest, as a better comparison, "Passion drives the man, passions the woman; him a stream, her the winds." He concurred with Dr. Macnaughton Jones in adopting Zambaco's classification of morphia patients — those suffering from painful chronic disease, who have daily recourse to morphia; those who have been cured of such affections, but continue its use; and those who indulge in morphia for the mere pleasure it affords. He

thought insufficient stress had been laid on some of the symptoms of morphia that were sometimes met with. Thus, he had known hypodermic injections cause so much sickness that the relief of pain hardly seemed sufficient to justify continuance of the drug. Various cutaneous rashes as well as general pruritus were also sometimes seen. After briefly reviewing the physiological and pharmacological action of the drug, Dr. Napier dwelt on the influences that modified its effect. Women were more susceptible to morphia than men, reacting readily to its exciting as well as to its sedative effects. The effect of habit was most marked, and very large doses could in time be taken. He held strongly that while morphia should be given for relief of pain, less potent drugs should be used in cases of insomnia and in neurotic conditions. Yet it was not necessary for medical men to blame themselves unduly if, as the result of the legitimate use of morphia, patients came to take it themselves, and in excess; so also patients were not to be unduly blamed for taking morphia if their medical attendants did not warn them of the possible dangers; and lastly, it was not right to assume that every woman who had given way to the habit had done so with insufficient cause. The temptations resisted had to be taken into account, as well as those yielded to. He came then to the question, What drugs could be substituted for morphia in dealing with insomnia, and with various psychoses? Some of the bromides and belladonna answered very well, if used judiciously. He had had good results from lactophenin, in doses of 7 to 15 grains, in cases of nervous insomnia; from chloralamid, bromidia, and tincture of piscidia erythrina (in doses of 1 to 1½ dr. daily). Sulphonal and paraldehyde, though not so much spoken of lately, were well known remedies. He deprecated the routine use of morphia after abdominal sections, while recognizing that in some cases it was necessary. After many vaginal operations also a morphia suppository was advisable. At the same time he believed that morphia frequently increased the tendency to post-anæsthetic sickness. In conclusion, he suggested the

following questions for discussion : 1. For what conditions of pelvic disease ought morphia to be administered? 2. Was it preferable in giving morphia hypodermically to employ it alone, or with sulphate of atrophine? 3. What were the best substitutes for morphia in psychoses of women? 4. What was the best curative treatment for morphinism in women?

Dr. C. A. Mercier expressed his indebtedness to Dr. Macnaughton Jones and to the society for giving him the opportunity of taking part in the discussion. It was worth noting that not everyone who took morphia, even habitually and in large quantities, was a morphinomaniac. There was the classical case of De Quincey, who indulged at frequent intervals in an opium debauch, from 1804 to 1812. At no time during these eight years was he a slave to the drug. In 1813 a severe and painful illness led him to the daily use of laudanum, and it was only then that it obtained a complete mastery over him. He describes himself in 1816 as sitting down every night with a quart decanter of laudanum at his elbow, and he drank it without measure and without stint. The absolute dependence on morphia, and not the mere indulgence in it, however frequent and prolonged, constitutes morphinomania. It was a very noteworthy fact that De Quincey was able to and did abandon the habit at the cost of intense suffering, without, as far as they knew, any external assistance or advice. But then De Quincey never used the hypodermic syringe. He took opium by the mouth, and it was a matter for serious consideration whether the tyranny of morphia administered by the syringe was not far more dominating and exacting than when it was taken by the mouth. Dr. Macnaughton Jones had pointed out that attention was first called to the prevalence of the morphia habit in 1864, and he believed that it was about that time that the syringe became prevalent. It was perhaps a question whether the invention of this instrument had been a boon or a bane to humanity. Undoubtedly it had given them a power of actually saving life in cases of great agony, such as renal and biliary colic, in which it was threatened by the extremity of

the pain ; but he would submit whether its use ought not to be restricted to such cases. It was a remarkable fact that a successful means of breaking morphia-takers of their habit was based upon the much greater facility with which it could be abandoned when taken by the mouth than when administered by the syringe. A large proportion of the daily ration of morphia could be cut off without the production of severe distress ; it was when a minimum ration of one or two grains was reached that the difficulty arose. It could be solved by abandoning at this stage the syringe and giving double or treble the amount by the mouth, and this ration could then be rapidly diminished, and at last altogether abolished without occasioning any very severe distress to the patient. The conclusion that he ventured to put before the society was that the syringe should be reserved for cases of great agony requiring immediate relief ; that a long course of opium, when necessary, should be given in other ways ; and, finally, that it was almost criminal to entrust a patient with a syringe for the self-administration of morphia.

Dr. J. F. Woods (Hoxton House Asylum) said that his experience of the use of morphia had been chiefly through cases that had come under his care through its abuse. He had met with six cases. In one the patient, a medical man, was admitted under certificates. He was suffering from delusions, and had been taking a daily dose of about twenty grains hypodermically. After an attempt at suicide he was allowed his syringe with an attenuated solution, so that instead of two grains for a dose (as he thought) he had only one-twentieth of a grain. He improved rapidly, and left after two months. After a time he had a relapse and was again cured, but later he committed suicide by taking an overdose of chloroform. Another case was that of a lady, æt. 49, who had begun morphia fourteen years before, having had it given her by a doctor for some uterine trouble. On admission she gave up four syringes and two bottles of morphia. He stopped the drug, and she had the usual restless symptoms. Finding her amenable to hypnotic suggestions, he employed

this method with marked success. Suggestions in the daytime under slight hypnotism for a few minutes enabled her to sleep at night, and he gave her suggestions against morphia during sleep with the effect that she always awoke much better, and the restlessness disappeared. She made rapid progress, and gained about two stone in weight. He heard from her last week, and she was keeping well. He considered morphia one of the most satisfactory drugs that they possessed, but it should be given with extreme caution, and stopped immediately the effect required was produced. It should be administered by the medical man only.

Dr. Fitzgerald (Folkestone) said he would confine his remarks to the use of morphia in cases of painful and hopeless malignant disease. In these cases he thought that he would be a bold and unwise man who should deny its use. Medical men were too cautious and even timid in the use of opium in hopeless cases, where there was absolutely no hope of prolonging life. Surely it was the function of the pitiful physician to alleviate pain and suffering where cure was impossible, even if it shortened life, which in the case of opium he denied. Euthanasia, the ensuring of a painless death, was the absolute duty of the conscientious physician, but was from timidity too often neglected.

Mr. W. D. Spanton (Hanley) was in accord with most of what had been said by the writer of the paper, but hoped that gynæcologists would not be held responsible for all the evils of morphia, as he believed it to be more common among men than was supposed. Under no circumstances, however, ought a patient to be permitted to use a hypodermic syringe herself.

Dr. Morton, while admitting the great value of morphia, wished to put in a plea for caution in its use. In dysmenorrhœa and allied conditions it was very rarely needed; there was a large field here for the recent antipyretic and analgesic drugs. In cancer it was invaluable, but should not be used too early, or the doses increased too rapidly. Much could be done with $\frac{1}{8}$ or $\frac{1}{2}$ a grain. He strongly protested against the

syringe being placed in the hands of a nurse. In peritonitis the sheet-anchor to be relied on was not opium, but purgation.

Dr. T. Outterson Wood thought the profession had the matter to a large extent in their own hands, but in private practice there were at times great difficulties. As long as the patient possessed judgment and will-power he was master of the situation, and could refuse advice. In asylum practice the chances of cure were greatest, but it was not there that the majority of cases were met with. It was rather among borderland neurotics, and when their mental condition became reduced to one of certifiable disease recovery was rare.

Dr. Macnaughton Jones, in reply, said that a sad interest was connected with the reading of this paper. The last words the late Dr. Hack Tuke spoke to him, a few days before his fatal illness, were much in the same language as that used by Dr. Mercier, *viz.*, "If all the benefit which had resulted from the use of morphia were balanced against the mischief that had followed its abuse, he doubted if the latter would not largely outweigh the former." He was indebted to Dr. Tuke for much of the literature which he had referred to in the paper. He would remind the fellows that the object of the communication was to draw the attention of the society to the dangers arising from the *indiscriminate* use of morphia *subcutaneously*. The first point he emphasized was the influence of *temperament* on the susceptibility to morphia intoxication. Inasmuch as, in the case of women, morphia was frequently given for those subjective pains associated with pelvic disorders, and in which the nervous temperament played so large a part, it followed that the greatest caution and discrimination should be exercised in its use. All experience proved that the hysterical temperament was the one which was the most susceptible to the insidious toxic action of the drug. This type of case was most frequently exhibited in reflex pains, which had their source in some functional disorder of the uterus and ovaries, as in certain forms of dysmenorrhœa, ovaralgia, etc. He had distinctly pointed out

in the paper that pain arising out of a true pathological condition afforded a certain degree of immunity from the intoxicating effects of morphia. This was specially true of cancer. Its use in this affection was not alone legitimate, but, at the proper time, imperatively indicated. His remarks did not contemplate the use of morphia in any other class of affections than those peculiar to the generative organs of women. He did not refer to men. In an allusion to the comparative frequency of morphinomania in the two sexes, he had not either alluded to *opium*, but to the one particular alkaloid of opium. Some speakers, in the words of Shakespeare, "had drawn out the threads of their discourses rather than the staples of their arguments." To speak of opium and the use of morphia in cancer and other affections was simply drawing a red herring across the trail of the discussion. In reply to the president, he affirmed that he had had several cases within the last few years in which morphinomania and morphia intoxication had resulted from want of cautious administration of the drug. He (Dr. Macnaughton Jones) believed that the *clandestine* use of morphia was rather on the increase, through the facts which he referred to in his paper, *viz.*, the giving of prescriptions for quantities of morphia solutions to patients, and by the abuse of these prescriptions by the patients themselves or their friends, the habit became, as he had said, contagious. He had emphasized the fact that it was the *subcutaneous* injection of the alkaloid which was so specially dangerous. Of course, Dr. Spanton was not serious when he spoke of a subcutaneous injection as a surgical operation. As to sterility, it was pointed out by Lewinstein, Erlenmeyer, Regnier, and others as a consequence of morphinomania. He (Dr. Macnaughton Jones) had seen this in the case of a married patient who became pregnant after some years of absence of conception, when she was cured of the morphia habit into which she had fallen. He would categorically summarize the different methods of healing the morphinomaniacs or *morphinises*: (a) Lewinstein's method of "abrupt suppression," or sudden stoppage

of the morphia — this had been found to be dangerous and not to answer. (b) The plan (Erlenmeyer) of gradual suppression or gradually reducing the dosage of the morphia and extending this over some time. (c) The medium course of moderate suppression, or stopping the morphia gradually in the course of some 8 to 10 days. This plan may be continued with the use of hypnotics. He had given various hypnotics. In one case urethane answered well. (d) Alcohol had been tried as a substitute for the morphia. This had failed. (e) Chloral also had been tried and abandoned. (f) Opium itself had been tried and other of its alkaloids, but it had not answered. (g) Nitroglycerine and other drugs had been given, but the treatment by suppression combined with other judicious treatment in control, diet, and the use of hypnotics, was the best plan to adopt. He pointed out the danger attending the deception of the patient by the substitution of *water* for the morphia. Once it was discovered it was apt to lead to a sense of indignation on the part of the patient, and a refusal to be again guided by her physician. The last state became worse than the first. Suicide might follow, as in the instance of a medical man whom he knew. He would place these conclusions before the society:— 1. The risk attending on the use of morphia in the treatment of affections of the pelvic organs in women is often not sufficiently recognized. 2. The influence of temperament had to be carefully considered in its administration, the hysterical and so-called neurotic temperaments being especially susceptible to the intoxicating effects of the drug. 3. In such cases morphia should be used only as a *dernier resort*, and rarely, if ever, for the relief of what may be said to be subjective pain. This is true of many cases of ovarian neuralgia and reflex ovarian pains. Also in those reflex spinal pains arising out of real or functional disorders of the generative organs of women, or in the insomnia arising from the same cause. 4. Its use is particularly dangerous at the climacteric. 5. The risk of morphia intoxication should be safeguarded against as far as possible — (a) By the medical man himself, save under very

exceptional circumstances, administering the injection. (*b*) Only the quantity of solution requisite for a limited number of injections should be prescribed at the time. The prescription, for safety's sake, might be marked "not to be compounded unless re-initialed and dated." (*c*) By not giving into patient's hands prescriptions for hypodermic injections of morphia. (*d*) All patients and their friends should be warned of the dangers attending the repeated administration of morphia. Morphia should never be administered from the mere importunity of a patient, unless there is a clear indication for its employment. Pain arising out of cancerous conditions and pain arising out of acute inflammatory states of the adnexa and peritoneum afford an immunity from the intoxicating action of morphia, and are indications for its judicious use. As a rule, after abdominal operations, patients do better without morphia. Lastly, friends and relations who are in the habit of injecting morphia should be made to clearly understand that circumstances may arise which might bring most disagreeable suspicions of either misadventure or design on those administering it.

THE TREATMENT OF INEBRIATES IN THE DISTRICT OF COLUMBIA.—Mr. Meredith of Virginia has introduced a bill for the treatment of inebriates in the District of Columbia. It authorizes the commissioners to establish a public hospital for the care and cure of inebriates. Such persons shall be admitted as are committed to the hospital by the police court or criminal court of the district, and the judges of these courts shall have power to commit, for not more than ninety days, (1) any person convicted of the habitual excessive use of alcoholic liquors who might be amenable to commitment to the workhouse; (2) such persons as may be recommended for treatment by the commissioners; (3) such as may voluntarily apply for admission, and pay for treatment not less than ten dollars a week. All moneys so received are to be handed over for deposit in the United States treasury.

INEBRIETY AND ALCOHOLISM AMONG CHILDREN.*

 BY DR. MOREAU DE TOURS, OF PARIS, FRANCE.

With a number of writers of the greatest authority we have often raised our voice with energy against the abuse the press sometimes makes of its liberty by giving currency to facts, the publication of which is a real danger to public morals, because of the unsuspected excitement they cause in minds which are, no doubt, not well-balanced, but which, without the examples so presented, might perhaps have escaped the evil contagion. It is nevertheless right to acknowledge that amid the multitude of these diverse facts there are to be found those which, when brought together and grouped, attract attention and are studied; but which, without this publicity of the press, would probably have remained in the condition of simple observations, scattered here and there in the collections of specialists. From the accumulation of these facts one is led to draw precious teaching, and to send forth a cry of alarm against the evil that is without cessation invading us, and at length to take the necessary preventive measures for struggling against the scourge.

It cannot be too much insisted upon that alcoholism is one of the human miseries which can neither be despised nor denied. This terrible passion ought to excite the attention of our times, arouse our vigilance, stimulate our thoughts. The plague is threatening, it increases unceasingly.

We have no intention of recommencing a study which has already been so often and so deeply inquired into by the most competent men, moralists, physicians, hygienists, etc. Our object is narrower, but not on that account less impor-

* Read at February meeting of French Temperance Society, and translated for *Temperance Record* of London.

tant ; and it is not without a deep feeling of sadness that we open a special chapter on alcoholism among children.

It is not seldom we read among the facts chronicled by the press stories of children picked up in the streets dead drunk. And these facts are not confined to our country ; they are equally true of foreign countries. As an example, we have a note from Vienna, which tells us that a school-master in the quarter of Leopoldstratt had to give up to his parents one of his scholars, who had arrived at his class in a complete state of drunkenness. The child confessed that in coming along the road he had drunk in a cabaret a quart of brandy. The journals on that occasion made the remark that this was unhappily not an isolated case, and that from time to time scholars were met in the street who were manifestly in a condition of drunkenness.

If we compare these facts with the observations occasionally published in medical journals, we are really amazed to see the important *rôle*, hardly recognized up to a certain point, which alcohol plays amongst the young. The causes which determine alcoholism among children are many and their origin very different. But, like the other affections, they may be ranged under two principal heads : Fixed causes and occasional causes.

In the number of causes under the first head the most important of all is heredity. This is not a new observation, for in all times there has been noted the evil influence upon children of alcoholism in their parents, and it is remarkable that when alcoholism is hereditary it manifests itself at the most tender age. Numerous cases we are able to give go to prove the importance that ought to be attached to the influence of heredity for the transmission of alcoholism.

But there is another form of hereditary alcoholism, if one may employ the word in this connection, which is less known. It is due to that which we shall call the observance of the traditions of the country or of the family. It is thus that we see a custom widely prevalent in the northern countries, and especially in Scotland, of making children,

in order to appease their cries, suck a plug soaked in very strong liquor, very alcoholic, of whisky, for instance, and to strengthen them, after weaning, by doses of the same liquors, more or less strong. At Leybach, according to Lippik, especially amongst the poor, it has passed into a proverb that it is necessary to give wine to infants in order to facilitate teething. At Vienna, in Austria, a recent inquiry established the fact that parents often made their children drink brandy, and, in consequence, they arrived at the school besotted with drink.

And in our days, in spite of all that we have been able to do in striving against such a tendency in our country, there are departments where alcohol reigns supreme. Tourdot, in his work on "Alcoholism in the Lower Seine," tells us that the domestic hearth is there, amongst others, a school of drunkenness for the children. However young they may be, they receive their ration of brandy on the great *fête* days. And thus is developed among the little Normans a gross taste for alcohol.

There are other authors who do not hesitate to put to the account of the treatment (medically) by alcohol, of which such a great abuse is made in our days, the predisposition to alcoholism observable in many children. We are certainly disposed to reprove the abuse which in our days is made of a treatment, of which, nevertheless, the efficacy is incontestable. Alcohol may be administered, but it is necessary to know how to use it without abusing it. In the administration of alcohol it is the strict duty of the physician to thoroughly examine his patient, to search into his antecedents, and if he discovers there the least trace of alcoholism he ought to abstain from treatment by alcohol. To give alcohol under such circumstances is to risk the awakening of a latent predisposition, a result that at any cost ought to be avoided. The remedy in such a case would be worse to fight than the disease. But it is necessary to regard it as a dangerous medicine, difficult to manage, and to administer it with precaution in order to obtain from it the good effects.

Under this condition, and this condition only, we repeat that it ought not to be dangerous, but useful.

The occasional causes, we have said, are numerous. But it is necessary not to lose sight of the fact that in the majority of cases, if not in all, the children who allow themselves to be borne along by wine are the hereditary, the predisposed. In the simplest and most frequent cases the child is thirsty; he is given wine or liquor, or he takes it himself. After a first draught he finds and avows "this is good," and he continues without mistrust. The facts detailed on this subject are not rare, and all are in similar terms. Here is an example: On the 19th of last May the police constables met in the evening on the quay of St. Bernard, two children of twelve and thirteen years of age, completely drunk. On being interrogated, these children confessed that they had broken into a keg of wine that was lying on the quay in front of the market-place, and that they had drunk, at first because they were thirsty, and afterwards because they found the wine good, and they continued to drink until they were completely drunk. Far from putting a curb on the marked taste which a child shows for strong liquors, there are certain parents, without conscience, without prudence, worthless, who on the contrary think it fun to urge the child to drink and to get tipsy, and by his drunkenness the unhappy child becomes the laughing-stock and the plaything of the wretches who are not ashamed to impose on his feebleness and inexperience.

It is sufficient to pass through certain quarters on a Sunday or a *fête* day, and then one is astonished to see at tables with their parents, at the doors of one of those low wine-shops which swarm in the workmen's districts, children of four, five, seven, and ten years of age, with a glass of wine before them. Does the child refuse to drink, there are reprimands — sometimes even cuffs are given because of his repugnance, and under the rule of terror he takes the poison. Is he ill after? Without being put about, the father answers, as one said to me: "This little

— is not able to take a glass of wine ; it will nevertheless be necessary that he habituate himself to it.” And another unconscionable one, whom I incidentally reproached for giving drink to his son of scarcely seven years of age, answered me : “ But, doctor, if you knew how gay and cheerful the little one is when he has drink ! And then, truly, he is so droll, so amusing, that he makes everyone laugh.”

In spite of all that I have been able to say, in spite of all the eloquence I have put forth in order to convince the father of the irretrievable danger to which he exposes his child, in spite of the blackest picture I have been able to paint of the miseries which he voluntarily reserves for his son, I have never been able to make him listen to the voice of reason. Such parents have treated me as a trouble, a bird of evil omen, and they do not understand, or rather they do not wish to understand, that a little wine from time to time may have a grievous influence on the future of the child. The father, working a farm, drinks daily, but is never tipsy. “ *He* bears up with the drink,” he says, “ and it is impossible the drink should work evil in the child.” What a sad destiny is reserved for this child ! Son of an alcoholic, he will soon become one himself, and that more quickly through the double influence of heredity and education. Note that this is not an isolated case. There are legions of parents who are so wanting in intelligence as not to understand all the danger there is in teaching their children to drink. Without regard to her dignity, and forgetful of her *rôle*, it is sometimes the mother herself who forces her child to drink. And there are unscrupulous shipmasters who, in order to get a maximum of work out of their apprentices and their cabin-boys, induce them, and themselves urge them, to drink. We are preoccupied at this moment with the traffic in spirituous liquors in the North Sea. The traffic takes place on board what are veritable floating taverns, and is becoming greater and more extended every day.

The dipsomaniac, who must not and ought not to be confounded with the alcoholic, may be and almost always is one predisposed by heredity; but in any case he is not a vicious person. He is partially delirious, the attacks intermittent; he is the prey of a veritable impulsive madness. This delirium manifests itself by paroxysms, and that is an essential characteristic. Dipsomania is not an appendage of men only; it is very frequently met with in women, and amongst young girls as they arrive at womanhood.

The form which intoxication assumes among children varies much. We may there encounter almost all the varieties that we see among adults. Nevertheless, there is one form more frequent — constant, we might say — and that is the form we may call *massive*. The child who has drunk to excess generally falls dead drunk, struck down. With him the first two phases of intoxication, that is to say, exaltation of the affections and of the intellect, pass most frequently unperceived, and without opposition he arrives at the state of comatose apoplexy, from which nothing will draw him. The form *furious* is equally observable; it is a veritable fit of acute mania. As to the form *gay*, it is but the first degree of intoxication which we have already pointed out.

The pathological manifestations may be ranged into two groups. In the first we place the diseases of the understanding, the affections, the morals (aberrations of the feelings, *delirium tremens*, etc.). In the second we place the physical diseases (cirrhose). We have examples of them, but it would be too long to enumerate them here.

A priori, the prognostic ought to be very reserved, for if at times through care and precaution, by means of hygiene, and above all by the aid of the parents, we can succeed in moderating the habit of intoxication in the child, if we are able thus to rein up his defects, it does not the less remain a terrible inheritance. The evil, we may be certain, will not lose its rights. It may be calmed for a time, but at the moment when we expect it the least it will be seen to reappear, not under the primitive form, which shall have been

cured, but under a new manifestation, affecting principally the nervous system (nervous madness), or the respiratory system (tuberculosis). It is in this way we discover those cases of false cures we have studied in a previous paper.

How often, after a cure which has been believed to be complete, an insignificant occasion has reawakened the evil which was asleep, but not destroyed! It is necessary never to pledge ourselves that a cure has been effected when the question is alcohol. "Who has drunk will drink," says the proverb, and never has proverb been more fully justified. Now, when the observation of every day shows us that persons who can understand the voice of reason fall again inevitably and fatally into their vice, we can understand how dangerous it is to maintain that the child who has once given himself over to drink will not recommence, one day or another, in spite of all that we may be able to do to correct him.

The cure of alcoholism in childhood ought to be looked at from three points of view, according as we have to struggle against the grievous tendency of heredity, the personal disposition of the child to give himself up to drinking, and the effects, acute or chronic, due to the absorption of alcohol. The fact cannot be disguised that the preventive treatment is the best of all, and the true preventive treatment in respect of childhood is the treatment of progenitors. In suppressing alcoholism in the parents, you suppress the terrible effects alcohol produces in the children. But this is an Utopia. Since the world was the world, man has always had recourse to spirituous liquors, and unhappily, alas! has not limited himself to the use of them. Very soon he has passed to the abuse of them. We cannot hope to be able completely to cure this deplorable mania. Let us seek to lessen it, to diminish it, and this will assuredly be a great step.

But how is this desired result to be arrived at? Who can prevent drunkards having children? It is often amidst the fumes of vice that the alcoholics are the most strongly

drawn to the pleasures of sense. Do you say that reason and good counsels will be effective? A moving picture of the fate he prepares for his children? The alcoholic will yield to your reasons; he will agree with you; he will promise you all that you wish, and there is no reason to doubt that he will do all this in good faith. But temptation is stronger than his promises; a glass is very quickly drunk, and the best promises fly away with the first drops of the treacherous drink. "The struggle against drink cannot be efficacious except upon the condition that society and the public authorities comprehend the extent of the danger, and recognize the pressing necessity of taking in common efficient measures against the all-powerful enemy."

Certainly the preventive treatment is the most efficacious for alcoholism in the young. But the evil having been acquired, what remains for us to do? What are the measures we have at our disposal, and what ought we to attempt in order to lessen the evil?

Here hygiene plays the most important part. Attention to hygiene by private individuals and attention to hygiene by the public authorities are powerful factors in the struggle against the scourge. Since it is common that men drink wine, is it not a chief point not to give him injurious substances which, even under the name of wine, brandy, liquors, etc., are only disguised poisons, and on that account all the more to be dreaded, since they conceal under an agreeable taste their dangerous and terrible effects? We agree completely with the proposition of M. Brouardel, who demands that only pure drink should be sold, without the addition of any injurious substances.

Is it not also, and above all, to the social elevation of the working classes that it is necessary to address ourselves? Certain it is that after a day of labor the workman, who returns fatigued and does not find his home a place where he may rest himself, goes to the tavern and there learns to drink. Is he blamable for this? Once on this declivity he does not stop, he cannot stop. He spends his wages on

drink, black misery enters his dwelling, but little he cares for that. He has taken his course. He drinks and drinks always, expends in killing himself that which he has painfully earned, and is indifferent to the sight of his children who cry for bread. To succeed in ameliorating this condition of things would not, it is true, destroy drunkenness, but it would be a great step in advance.

It must not be forgotten that the evil reigns as master among the upper classes, where are to be found all the conditions of comfortable living. We see men of the world giving themselves over to their disastrous passion without discredit, without shame. These are diseased, and we find such equally in the working class. But how many alcoholics have become such by frequenting taverns, who, in other surroundings and in other family conditions, would never have dreamed of following the example of their companions? There is here a great social question, which it is difficult to solve, it is true, but which is, nevertheless, not insoluble. When public hygiene shall have become what it ought to be, it is certain that alcoholism will be diminished.

When alcoholism is disclosed, and it is found to be an acute case, it is necessary to have recourse to curative treatment. Among children we have most frequently to do with cases of acute drunkenness. Monin has very well indicated what it is necessary to do in these circumstances. In the rarer cases of *delirium tremens*, the treatment is that which is followed with adults, but modified, according to age, after the admitted rules of therapeutics. In a word, the curative treatment is that of the symptoms.

The law of 1873, for the repression of public drunkenness and for struggling against the progress of alcoholism, enacts many penalties against those who are found in a state of intoxication. But they are applicable to adults and not to children. And thus, as in the cases we have cited, the child is not punished; he is discharged with a rebuke. The punishment, however light it might be, would be felt by the child, upon whom the apparatus of justice always pro-

duces a great effect. Who knows whether some punishment would not be an effective means of repressing his tendencies?

But should this action by punishment be taken against the predisposed, the hereditary? Evidently not; the fatal blemish cannot be made to disappear; it is almost certain that, sooner or later, the unhappy ones will succumb. These are only in part amenable to the judicial tribunals; it is for them and them only that we can plead extenuating circumstances. They should be placed under the physician rather than the justice. They are the diseased to whom it is necessary to apply the rules of a rigorous therapeutic. But be this as it may, we should not neglect the chances of safety, small as they may be; and although a punishment justly inflicted does not eradicate the evil, except in some cases, have we a right to neglect the chance of safety which is offered to us? Ought we not to struggle energetically by all possible means? It is for the legislator to frame the enactment we wish to see inscribed on the statute book for the suppression of drunkenness; and it is for him to furnish an arm the more for the fight against the scourge which every day invades us more and more.

To sum up:

Drunkenness exists among children, and is more frequent than people imagine.

It is observed amongst them in nearly all the forms in which it is found among adults.

In the majority of cases it manifests itself among the predisposed, the hereditary, the degenerate.

The prospect is most serious on account of heredity and the uncertainty of treatment.

The treatment ought to be principally, and above all, preventive, not neglecting, however, the treatment of symptoms and complications.

ALCOHOL AND PNEUMONIA.

BY JULIUS POHLMAN, M.D.,

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The action of alcohol on the different organs of the human body has been investigated so carefully and systematically that it almost seems impossible to add anything new on the subject. Looking over the literature we find abundant evidence of careful study of the question in its bearing upon heart, brain, liver, kidneys, and the digestive tract ; but, strange to say, the lungs have apparently escaped attention, although a few straggling notices hinting at the true relation between alcohol and the respiratory organs have been published at different times and in different countries. As early as 1855 Dr. B. Cohen (*Zeitschr. für klin. Medizin*, Breslau, 1855, p. 401) maintained that the abuse of alcoholic drink is a strong predisposing cause of death when the drinker is attacked by pneumonia. Out of fifty-seven such cases treated at the Breslau Hospital, twenty-four died. Another notice confirming this statement is given by Dr. William Osler in a report on pneumonia in the Pennsylvania Hospital. According to this authority, pneumonia is, as a rule, fatal if a drinker is attacked when under the influence of alcohol ; if cases of chronic alcoholism are excluded, the death-rate for that disease in the Pennsylvania Hospital, 29 per cent., would be only 8 or 10 per cent. A few reports are on record of autopsies made on children who died after drinking large quantities of strong drink, stating that the lungs were dark and congested, but no experimental evidence has been given as to the action of alcohol in the production of pathologic conditions of the lung-tissue.

In order to determine this question I made a series of experiments during the winters of 1890, 1891, 1892, and 1893, and the results are embodied in this report.

The animals used were dogs, male and female, mongrels of very mixed origin, picked up from the streets by the city dog-catchers. They ranged in weight from fifteen to twenty-five pounds, and were all apparently in good health, if voracious appetites and strong fighting propensities can be accepted as indications of physical well-being. Twelve animals were used during 1890-91, ten the following winter, and nine during the winter of 1892-93.

The experiments were simple. The animal, carefully etherized, received an injection of a quantity of commercial alcohol, varying from one dram to one ounce, into the trachea just below the larynx, by means of a large hypodermic syringe. After the narcosis had passed away the symptoms were noted, from hour to hour first, from day to day later, and post-mortem examinations made after a certain time, varying from half an hour to four weeks, gave evidence of the internal conditions of the respiratory organs.

The general symptoms were invariably the same, differing in severity only according to the quantity of alcohol given and the age, weight, and strength of the animal experimented upon. The terms age and strength are used guardedly, for the temptation is strong to say "idiosyncrasy;" otherwise it is difficult to account for the different effects produced by equal quantities of alcohol upon dogs of the same weight. For instance, two dogs, each weighing twenty-five pounds, were treated with a dose of two drams each, and one died after one hour, and the other after six hours; while two other dogs of twenty-four pounds weight, and two more weighing respectively fifteen and eighteen pounds, received the same quantity, two drams each, and all four survived and were as well as ever after four weeks. One dog, weighing eighteen pounds, died in five minutes after receiving two drams of alcohol, while another, of fifteen pounds weight, took *one ounce*, and recovered.

So, where there is a similar idiosyncrasy in dogs as there is in men, or whether the differing results were due to age and strength of the animal, is an interesting question open to discussion.

The symptoms in all dogs experimented upon were alike and as follows: difficulty in breathing, increasing with the advance of the inflammation set up in the respiratory passages by the action of the alcohol, until it finally resembled a wheezing noise and called into activity all the accessory respiratory muscles; stethoscopic examination gave evidence not only of the difficulty which the air encountered in trying to force an entrance into the bronchial tubes and air-vesicles, but also of the tumultuous beating of the heart while attempting to drive the blood through the capillaries of the lung. Copious expectoration of a bloody, frothy mucus indicated the progress of the disease.

As the animal weakened it usually pressed itself against the wall of the room with the thorax as much as possible resting on the floor, and displayed a constant desire for cold water, probably due to the feverish condition induced by the inflammation. No temperatures were taken, for after three thermometers had been broken by the struggles of the animals the attempt to gain correct information on that point was abandoned.

Post-mortem examinations always showed the lungs dark and congested, solid in some places, so solid indeed that these parts sank when thrown into water.

Cutting into the lung, the air-passages were found to be always filled with bloody, frothy mucus; even the animal that died five minutes after the injection, presented the same symptoms. The lungs were dark and congested and full of bloody mucus, showing the rapidity of the inflammatory processes and clearly demonstrating how *acutely sensitive the respiratory passages are to the action of alcohol.*

There is probably no danger of meeting contradiction when we define pneumonia as an inflammation of the lung-tissue, whether of bacterial or traumatic origin, of lobar or lobular form, need not concern us here, as long as we are satisfied that these inflammatory processes produce the phenomena observed in the respiratory passages during an attack of the disease.

Alcohol introduced into the lungs of dogs sets up a pneumonia more or less severe. Whether we call it a traumatic pneumonia, or a broncho-pneumonia, or coin a new name for it, will not change the fact.

On microscopic examination of such lung-tissue the air-tubes and vesicles are found to be partially or completely filled with immense numbers of red and white blood-corpuscles and large quantities of mucus, and present the same picture as that obtained from a slide made from the lungs of a child that died from broncho-pneumonia, and although one is from a human being, the other from a dog, the former representing a well-known type of disease, the latter an artificial form, the similarity between the two is certainly striking enough to prove that the pathologic condition of the lung-tissue is the same in both, and that the alcohol has induced inflammatory processes very closely resembling, if not absolutely like, those found in attacks of broncho-pneumonia in human beings.

Admitting then that alcohol *can* produce all the grades of inflammation of the lung-tissue from the mildest to the fatal form, according to the quantity used, we can perhaps understand to some extent why drunkards if attacked by pneumonia will succumb more speedily than the patient of temperate habits.

By virtue of the alcohol coursing with the blood through the lung-capillaries on the one side, and the alcohol exhaled with the breath, be it ever so little, filling the air-vesicles and air-tubes on the other side, the lung-tissue itself, so sensitive to alcohol, stands between two fires, so to speak, and must be in a chronic state of semi-engorgement, of mild inflammation, like the highly-colored nose of the drunkard or the engorged mucous membrane of his stomach.

Certainly such a state of affairs will change the normal condition of the cells of the lung-tissue and reduce their vitality, and in proportion their power of resistance to external influences; and if now a severe, acute form of inflammation, such as pneumonia, is added to the pathologic condi-

tions already existing, the lungs find themselves powerless against the attack of the disease, and the drunkard's death-rate from pneumonia illustrates the time-honored law which says that an organ or organism weakened by previous ills cannot compete with normal organs in fighting the battles against acute diseases in the struggle for existence, and the man of temperate habits, with lungs free from alcoholic inflammation, has from five to seven chances for recovery from pneumonia when the drunkard has only one.

TWENTY-EIGHT per cent. of the inmates of the mad-houses in Austria are drinkers. In the month of August, 1894, twelve drinkers suddenly became insane in Vienna. He further stated that drunkenness affects the increase of population. Out of 57 children from 10 drunken families, only 9 were strong enough to live; whereas out of 61 children from 10 families, where the parents were sober people, 50 remained healthy. Drunkenness increases crime. Fifty per cent. of all criminals committed their crimes through excess of drinking. In the years 1871 till 1875 the Viennese police alone were obliged to arrest 25,000 people for drunkenness. Dr. Roser says that what the country gains from the tax in the manufacture of spirits, it loses in its lunatic asylums, prisons, and its criminal courts.

Inebriety seems to be increasing as shown by the figures of the *Interstate Revenue Commissioner* for 1893. This report says that the sixty-five odd millions, comprising the population of this country, consumed 88,777,187 gallons of alcoholic spirits and 1,054,785,376 gallons of beer during the year. These gallons would make more than 6,000,000,000 drinks of whisky and nearly 13,000,000,000 glasses of beer, for which there was paid to the barkeeper \$1,226,258,000. The naked figures are sufficiently eloquent of the resultant amounts of misery, disease, and premature death.—*Food.*

THE OPIUM CURSE AND ITS PREVENTION.

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In a paper written a few years ago, entitled, "Morphinism in its Relation to the Sexual Functions and Appetite; and its Effects on the Offspring of the Users of the Drug," I gave a detailed account of eight families in which the mothers were addicted to the use of morphine. Since that paper was completed and read, I have had occasion to note the effect of the drug in a few other families, and the results have served to confirm the views set forth in that paper, *viz.* : That the children of mothers who are habitual users of the drug, in the majority of cases die within a week of birth, cyanosed from an incomplete development of the heart. Second : That if they survive the first year, they are puny, delicate, nervous children, lacking in everything going to make up a well-equipped boy or girl, mentally and physically. Third : Should any of the offspring of such mothers attain to adult life, they become either morphine habitués, or drunkards. That the effect upon the mother is such as to transmit to her offspring the disease as a heredity, just as tuberculosis—not that the disease itself is transmitted, but that "a condition, a soil, a nidus, or whatever you may please to call it, is handed down to the child, and some fortuitous circumstance develops the disease."

If this be a true picture, and I am constrained to believe that it is, a great responsibility rests upon some one to proclaim the evil everywhere and to enforce every possible means of preventing it. The most important branch of medicine to-day is that of prophylaxis. Disease is easier to prevent than to cure. To cure this curse, the using of the drug must be prevented. Once in its toils, to abandon the use of it is one of the greatest undertakings. It has been truly and aptly said, that to abandon its use is to suffer the tortures of

the damned. Further, without the full and free consent of the patient, and his or her hearty co-operation, to break the morphine habit is well nigh impossible. I would say nothing to discourage any one, but my own observation teaches me that it is far easier to abandon alcohol than opium. The using of opium is increasing daily. Public sentiment cries out more loudly to-day than ever before against the use of alcoholic drinks. Public opinion is against it. The dram-drinker is not countenanced in polite society. All business enterprises and corporations discriminate against those who use alcohol. The great railroad systems put as a first question to an applicant for a position in their employ: "Do you use alcoholic drinks of any kind? If so, how much, and what?" Not content with the answers of the applicant, his character upon that point is closely investigated at home where he is known. Should it appear that he uses intoxicants, he is at once refused a position. Further, an employe is at once dismissed if found at all under the influence of liquor. One drink is recognized as, to that extent, unfitting a man for a trustworthy position in the employ of the company.

One of the most important questions in all life insurance applications is: "Does the applicant use any stimulant in the form of any alcoholic drink?" Should it be shown that he is a regular drinker, he is at once rejected. The fraternal orders are all blacklisting saloon-keepers and bartenders.

These things are cited to show the current of public opinion. The retail sale of liquor is regarded by communities as disreputable, but are we not "straining at a gnat and swallowing a camel?"

Forty years ago the United States imported 72,000 pounds of opium; in 1880, 372,000 pounds; and in 1893, nearly 1,000,000 pounds. This increase is largely out of proportion to the increase of population and the legitimate demands of medicine. The medical and surgical world were never more united upon any one measure than on the effort to discourage the use of opiates in many diseases where it was formerly thought and taught to be *sine qua non*.

Within the twenty years of my practice, I can see that not more than one-fourth as much morphine is used now as was used when I began work. The teaching of to-day is, when in doubt as to the propriety of an opiate, do not give it.

The medical profession, then, is not to be censured for the increase in the consumption of morphine. Its use is continually discouraged by all reputable practitioners of medicine.

Of course in the last stages of incurable diseases, such as cancer and the like, a sufferer is excusable if he uses the drug, but not otherwise. The physician is frequently unjustly blamed because Mrs. A., or B., or Mr. C., or D., uses an opiate. In not one case in a thousand of this kind should any blame attach to the physician, because had he or she never taken a dose of an opiate except when it was prescribed by the physician there would have been no trouble; but once having found relief, the patient concludes that he can free himself from pain and at the same time save the cost of calling the physician, by bringing out the morphine bottle or the opium pill that had been put by for an emergency. Relief once obtained in this way invites another trial; soon the habit becomes fixed and the party becomes a morphine habitué, or an opium-eater or smoker.

Is the physician to blame in such a case? Nay, verily! He did right. The patient must shoulder the blame. The severity of the pain when the physician was called demanded relief, and a relaxation of the spasm of the muscles was necessary before the cause of suffering could be removed. For this purpose the opiate was given. The physician had nothing to do with the subsequent doses. Had they not been sold to the patient, he would not have been tempted and would not have fallen. A dose of an opiate, excepting pargoric or laudanum, should never be administered, save as ordered by a physician.

On September 13, 1894, this fact was most forcibly impressed upon my mind. I was called to see a two-year-old child suffering enteritis. The patient had been well

treated by the attending physician, but with no improvement. On consulting in regard to the case, a course of treatment was readily agreed upon, and it was remarked by the attending physician that he had not been able to quiet the child with what he considered full doses of an opiate, repeated every two or three hours. The mother, when called and questioned in regard to the dose of paregoric given, stated that she was administering a full half-teaspoonful every two hours, but that it had no effect upon the child. To an inquiry as to whether she had ever given the child any form of an opiate, she answered that she occasionally gave it a small dose of morphine; that she began using it for the relief of crying spells, when younger. Asked to show how much morphine she gave at a dose, she measured out a full third of a grain, for a child about two years old—fully seven times the usual dose. This at once revealed why no effect had been obtained from the medicines already administered. This dose of morphine was measured from a bottle produced from the family medicine shelf. No physician had ever advised morphine for the child.

Too often is it the case, the first investment made in a family when a child is born, is a bottle of "soothing syrup;" "Bateman's Drops;" somebody's "quick cure for colic," or some such-like remedy. All of them are sold warranted to contain no morphine or opium. The various consumption cures and cough remedies, with high sounding titles—too many, with the certificate of some business man, lawyer, or preacher appended, attesting their virtues—put upon the market at the present time and sold over the druggists' counter, are to blame for many a ruined member of society, cursed with the opium habit. This is not overstating the matter—rather understating it. Ninety-nine out of every hundred of these various preparations sold contain opium in some form although they state upon their faces that they contain no "morphine." They may not contain simply morphine, but the foundation is some preparation of opium, and they sell because they stop the cough and make the "patient

feel good." A dose of paregoric, laudanum, opium, or morphine would do the same. Once having obtained relief, that patient advises some one else of the wonderful relief and benefit he, or she, obtained and the new victim tries it, and soon another fully-fledged opium habitué results.

Should a dose of such stuff be given to the offspring of a morphine-using mother, the smouldering fire at once begins to burn. The thing necessary to develop the habit has been given—the match has been applied to the rubbish pile, and it at once blazes up and burns with a flame that can not be subdued. Doctor Crothers, of Hartford, Conn., cites many cases in proof of this statement. One will answer my purpose. "To parents, both neurotic and probably opium-users, a child was born. They died, leaving the child nervous and irritable. Morphine was accidentally given to quiet it, and from that time forward it became delirious without a daily dose of morphine. At five years of age, it died a confirmed morphine-user." The literature of the day abounds in such cases. Was the physician to blame there? Nay, verily!

I have, in my own experience, met with a similar case where two sons, born to an opium-eating, morphine-using father, shortly after budding into a promising young manhood, began the use of whisky and morphine, and soon became wrecks mentally, morally, and physically; one dying not long since; the other being, in every sense of the term, a wreck. Though living, he is worse than dead.

Dr. Jules Rochard, in *Le Union Medicale*, draws a gloomy picture of the increase of the morphine habit in France and elsewhere. The habit, he finds, becomes incurable at the end of six months of indulgence. The fair sex and the doctors are, in his opinion, most deeply addicted to the use of morphine. Women seek less to hide the vice than do men. As a rule, men, and especially medical men, take the greatest pains to hide their vice—hence the number of those who use the drug cannot be correctly estimated.

In many cases parties have used the drug for years without being suspected of such a habit. The current literature

abounds in many such cases. A few years ago I was treating a medical friend in a case of pneumonia. I was much worried by the irregular effect obtained from the medicines administered, and, at the time, suspected that an opiate was being used, but could get no positive proof of the matter. A few days since, I learned beyond question that my quondam patient was a confirmed morphine-user. These are not exceptional instances. Numbers of just such cases, not only among medical men but also among the laity, are cited in Hare's *Practical Therapeutics*. This ability to conceal the habit is one of the distinctive points in the use of alcohol and opium.

A native Chinese preacher, in comparing the two vices, stated that he found this one striking difference between the effects of the opium vice among his countrymen, and those produced by alcoholic intemperance among Americans: "When the Chinese opium-smoker comes home at night, he does not abuse his children and kick his wife; his wife kicks him."

The use of opium in some of its forms is, in my opinion, on the increase, and while the medical profession cannot be blamed therefor, it should, however, be held to some extent responsible for the state of affairs, because, standing as we do or should upon the watch-towers, we do not proclaim boldly to the families under our charge the dangers lurking in the use of all such remedies. We do not make proper inquiries about the progress of our little ones, and keep the parent posted upon the various household remedies administered. Many deaths have been reported of children a few months old, from unknown causes, where a careful inquiry would show beyond cavil that they were cases of opium poisoning.

I need not pursue this branch of my subject any further. Any one by a little investigation can establish the truth of it. The druggist sells the medicine, which he buys, for the money that is in it. He does not trouble himself about the composition of it. He reads the label, notes what it claims

to cure, and when a human being calls for a remedy to meet a certain ailment, he recalls the fact that he has on his shelves a bottle warranted to cure just such a case. He takes it down, assures his victim of the efficacy of the mixture, and sells it to him, pocketing at the same time a handsome profit. The remedy may do more harm than good, yet the druggist is not responsible. He has the stuff for sale, and the man wanted it and got it.

This could be prevented: First, by allowing no patent or proprietary medicine to be sold over the counter, which does not show on its label its true and exact composition. Any falsification in such matter should be punishable by a heavy fine. Second, no one should be allowed to sell drugs who is not a qualified pharmacist. In other words the present pharmacy law should be improved and made to apply to the whole State.

Were these ideas carried out and enforced as laws, all "soothing syrups," "consumption cures," "microbe killers," and such like would show upon their face their exact composition; and the mother would know with what deadly stuff she was drenching her child; would realize how rapidly she was laying the foundation upon which, in time, would develop a fully-fledged opium-eater.

In the next place, the law regulating the sale of poisons should be rigidly enforced. It reads as follows:

Milliken and Vertrees' Code. Art. E., Sec. 5635. "Any person who sells or delivers any poisonous liquid or substance, in addition to having the word poison printed or written on the label as now required by law, shall note, in a book kept by such person for that purpose, the name of the person to whom such poison was delivered, the date of delivery and the kind and amount of such poison so delivered, and shall keep such book open for public inspection."

Sec. 5636. "Any person violating the provisions of this article shall on conviction be fined not less than \$20, nor more than \$100. This article shall not apply to the prescriptions of regular practicing physicians."

Sec. 5637. "Any person, except a practicing physician in prescribing for a patient, who sells and delivers any tartar emetic, laudanum, morphine, or other drugs or medicines, without having the common name thereof written or printed on a label attached to vial, box, or parcel containing the same, shall on conviction be punished as provided in the preceding section."

Sec. 5638. "Any person who sells to any child under ten (10) years of age, any poisonous liquid or drug, without an order in writing from the parent, guardian, or other person having the legal care of such child, designating such drug either by its name or effect, shall on conviction be punished as provided in Section 5636, and may also be imprisoned in the county jail not more than three months."

The provisions of the law are plain. Morphine, opium, and laudanum are poisonous, and will kill with as much certainty as will strychnine, arsenic, and such like poisons.

Not one druggist in one hundred complies with the law. No register is kept in which to note the sale of poisons. Any thing called for is sold, and no questions are asked, except, "Where is the money?" When that is produced, the sale is completed and the drug is delivered. Often and over, a child of less than ten years of age steps into a drug store with a fifty-cent piece and a small scrap of paper, inscribed with one word "morphine." No name is signed. No questions are asked. The bottle of morphine is wrapped up and passed to the child over the counter. A death may follow on the sale, but the morphine cannot be traced. No register is kept in which the sale is noted, and hence no proof exists that A. or B. sold the poison, and no prosecution follows. Druggists say that the amount of opiates sold is beyond the comprehension of the average doctor, even; that they sell it day by day without knowing or even inquiring for whom it is bought. Such should not be the case, but so long as any irresponsible party, or child of tender years can buy without let or hindrance, the awful traffic will grow.

If the laws were enforced to the letter, and the name of

the purchaser of every grain of morphine entered in a public ledger open to the inspection of friend or foe, where the buyer did not present the prescription of a reputable physician for the drug, a halt would promptly be called. Even a chronic opium-user would draw back and hesitate to allow the public to know the quantity of the drug he or she consumes, for it is an incontrovertible fact, that open and notorious morphine habitués will always minimize the amount of the drug used. Time and again, in answer to the question as to how much the individual used, have I been given a quantity of about one-third or one-fourth of the amount that I knew was consumed. The opium-eater does not want the public to know how much he consumes. The habit is carried on in secret for years, till it bursts upon the public in some unexpected way.

The user of the drug will sacrifice money, place, position, honor; nay verily, in some cases even virtue itself, to obtain the vile stuff, and until some sacrifice of this kind is made upon the altar of appetite the habit remains concealed. It is a habit more seductive than alcohol, because, so to say, for a long time it can be kept as a private vice, while the habit of using alcoholic drinks cannot be kept long concealed. The odor upon the breath, the bloom upon the nose, the flushed face, the protruding abdomen, and many other signs soon proclaim the dram-drinker, while opium can long be indulged in without being generally known. The sleepy state as the drug wears off can be accounted for by a rest broken by watching a sick friend, or an undue nervousness from some cause.

The female sex does not often, in the country and small towns, become addicted to the use of alcohol, while opium claims more of them as its devotees than of the male sex. The latter attracts men and women; the former, as a rule, men only.

If the vicious habit, the use of opium in any of its forms, imposed a penalty only upon the person using, then the damage done would not be so great, but the unborn child

suffers—the evil is entailed. The sins of the mother are visited upon the children of even the third and fourth generations. The child, through no fault of its own, must suffer from the evil habits of one or both of its parents. This state of affairs should not be. The strong arm of the law, which looks closely after the moneyed interests of the child left an orphan, should be invoked to prevent a far worse condition than that of a moneyless orphanage. The child with no constitution at all, or with one leaning to vice and immorality, is a proper charge upon the state. If the state does not engage in prophylaxis, later on she will find that curative measures are both costly and, in many cases, without favorable results. Let, then, the physician do his part, and the laity do its part. Let both see that the existing laws are carried out to the letter: let them work together to get better laws enacted, and a great step will be taken in the fight against opium. Prevention is better, and more available in this instance than any other course.

As both a preventive and a curative measure, all chronic inebriates and opium-eaters should be committed to the insane asylums for treatment, and kept there until completely cured. No half-way measures should be taken in such cases. Laws should be passed broad enough in their scope to reach all such cases, and so drawn as to meet all objections that could possibly be urged upon the grounds of personal liberty. Opium-users should, to all intents and purposes, be treated as persons dangerous to the public, and not permitted to be at large.

The insane dodge is set up by them, when they violate the laws of our State, and this method of treatment simply would recognize the possibility of the existence of such a condition.

This paper has been written to air no pet theory of my own, but to invite the attention of the society to a great and growing evil.

1. Make our druggists obey the laws. Protect ourselves against them.

2. Let the patients know that if they will use the drug the unborn generation shall be protected, so far as it can be done, by putting the users where the drug cannot be gotten and the habit is broken.

TOBACCO AND BLINDNESS.

The Australian papers have recently published accounts of an epidemic of blindness in horses pastured in a district on the banks of the Darling. The horses grew very gradually blind. It was suspected that their infirmity was due to eating the leaves of the Australian tobacco, *Nicotiana suaveolens*. This plant began to grow in the affected district shortly after a flood, and the epizootic blindness followed. Baron Ferdinand von Müller, who has written on *N. suaveolens*, also discovered that a similar plague of blindness among horses in Western Australia arose from the animals feeding on a plant known as the grass lily. The whole question is discussed by Dr. Husemann, of Göttingen, in the *Deutsche med. Wochenschrift* of October 25. An infusion of the native tobacco leaf quickly killed a purblind stallion from the affected district. The chief point of interest in relation to "tobacco amblyopia" in man is the long time which this process of poisoning took to blind the horses. The blindness often took two years to become complete. It appeared to be incurable. The beast showed no signs of disease elsewhere, a blind mare and a half-blind horse being able to go 600 miles at easy stages to a veterinary station. Thus, as in man, tobacco amblyopia is not incompatible with bodily health.—*British Med. Journal.*

PARESIS coming on from syphilis and associated with excessive use of spirits is not uncommon, and is often masked and not recognized. Cases of inebriety are often paretic with a syphilitic origin, and require very active medication, and even then are incurable. Traumatism is often associated and requires careful diagnosis to eliminate.

SOME PERSONAL OBSERVATIONS WITH NITRATE OF STRYCHNIA IN THE TREATMENT OF INEBRIETY.

BY DR. E. T. BUCK, BROOKLYN, NEW YORK.

Inebriety may be divided into three classes, *viz.* : I, Habitual ; II, Periodical ; III, Dipsomaniacal.

Patients of the first class respond kindly to treatment, and the best results are obtained. Under this heading we find those who, under a press of business or business reverses, resort to the use of alcohol.

The man who is crowded with business cares or worry becomes tired out. He takes a drink to keep up his strength. It is not long before one drink is insufficient, and he naturally turns to alcohol, and where one glass sufficed, he now takes more. The stimulating effect of this soon becomes *nil*, and he finds that it is impossible to go long without spirits. It is at this time that the nitrate of strychnia given in small doses (hypodermically) is of great value if the treatment is continued long enough. Alcohol has been the cause of the downfall of many men and women, and if science has taught us that by the use of any drug or combination of drugs this craving for alcohol can be allayed, if only temporarily, it is a blessing to mankind. Nitrate of strichnia has proven great in the cases in which I have tried it. I take one grain to the ounce of distilled water, adding enough peroxide of hydrogen or pyrozone to keep the solution. Of this I inject ten to fifteen minims three times a day for the first week, night and morning the second week, and daily (preferably the morning) the third week.

There are two kinds of patients of the first class, *i. e.*, those who take the treatment because they themselves want to stop drinking, and those who place themselves in your

care to please somebody else, and not as an act of their own volition. The latter class is much more difficult to treat, as they will not try to help themselves. During the first few days visitors should not be allowed, and the patient should have as little excitement as possible. Dr. Crothers, Dr. Arnold, and others of experience give fluid extracts in place of tinctures, and in some cases an aqueous solution, where any amount is used or the remedy is used for any length of time. Patients suffering with this disease are extremely sensitive to alcohol, and the greatest care should be observed in giving anything which contains it, even to the slightest extent.

To illustrate the subdivision of the first class, *i. e.*, habitual inebriates, I give the histories of two cases that I have had under my care :

Mr. X. *Æt.* 30. U. S. Married. Clerk.

Father always healthy, never drank any liquor, and would not allow it in his house. *Mother's* history good. Patient came to me with the history of having drunk in moderation since twenty-first birthday. Had been obliged to do considerable extra work, which caused him to be at his office nights, and had taken a drink to brace himself up. Felt so much better that he continued the practice. Soon found that he wanted more than one drink, and not very long after he began drinking he was unable to eat his breakfast until he had something in the way of alcohol to give him an appetite. Had up to the present time been a man of regular habits and spent most of his evenings with his family. Now if he goes home early the children bother him. He reads his paper and then goes to sleep. About the time everybody else is going to bed, he wakes up and must have a drink. He meets acquaintances, and instead of one glass he has several, and goes home in a very poor condition. His wife has reasoned with him, but to no avail, and his friends have talked to him about his drinking, but he derives no benefit from them. Has tried several times to stop, but could not. When he consulted me he had been drinking for three months.

Treatment given hypodermically, *ter in die*, for first week, and at the end of fourth day did not care for alcohol. Nervousness and sleeplessness controlled with full doses of bromides, fluid extract cannabis indica, and trional. In this case trional was almost a specific. During second week gave treatment morning and night, and patient took long walks in the country, which did a great deal of good. Slept well and appetite improved.

Third week. One treatment per day, and was able to attend to his business. At this time I stopped the use of the hypodermic and gave tonic containing the nitrate of strychnia and arsenic, this tonic to be continued for a considerable length of time, varying the combination of drugs from time to time according to circumstances, but using the strychnia and arsenic as a basis. It has been over a year since the patient first came under my care, and he has not touched a drop of liquor since.

The second case, one that came under my care the same day, is in some respects quite different.

Mr. G. Æt. 35. Married. Painter.

Family history poor. Father had always been a heavy drinker, and for the past few years has had dipsomania and has had to be confined. Mother used to have periodical spells of heavy drinking, which would last for ten days or two weeks at a time. Would average six of these spells a year. Could get no history of any other trouble in either parent. Patient came to me at his wife's request, and, although he promised to do what he could to stop his drinking, still retained the idea that very little, if anything, could be done for him, as he had been to several physicians in years gone by, and received no benefit from them, with the exception of building up his appetite. Did not act as a person who would be glad to rid himself of the habit, but rather as one desirous of pleasing somebody else. Began treatment at once, and he did fairly well for about twelve hours. He then began to get restless, and on his wife's leaving the room for a few minutes, he arose, dressed,

and went out before anyone knew of it. Some friend found him and brought him home. When I saw him, shortly afterwards, I gave him twenty minims fluid extract cannabis indica. He had made the most of his short period of liberty and was well under the influence of alcohol. I now took the precaution to confiscate his clothing, and after a while succeeded in getting him to the state where liquor had no charms for him, and he remained in that condition for over a year, and had every prospect of continuing, but on losing his position he began drinking again, and I am told that he is as bad as ever.

One thing of importance in treating inebriates at their homes (virtually without restraint) is to gain their confidence from the first. In connection with the medical treatment, the diet and hygienic surroundings must be considered. Plenty of good wholesome food, and as much milk as may be desired. Long walks through the country are of considerable benefit. Patients should be required to retire at a regular hour, say ten o'clock, and rise at seven.

The second class, *i. e.*, periodicals, are much more difficult to treat. The physician cannot be too guarded in his prognosis as regards a permanent cure. Very few of the "cures" that are reported can be authenticated. The most the physician can hope to do with this class of patients is to stop their drinking for the time being and get them into such a condition that they will be able to attend to their business, and, as a rule, that is all they want you to do. The period of abstinence will, of course, vary with each case. I have known patients who have been used to going on "sprees" every three months, to go a year and more after being treated without "breaking out" again. As in the first class, the craving for alcohol ceases after the first few days, after which time a little more liberty may be allowed. As this class of patients are so liable to relapses, I advise that somebody be with them when out of doors, for a week or ten days. After that, if the attendant's report is favorable, they may be trusted to go alone. Early rising and retiring to be

strictly followed out, and a brisk walk of half an hour before breakfast will be found advantageous. The following history will illustrate :

Mr. T. Æt. 30. U. S. Married. Merchant.

Father was a man that used to have his "sprees" about every three months. His health was fairly good. Further than that patient refuses to give family history. I learned from outside sources that the last few years of his father's life were spent in a retreat.

Patient began drinking when eighteen years of age, and says that ever since his twentieth birthday he has had two "sprees" a year. Says he can no more help drinking at those periods than he can stop breathing. During the rest of the year he is a "teetotaler." A spree with this patient usually lasts two weeks, and during that time he can do no work, does not eat, and more than half the time does not know where he is or what he is doing. His wife came to me to help him to "sober up." My first treatment was given when he was sleeping off the effects of a five days' "steady drunk." On awakening he wanted to go out; said he'd go, and if he did not get his clothes would go without them, but after being reasoned with, decided it would be better not to venture. Suffered considerably with tremors, but these were controlled with bromides, and sleep induced by trional. After third day did not care for liquor. Appetite returned and slept well. This patient took long walks during second and third weeks, and was in good condition at the end of that time and able to attend to business. He reported once a week for a while, and then once a fortnight for a period of four months, and had no desire for liquor, but when six months had passed and he was about to make me his last visit, I noticed unmistakable signs of his getting ready for another spree. I put him under treatment for a week and aborted that attack. He has been very steady up to the present time, but I should not be surprised to hear of his backsliding at any time.

Those patients coming under the third division, *i. e.*,

dipsomaniacs, or true inebriates, are essentially institution cases, and unless they are able and willing to have trained assistants with them all the time, it would be very imprudent, if not impossible, to care for them in their homes, and to my mind should not be attempted, as they are liable to do themselves, and possibly others, harm.

Even if they are in a position to have trained assistants, it is an open question whether they would not do better if they were placed in some institution where they would be under the proper kind of restraint, which they could not possibly have when cared for in their own homes.

SOME FORMS OF INTOLERANCE OF ALCOHOL AND THEIR PROGNOSIS.—Dr. Smith calls attention to certain forms of alcoholic intolerance, and finds that those addicted to narcotics bear alcohol badly. Neuropathic subjects are also intolerant, but the outlook is favorable if the physician understands the circumstances, on account of its easy suggestibility, otherwise it is unfavorable. Psychopathic intolerance, with moral insanity in a more or less pronounced form, offers a gloomy prognosis, for relapses will be frequent. In epileptic intolerance one should determine if the epilepsy set in before or after its use. He is inclined from his observations to believe in an alcoholic epilepsy where small quantities of alcohol provoke pathological conditions of drunkenness, half conscious states with an inclination to wander about, and finally pronounced epileptic seizures. Contrasted with the seeming gravity of this affection the prognosis is extremely favorable, as the patients are easily convinced of the cause. Relapses are frequent from such slight causes as the communion cup, wine sauces, etc., as but a few drops suffice to demonstrate the intolerance. With previously existing epilepsy alcohol may have been taken as a sedative with transitory beneficial effect, and to ward off the anxiety of a seizure larger doses are taken, and thus the disease is aggravated. After withdrawal the attacks frequently rapidly decrease or disappear.—*Medicinische Neuigkeiten*, No. 48, 1894.

INEBRIETY IN WOMEN.

BY DR. ANDREW WILSON OF LONDON.

Of late days much interest has been taken in the topic which heads this article as its title. The *Daily Telegraph* started a discussion on the subject a short time ago, and, as is usual in such cases, a mass of opinions, suggestions, and propositions in the way of cause and remedy was elicited in the course of the abundant correspondence which ensued. Perhaps the discussion is only one phase of the inebriety question which is everywhere being "boomed" at the present time. There appears to have been an awakening on the subject of intemperance all round, and an earnest desire has been aroused once again in social history to get at the root of this great social evil, and as far and as quickly as possible to modify it or "reform it altogether."

The special phase of intemperance — that among women — has, of course, many very pathetic and heart-breaking phases of its own. First and foremost, there is the loss of self-respect, which is more to a woman than it is to a man. I say this advisedly, because I think it is probable that a lapse in any direction on the woman's part is attended with much more serious consequences than a similar slip on the part of the man. A woman's self-respect is her all. She is or can be damaged nowhere more severely than in her own eyes. The lowering of the standard of moral worth is to her an irreparable loss. She rarely recovers from the blow or event which she knows or thinks places her at a lower level than her sister-women.

Physicians are commonly of opinion, expressed as the result of experience, that the reclamation and cure of a drunken woman is a task of extreme difficulty. They will tell you that for one man who pulls himself together and

gets straight again, there are hundreds of women who are irreclaimable and incurable. I say the reason why the cure of inebriety in women is so rare depends on the fact that the loss of self-respect means so much more in the way of despair to the woman than it does to the man. And there is another reason still. Society, which looks leniently upon the faults of men, judges with Spartan severity the slips of women. For this, women have to thank women. It is they who are hardest on the erring sister; theirs is the voice lifted loudest in her condemnation; theirs is the hand which points to the streets; and theirs the sentence which ostracises their sister forever as a social pariah. The case of the man is very different. He is always treated, however many his faults, under a social First Offenders Act. When people talk, as talk they will and do, about the necessity for preserving intact the purity of society, they conveniently forget that there are two parties to be dealt with, and that the attainment of the social millennium is only to be accomplished by the condemnation of the man equally with the ostracism of his victim. But, as Rudyard Kipling says, "that is another story" altogether.

The recent discussion on drunkenness in women has elicited an opinion—I can hardly call it a fact—that inebriety is on the increase among females. Lady Frederick Cavendish, and other social reformers, boldly assert this opinion as true. The tipping of the East End ginshop is said to be reflected in the boudoir of the West End. The craving for stimulants, it is held, follows upon the life of unnatural excitement many women lead, and this may possibly be perfectly true.

The question of remedy is perhaps as difficult of discussion as that of the whole drink-traffic or of prostitution itself. Personally, I scarcely see that abolition of the drink-traffic will better an evil which reaches far below the surface of things on which the public-house stands. Limit licences, and you only increase a monopoly which, as things are, exists in full force. I do not believe legal measures alone will ever

touch the root of drunkenness either in women or in men. They may palliate the evil ; they can never cure it.

Regarding the question from the biological standpoint, one seems to get a little hope from the consideration that to remedy evils of our constitution we must work constantly, expecting to influence the living host by degrees and by small variations rather than by fits and leaps and starts. In every living species we find those who go to the wall ; sad fact though it be, these represent the wasted lives — the suppression of the unfit, in a word, which clears the ground of those who cumber it. Are we, then, working unconsciously to a better state of things through all this terrible sacrifice of health and hope and life ? I would fain hope so, although the prospect, I admit, is depressing enough as it stands.

Agencies are happily at work around us which must influence the question of inebriety in time. Education is doing much, and example is perhaps doing more. The spirit of the time is in favor of moderation, abstinence, and a higher standard of life all round. I say so, despite the fact that Cassandras are warning us that society is rotten to the core, and that the worst days of Rome are fast being repeated in our midst. Perhaps all this is inevitable from the rate at which we live. Each day of Europe is really "a cycle of Cathay" ; and we must pay for the pace at which we go.

It seems absurd for us to expect that, in a complex system of civilization like ours, we should have perfection of life and living attained so quickly as philosophers of an ultra-hopeful turn of mind would expect. "Slow and sure" is the way of life all round ; and surely we may look with some hopefulness to the decrease of inebriety among men and women alike, when education and like agencies have had time to make their mark. Meanwhile, if there is no panacea for the evil, there is no need to despair. While we wait for better things no man need find in waiting an excuse for not putting his hand to the plough, or for delaying to work as best he can for the bettering of our life as it exists to-day. — *London Post.*

Abstracts and Reviews.

REPORT OF THE ELLIKON HOME ASYLUM FOR INEBRIATES IN THE CANTON OF ZURICH, SWITZERLAND.

The following extracts from the annual report of this asylum will be of interest :

The rules of admission require a written agreement to remain in the home for not less than four months. In the case of wards and persons in receipt of charity, the agreement may be with the legal representative of the inebriate. The cost of maintenance must be guaranteed. "When there is want of room, cases holding out the best prospect of cure and Swiss subjects have the preference. Discharge follows on the expiration of course of treatment. If the cure is not yet sufficiently established, a new agreement shall be tendered."

With regard to the treatment in this home, we read :

"The main principle for the treatment of inebriety is complete abstinence—that is, entire abstinence from all alcoholic drinks. For the drunkard every form of alcohol is a poison which destroys him mentally and bodily. He must make the resolve to give it up for the whole of his life if he would be free from the debasing slavery of drink. Accordingly the principal, his family, and the entire staff must abstain from all spirituous liquors, so that in the whole house no mischievous example may be set to the inmates. The institute will, therefore, form a temperance community, whose members shall set before themselves the ideal and moral duty of zealously fostering and spreading this moral reform amongst inebriates. In the practical work of the moral elevation of the inmates of the institute each must, without exception, take his part according to the measure and char-

acter of his capacities. In work, of whatever kind it may be, lies the best means of strengthening his bodily and spiritual powers, above all his weakened will and character. The work accomplished by the inmates falls to the profit of the institution.

“With regard to religion, while all compulsion of special creeds shall be avoided, moral and religious restraint and consolation, indispensable for the higher working of the institute, shall be enforced and fostered with love and zeal. The principal shall, every day after breakfast and after supper, hold a religious service, which all inmates and staff, except the sick, shall be required to attend. Moreover, the creeds and religious wishes of the inmates shall be respected. Sundays, as far as circumstances allow, shall be taken up with Divine service, reading, general walks, conversation, and spiritual co-operation in combatting drink by the study of suitable works.”

The principal must devote his whole time to the institute and have no subsidiary calling. He administers the institute, has control over the inmates and staff, orders the occupations of the inmates, and presides over the same. His wife has to supervise the kitchen, and the sewing and washing, with the help of the necessary assistance.

“The introduction of any alcoholic liquor into the house is most strictly forbidden. Every inmate and former inhabitant of the institute is strictly forbidden to partake of any drink containing alcohol, supper excepted. When medical precautions render it absolutely necessary to order wine for an inmate of the institute, then and then only may this be allowed in the form of a medical prescription under the strict control of the principal, with full notice of the amount, and a written intimation of the fact to the president of the committee of administration.

“As a rule no inmate may leave the institute during the first three months, not even with relations or guardians. Later on permission to go out is granted by the principal according to the circumstances and condition of the inmate.

The keys belonging to the boxes and other receptacles of the inmates remain in the possession of the principal. It is strictly forbidden to send food, liquors, medicines, money, or postal orders to inmates. It is strictly forbidden to inmates or attendants on their walks out, or on any other occasion, to visit inns or touch alcoholic drinks. Such acts will be visited by instant dismissal by the committee of administration, or in special need, by the principal. Inmates are required upon their honor to hinder such offenses, or to report them at once to the principal. . . . No inmate may have money on him. Money brought must be left by the patient at the time of entering the institute with the principal, a receipt being given."

The fourth yearly report of this institute, that for 1892, shows that there was one patient under twenty and three between twenty and twenty-five, out of a total of sixty-two. The following table shows the result of the home treatment as regards cure or reformation, and it is gratifying to note that the percentage of those who have been benefited has increased each year, while the percentage of those who have relapsed has decreased :

	1889.	1890.	1891.
	Per cent.	Per cent.	Per cent.
Have remained abstainers.....	27.3	33.3	37.5
Have remained temperate.....	27.3	40.0	32.5
Relapsed.....	45.4	26.7	30.0

"The principal cause of cases of relapse, of which we have still to complain, is the short time the patients stay in the institution. It generally needs some months before an alcoholic subject has so far recovered that he has a true insight into his circumstances, and shows nothing morbid in his train of thoughts. A much longer time is needed before the patient's character and will is sufficiently strengthened that one can confidently trust him to the trials and tempta-

tions of social life. The average term of five and one-half months in the case of patients who have been discharged this year is therefore too short; in most cases the duration of cure should last twelve months. . . . The state should not only, under certain circumstances, bear the entire cost of maintenance, but, when necessary, support the family during the absence of the bread winner, and in such a way that the support should not assume the character of charity."

In the canton of *St. Gall* there is established an asylum for inebriates. In 1891 laws regulating this were passed as follows:

"Persons who habitually abandon themselves to drunkenness can be placed in an institution for inebriates. Art. 2. The duration of their stay in the said institution shall be, as a rule, from nine to eighteen months. In cases of relapse the term shall be correspondingly prolonged. Confinement in such an institution shall ensue—(a) by voluntary application; (b) by a declaration of the council of the commune.

"The costs of treatment in an institute for inebriates shall be defrayed out of the patient's own means. If he is without resources, or the costs of treatment are too heavy for his family to incur, they shall be levied on the poor rates in accordance with the existing legal prescriptions. Where it appears necessary, the state shall contribute to the cost of maintenance in the institute, and in exceptional cases a proportionate sum for the maintenance of his family during the time of the patient's treatment.

"One month before expiry of the course of treatment the managers of the institute shall furnish a report to those authorities who committed the patient to their care, and if the cure is not yet complete it can be prolonged within the limits of the time established in Article 2.

"During the time of treatment a temporary guardian can be appointed to represent the patient concerned. The same can be done even before transfer into the institute, as soon as a serious weakness of will consequent on an excessive use of alcohol is proved to exist by medical certificate."

HYPNOTIC SUGGESTION FOR ALCOHOLISM. — Bushnell (*Med. News*) reports twenty-three cases in which hypnosis and hypnotic suggestion was the line of treatment resorted to for alcoholism. In no case did he fail to hypnotize the patient. Eighteen were hypnotized on the first attempt, one on the second, one on the third, and one on the fifth.

The method was usually that of requiring the patient to fix his gaze on an object while the operator stood behind him and stroked the forehead evenly with both hands. Generally the patient's eyes close spontaneously in from two to ten minutes. In some cases they remain open and require to be closed with the hand. A more effectual but less agreeable method, is to sit facing the patient, who is to fix his eyes on those of the physician.

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 awaking, also, especially in the case of those who are hypnotized with difficulty, that there will be no drowsiness.

Hypnotism becomes easier with each repetition; and intoxication renders it easier. The treatments are repeated, if possible, daily for a week, then once a week for a month.

The results of treatment were: remained abstinent, eight; relapsed, but abstinent after further treatment, three; relapsed, and passing out of reach declining treatment, or continued to drink in spite of it, eight.

Bushnell has noticed that it is easy to render whisky repugnant to the senses of the patient, but it appears to be impossible to accomplish this in the case of beer. The loss of tolerance and cessation of craving for alcohol are reached, however, in the one class of drinkers as certainly as in the other.

ALCOHOL AND HAPPINESS.

The body uses its powers in resisting the outside forces which act upon it. Normally, there is a balance between body and environment. If environment prevails we are discouraged; if we are able to prevail, our spirits rise and our happiness grows. And it is not for the moment only, but we compare the accumulated impressions of the powers outside of us with the powers which our brains develop, and are happy or unhappy according as we feel our superiority or otherwise. Just how much does alcohol interfere in this balance of powers? It clearly can not lessen the power of outside influences which harm us; it can as clearly not increase our own powers in so far as they enter into this conflict with the outside world—it rather makes us less skillful and able. What can it do, then? It can deceive us. It dulls our appreciation of powers outside of us until they seem so much smaller that we are sure we can conquer them, and so we gain a feeling of satisfaction. Nine-tenths of those who take strong drink seek this feeling in alcohol. This is their “refreshing” at eventide, their “rest from the day’s cares,” their forgetfulness of sorrows; but it rests upon a deceit, and at the least trial falls into ruin. He who to-day forgets is not any stronger to-morrow, and so is constantly tempted to a new appeal to his false friend until his senses are so dulled that every duty is forgotten. His holiest interests are but shadows and mist before his eyes, and he knows nothing more but thirst for the deceitful drink. Even the defenders of alcohol at last call a halt; but they have forgotten that the first steps are much more easily undone than the later ones, when the brain has in a measure lost its power to control. They do not forget through malice, but because they have not rightly understood the physiological effect of alcohol.—*Dr. Fustus Gaule, in The Popular Science Monthly for November.*

TRIONAL AS A HYPNOTIC IN ASYLUM PRACTICE.

In the treatment of the protean forms of mental disease encountered in asylums for the insane, trional has proved a safe, reliable, and effective hypnotic and sedative, pleasant to take and free from irritating effects on the gastro-intestinal tract. The latest contribution to the therapeutics of the remedy is an article by Dr. Karl Grunfeld, a physician to the Insane Asylum at Budapest (*Pester Med. Chirurg. Presse*, No. 47, 1894) who has carefully compared the action of trional with that of other hypnotics in forty cases. The following is a résumé of these experiments.

In simple agrypnia, melancholic depression, conditions of moderate oppression as well as mania not attended with violent hallucinations, a refreshing sleep of six to eight hours' duration is produced often by doses of 1.0 grams, and always by 1.5 grams. The dose need but rarely be increased to 2.0 grams, and if so especially in paralytics.

The agrypnia, which in secondary dementia is usually dependent upon conditions of irritation, or is caused by the varied hallucinations of the insane, can frequently be combated by 1.5 grams trional, and 2.0 grams will fail to exert an effect only in special and exceptional cases.

In the more active conditions of excitement of chronic mania, and in paralysis attended with moderate motor restlessness, 2.0 grams trional usually had a reliable action, the effect being absent or very slight on the first, but satisfactory during the following days.

In paralytics suffering extreme motor and psychical maniacal excitement a satisfactory effect can only exceptionally be expected from 2.0 grams trional, while in many cases even 3.0 grams proved inactive.

As a sedative trional was tested in but one case and gave very satisfactory results. Grunfeld thinks that smaller doses will be required for this, since 1.0 gram sufficed to produce sleep in a case of chronic mania. A good effect was also obtained from the remedy in fractional doses in a

case of obstinate restlessness produced by marked hallucinations. In conclusion the author remarks that while the introduction of trional in psychiatric practice must be regarded as a gain, this concerns even more the general practitioner, since in the forms of insomnia met with by the latter the remedy proved of positive value.

NATIONAL INQUIRY INTO THE DRINK TRAFFIC.

After seven ineffectual efforts extending over as many years to have the government make an investigation into the traffic in alcoholic liquors, Congress has at last passed a bill to have the subject investigated by the *National Bureau of Labor*. Hon. Carroll D. Wright, the commissioner, has decided to conduct the inquiry along the following lines:—

“ 1. The relations of the liquor problem to the securing of employment: how far do, or may, employers exercise an influence by refusing work to persons who are known to be addicted to the use of intoxicants? The practise of government officials, large corporations, especially railroads, etc., should be learned. 2. Its relations to different occupations: how far is the use of liquors increased by night work, over-work, exposure to severe weather, etc.? 3. Its relations to irregularity of employment, such as may be caused by employment in trades which work by the season; the interruption of occupation by strikes, commercial crises, etc. 4. Its relations to machinery; how far does the liquor habit prevent the use of fine and highly specialized machinery; and, on the other hand, how far does the nervous strain involved in work with machinery induce the liquor habit? 5. Its relation to the mode and time of paying wages; is the consumption of intoxicants affected by the frequency of payments, by the time of the week at which they are paid, and by persons to whom they are paid? 6. Its relation to workmen's budgets in different occupations and in different countries, or the ratio between the cost of liquor and the cost of living. 7. Its relations to com-

forts, luxuries, and pleasures ; how far is the liquor habit counteracted by home comforts, good cooking, coffee houses, music halls, theatres, outdoor sports, etc. ? 8. Its relations to sanitary conditions ; how far is it affected by the plentifulness of food, by the ventilation of dwellings and workshops, by good drainage, etc. ?”

THE PROBLEM OF HEREDITY IN REFERENCE TO INEBRIETY.

The problem of heredity, by which is meant the transmission of a parental and ancestral character to each new generation of organic beings, is one of transcendent interest in biology at the present time, not only because it seems to hold the key to a large part of evolution, but on account of its relations to many social, moral, and even political and religious questions.

Just now opinion seems divided among those who have studied the matter. One class, led by Weismann, holds to the theory of the “Continuity of the Germ Plasma,” which teaches that “the germ cells are not derived at all, as far as their essential and characteristic substance is concerned, from the body of the parent, but directly from the parent germ cell, from which the individual has also arisen ; so that heredity is brought about by the transference from one generation to another of a substance with a definite chemical, and, above all, molecular constitution,” and “from this identical starting point an identical product necessarily arises.”

Herbert Spencer attaches the greatest importance to the environment. Along this line of thought are those — perhaps in the majority — who believe that the predisposition to inebriety is inherited, due to the various neuroses present in the children of the intemperate parent.

The weak point in Weismann’s theory is brought out by the observation that “the effect of use and disuse of limbs

and those of habit are transmitted to posterity in only a slight degree.”

It has been pretty well established that the children of intemperate parents are afflicted with degeneracy and various neuroses. Associate this, then, with suitable environment and the drunkard or inebriate is an inevitable result.

Take a long line of inebriate ancestry of both parents, and it is more than likely that the direct inheritance of inebriety may be established. But, again, mix it with pure blood from either parent—especially the mother—and we believe the chain would be broken and merely the predisposition to inebriety be present in the offspring.

Another point in this question, which is likely to be overlooked and which, as far as results are concerned, might appear to favor Weismann's theory, is the inebriety of the mother during pregnancy. The impregnated germ, which has entered upon its career of development, is drawing to itself large and hourly increasing supplies of nourishment for many months out of the maternal blood, which contains alcohol in pathological percentage. In this case we deny, as some claim, that the inebriate offspring has directly inherited the disease, but has acquired the habit in the same way as if the feeding of the alcohol to the child had been delayed nine or ten months later and when the fetus had become an infant. Certain it is that the establishment of the direct inheritance of inebriety in the human race is going to be very hard to prove.—Editorial in *Medical Progress*.

From the Report of the Registrar-General for Scotland, the mortality of physicians from inebriety was 35 per 1,000, of saloon-keepers it was 169 per 1,000, butchers were 36 per 1,000. Deaths from diseases of the liver was below the mean among physicians, but away above the mean among lawyers. The risk of life was shorter than coal miners and his chances of inebriety was greater than cabmen, grooms, and hotel servants.—*Medical Press*.

THE ALCOHOL QUESTION IN GERMANY.

In a letter to the *Echo*, Dr. C. R. Drysdale says: "It is interesting to find that the excellent attempts which have been made in this country and the United States of America to wean the public from the use of alcoholic drinks are being appreciated by some of the ablest physiologists and pathologists in Switzerland and Germany. The *Berliner Klinische Wochenschrift* of September 10th, 1894, contains an admirable address by Dr. A. Smith, physician to a lunatic asylum on the Lake of Constance, on the attitude which medical men ought to maintain upon the alcohol question. Dr. Smith tells his hearers that as many deaths take place annually from diseases brought on by drinking as are caused by that terrible scourge of our race, pulmonary consumption, and he remarks that, of course, all deaths from alcohol are easily preventable, so that these common forms of misery would disappear if total abstinence were to come into fashion. But he has found, by examining the letters of 1,500 medical men who wrote him concerning patients to be sent to his asylum, that there is as yet a great ignorance prevailing as to the part played by alcohol in causing disease. Dr. Smith advises his medical brethren in Germany to abandon the ideas received by them when attending hospitals long ago, and to attend to the evidence of facts regarding alcohol recently brought to light. If they do this, they will soon see that all the favorite phrases — that alcohol is a valuable nutriment, a necessary roborant, and a very valuable exciter of warmth — are only the fancies put forward by those interested in the sale of alcohol, and that the truth is quite in contradiction of such fancies. They will then, he says, begin to recognize alcohol, whether in beer, wine, or spirits, as a poison of the brain and nerves of the worst sort, and find out that the so-called stimulating and care-destroying properties of alcohol are non-existent; but that these are caused by a paralysis of the intelligence and of the judgment, as any sober person can see if he enters a room where men have been drinking. Besides this, the observer will have to notice

that a whole list of dangerous diseases of the system and organs, which he used to treat by their symptoms alone, have their cause in chronic alcohol poisoning, which need not be very excessive, and that, unless he withdraw the patient entirely from the use of alcohol, he will fail to cure him. And, above all, he will learn how greatly the brain is affected by the use of alcohol, and how impossible it is often to restore insane patients to health unless all alcohol is withheld from them.

“Dr. Smith alleges that, in his country, the prescription of the medical adviser has, in an immense number of cases, been the origin of drinking in the patient ; and this prescription is constantly quoted when advice to the contrary is given by those who see the damage done by alcohol. Dr. Smith observes that, in Germany, at present an alcohol ration is to be found in the diet lists of many of the hospitals. He narrates the case of a young man who had been a total abstainer, and who was given to alcohol in a military hospital to such an extent that he afterwards had an attack of *delirium tremens*. Delirium, he maintains, is extremely rare where diseases are not treated with alcohol. Because of the grave effect produced by alcoholic drinks upon the brain, physicians who direct lunatic asylums are most of all acquainted with the dangers arising from drinking. Dr. Smith believes that great drinkers are apt to engender children with tendency to nervous diseases, and points out that such diseases are increasing with the increase of beer palaces in Germany, especially since woman began to frequent them. Dr. Smith alludes with praise to Dr. Forel of Zurich, who conducts the lunatic asylum of that town entirely without alcoholics, and also refers with admiration to the practice of Colney Hatch and Hanwell in this direction. He goes on to say that medical practitioners ought to be total abstainers from alcohol. One reason he gives for this is that German practitioners often suffer greatly from alcoholic diseases, for country medical practitioners, he says, in Germany often drink to excess. Of 1,500 letters to himself concerning patients, no less than

436 were about doctors of medicine, 162 being both morphinists and alcoholics, and the rest simply intemperate in alcohol. He much regrets that so many physicians are against total abstinence, and, at most, favor simply moderation. No drunkard was ever cured by moderation, but only can be cured by total abstinence. And it is just moderate drinking which at present is the cause of drunkenness. Moderate drinkers, every now and then, take more than they can with impunity at Christmas and other festivals.

“Some medical men in Germany contend that they only use very little alcohol, says Dr. Smith, but that for the sake of social custom they must take a little. He, however, refers to the examples of five very distinguished physiologists, *viz.*, Drs. Bunge, Gaule, Hoffman, Forel, and Fick, all of whom are total abstainers. The very refusal of a physician to take wine will be certain to give rise to a debate on the subject of the use of alcohol in the society, and this, says Dr. Smith, will give a good opportunity for imparting information about it. Medical men ought, in short, to be the evangelists of total abstinence, since they alone well know the details of the diseases produced by this dangerous article of daily consumption to the masses.

“This lecture shows that in Germany the same arguments which have led to the existence of some 5,000,000 of total abstainers in this country are being heard among learned men and physicians. The consequence of this will be that, ere long, the modest virtue of teetotalism will become common on the Continent.”

THE COURT'S OPINION OF INSANE DELUSIONS.

Until human nature radically changes, there will probably always be those who will seek some scapegoat for their crimes. At one time it may be one thing, and on another occasion something quite different. This explains much of the talk about irresistible impulse, hypnotism, insane delu-

sions, and the like. In this connection, one of the most interesting of recent legal decisions is that of the Supreme Court of Tennessee in the case of *Wilcox vs. State*, rendered Nov. 12, 1894. This was an appeal from a conviction of murder in the second degree. The defense relied on was the insanity of the defendant at the time of the homicide, it being insisted that the act was the result of an insane delusion upon his part, rather than a general derangement of his entire mental faculties upon matters generally. It was contended that when he did the killing he was suffering from the insane delusion that the deceased had been on too intimate terms with his wife. He had been addicted to the excessive use of morphine and cocaine, taking the drugs in doses sufficient to kill twenty men not addicted to their use, at a single dose; and he had carried on this habit for years, and had grown rapidly more and more addicted to their use, and come more and more under their influence. Many witnesses were examined, both experts and non-experts, in regard to his mental condition. It appeared that he was at one time a man of good mental capacity, described by many of the witnesses as an exceptionally bright man; that he was an active business man, had studied and practiced medicine with success, and was regarded universally as a man competent to attend to his business affairs. He was also shown to have been an arbitrary dictatorial man, of strong will power, and from his boyhood of quick, active, irritable temper. It was strongly pressed upon the court that many of his arbitrary and dictatorial acts were evidences, and the result, of his mental unsoundness and the strong hold which the drugs had obtained over his actions, and that the evidence presented a case of insane delusion, on account of which the verdict should not be upheld. But the court holds otherwise. Its answer is that in criminal cases the correct issue is not that of sanity, but of responsibility. The delusions of a sane man do not make him irresponsible. The question is in such cases, Is the delusion set up as a defense the delusion of an insane person? Many men of strong

minds, continues the court, have delusions. Remarkable instances are given in the works on medical jurisprudence of delusions in men of prominence in all the walks of life. Lord Kenyon had an unreasoning fear of poverty, and so did Lord Stowell, although he was a man of immense fortune, his home being absolutely destitute of the necessities and comforts of life. Lord Erskine would never sit at a table or remain in a company as one of thirteen persons. Lord Eldon, after he had made up his mind and expressed his opinion lucidly and conclusively, was at all times a prey to grave doubts of his correctness. Lord Brougham, upon more than one occasion, was placed in seclusion, his mind being clearly off balance. Judge Breckenridge of Pennsylvania is reported to have on a hot day, while holding court at Sunbury, gradually taken off his clothes, until he sat naked on the bench. Judge Baldwin of the United States Supreme Court was a hypochondriac. A distinguished New England judge imagined that a dropsical affection under which he labored was a sort of pregnancy. And yet none of these men were insane, because they had reason and sanity enough to conquer and overcome these delusions. A familiar illustration is that of the Mormon elders, who claimed that they had a direct revelation from heaven permitting them to practice and teach polygamy. The world generally regards this as a rank heresy, and the claim to be the evidence of an unreasonable delusion. It has, however, been held that they cannot defend on the ground of such delusion, inasmuch as otherwise they are sane, shrewd, active, successful, and unusually practical men in their business and social relations, and they have been held responsible for such delusions. Nor can it be that the jealous suspicions which so many men entertain without any foundation can be magnified into insane delusions, which will exempt them from punishment for crimes originating in such jealousy. In a sense, all unfounded suspicions are delusions, but they do not for that reason excuse crime.

The rule is tersely stated in Archbold's "Criminal Prac-
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• tice and Pleading” as follows: “The insanity must have been of such a kind as entirely to deprive the prisoner of the use of reason, as applied to the act in question, and the knowledge that he was doing wrong in committing it. If, though somewhat deranged, he is able to distinguish right from wrong in his own case, and to know that he was doing wrong in the act which he committed, he is liable to the full punishment of his criminal acts.”

Moreover, the court makes the point that the insanity set up as a defense in this case was not hereditary or natural, but voluntary, in the sense of having originated from the use of drugs. While this is an unfortunate and unhappy condition, the law, it says, does not and can not regard it with the same leniency that it does cases of adventitious insanity, not caused by the act of the party himself. Parties who persist in subjecting themselves to the persistent use and habit of taking alcoholic drink or other poisonous compounds and drugs, cannot expect the same forbearance and immunity from punishment as those bereft of reason by the act of God. Still it is admissible and proper to show the immoderate use of drugs or whisky, not to excuse crime, but to illustrate the mental condition, with a view to fixing the degree of the crime as it depends upon deliberation and cool malicious purpose.—*Medical Review.*

COCAINE INEBRIETY.

It is but recently that this form of narcomania has found place in our nosology—so recently, in fact, that the profession at large at very much at sea regarding it, since reliable reports are few and far between, and the habit is very likely to be complicated with some other, such as the taking of morphine, excessive indulgence in alcohol, etc.

Doctor Norman Kerr, who easily stands foremost among authorities on inebriety and narcomania, in his latest work, mentions for the first time the cocaine habit, remarking *en passant* that in his experience it is comparatively rare and

for the most part confined to members of the medical profession. *Per contra*, a recent writer in the *Bulletin of Pharmacy*, writing from the standpoint of a pharmacist, seems to imagine the habit is much more widespread than has heretofore been considered, that it is continually increasing, and that its growing prevalence is largely due to the greatly reduced price of the drug. He also remarks that it is a pernicious habit among a certain class of pharmacists to offer "cocaine when asked for something that will relieve toothache, neuralgia, and countless other aches and pains; that in some way the erroneous notion has come to prevail that in treating the morphine habit cocaine is of great value in counteracting the effects of the former drug. Proceeding on this principle, numerous quacks have claimed ability to cure the morphine habit, . . . but in its stead the patients become cursed with a vice far more ruinous than all their former ills. . . . To use cocaine to cure the morphine habit is like jumping from the frying-pan into the fire."

Certain it is, the cocaine habit is the most seductive and terrible form of inebriety—the pleasant elation which the drug induces, and the apparent absence of unpleasant sequelæ that accrue to other forms of narcomania, lead to rapid destruction of the mental powers. Numerous cases of fatal poisoning by cocaine have been reported in current medical literature, but the number of known cocaine *habitués* is very few—perhaps because unrecognized or, as before mentioned, complicated with some other form of chronic intoxication.

If it is true that both the medical and pharmaceutical professions are responsible for the spread of the cocaine habit, owing to the freedom with which this most potent and treacherous narcotic has been prescribed for the relief of pain, it is certainly imperative that there be thrown about the sale of this drug restrictions which alone can be formulated and carried out by these professions, without any reference whatever to measures employed by the state.

That many of the victims are themselves medical men, is

undoubtedly true; the remainder are for the most part made up of women and *litterateurs*. Doubtless pain has recurred after the soothing effect of the first use of the drug has passed away, and the same handy and charmed remedy is again had recourse to without any knowledge of the results that are certain and swift to appear. Thus the craving, beside which the fascination of morphine and opium is infinitesimal, has been acquired, and the victim awakes to the fact that he or she has become bound fast to a habit entirely unsuspected. In a few cases there is evidence that herculean effort and iron will have succeeded in effecting a deliverance, but unfortunately such instances are most rare.

It would appear also that in some instances the cocaine habit has been acquired through the ignorant employment of a prescription by the physician as a succedaneum to opium or morphine, or for the relief of some teasing malady like vaso-motor coryza (hay fever). Nothing can be more disastrous than the substitution of cocaine for some other drug, since it is considerably more speedy than any other narcotic in displaying its characteristic effects, and quicker in securing an abiding mastery over the taker; the stage of exhilaration being more pleasant than that of morphine or opium, the drug is on this account also correspondingly more dangerous. Inebriates may indulge to most pernicious extremes in strong spirits for years without apparent mischief: some are even able to carry morphine narcomania to almost incredible lengths ere the drug manifests its deleterious qualities upon the physical and mental organism; but, *per contra*, the mental decay and moral perversion of cocaine excess quickly appear and as speedily increase in intensity. In some instances where the drug has been employed subcutaneously several times daily, an insane condition has developed leading to crime and to suicide; indeed, the cocaine *habitué* is always insane, and not infrequently a "raving maniac." There is also, under the influence of this drug, less sense of time than from any other narcotic, though all substances

possessed of anæsthetic properties seem to have a disturbing effect on the mental capacity.

While cocaine raises the temperature, its effects are much more swift and short-lived than those of morphine, while its tendency, in excess, is always toward delirium and raving madness. In fatal cases stupor and coma follow, with convulsions and paralysis of respiration—or, as Mosso and Kerr put it, “tetanus of the respiratory muscles.”

That cocaine acts chiefly upon the central nervous system, first stimulating and then paralyzing, is manifest; it contracts the peripheral blood-vessels. Under its use there is at first, usually, increased mental and bodily vigor, which speedily gives way to intense mental depression along with anorexia, insanity, hallucinations, and complete breaking-down of the mind, with volitional palsy and inhibitory prostration, all taking place in a much shorter time than the mental degeneration and physical decadence of alcoholism—in fact, demanding in many cases only as many weeks as alcohol inebriety requires years.

The peculiar overwhelming danger of cocaine addiction undoubtedly lies in the fact of the comparative absence of immediate after-effects. For some time at least—always, we might say, where the drug is partaken of in only limited quantities—“there is no *arrière gout*; no unpleasant taste in the mouth next day; no dry tongue; no nausea or morning headache; the pleasurable flow of happiness which seems to have left ‘no sting behind’ has indeed been a ‘rose without a thorn.’ Thus, deadly to all that is noblest and manly, to all that is ‘lovely and of good report’ in human kind, this speediest of brain disturbers threatens to excel all other mind poisons in its fell sway over the intellect and conscience of man.” (Kerr.)

The drug is usually taken subcutaneously, and the doses frequently follow one another in rapid succession. Taken, as it doubtless frequently is, along with or after some other narcotic, it greatly complicates any attempt at alleviation of the latter. Doctor Mattison of Brooklyn has reported a

number of interesting cases, as have likewise Erlenmeyer, Kerr, Connolly, Norman, and others, and all unite in the opinion that if taken in time the incipient form of cocaine inebriety is quite easily relieved, but the habit once confirmed is most intractable. Kerr declares one of his cases consumed thirty grains of cocaine daily; the writer personally knows of an instance where three times this amount of the drug was daily consumed; and yet one-seventh of a grain has been known to prove fatal to a stout, healthy man.

As regards treatment, there can be no dispute. It must be both mental and physical, and, like the treatment of all habits, is seldom of any utility except when carried on under complete and definite restraint.—*Editorial in Medical Age.*

DEGENERATION. BY DR. MAX NORDAU. D. Appleton & Co., Publishers, N. Y. City, 1895.

This work is translated from the second edition of the German in which it was originally published. No book for many years past has created more comment among scientific and semi-scientific readers. It points out in sweeping terms the evidence of degeneration in literature, religion, art, and music. With a free hand it levels the popular idols of the day, and with true iconoclastic spirit shows the folly and frailty of trusting degenerate leaders and theories.

The author is a physician and specialist, who is fully conversant with his subject and the authors he attacks, and while fair in his general treatment of the topic, has a strong personality that gives the reader an impression of intense feeling and desire to make out a case. On this, critics differ as to the value of his deductions. Beyond this there is a rich mine of truth and fact, that is new to most readers of psychology. His treatment of these topics is thoroughly scientific, giving the facts and drawing conclusions from them, showing the physical conditions that prompts this or that theory or line of reasoning.

The physical basis for the strange theories and isms of

the day is made prominent, more so than in any other work. The mysticism and strange confusion of ideas and conceptions of life noted in the writings of many modern authors are traced to brain failures and degenerations. Many of the aberrations and inconsistencies of inebriates are signs of decadence. Practical acquaintance with the physical and psychical defectives who are actively engaged brings out many problems which this work makes clear for the first time. In this respect it is the most suggestive and helpful study of strange men and women who pose as leaders. As a psychological study we think it is among the great works of the present day. Every specialist and medical man should read it, and be able to form some opinion of one of the most widely-read and critically-discussed books of the present time.

THERAPEUTIC SUGGESTION IN PSYCHOPATHIA SEXUALIS. By Dr. A. VON SCHRENCK-NOTZING. Translated by Charles Gilbert Chaddock, M.D., Professor of Diseases of the Nervous System, Marion-Sims College of Medicine. Phila.: The F. A. Davis Company. 1895. [Price, \$2.50.]

The great sensation made by the forerunner of this work, "Psychopathia Sexualis," by Krafft-Ebling, will certainly attract much attention to the sequel in which treatment by hypnotic suggestion is chiefly dealt with. A great many cases are cited in which the treatment has met with more or less success, on the whole the results being good, particularly considering the hopeless character of the malady under ordinary methods of treatment. No one can read these works without being impressed by the wretchedness of the unfortunate subjects of the maladies described, and the conviction is inevitable that many a one has been punished as vicious who was really diseased and deserving of pity.

This work gives another most impressive view of the new land of degeneration and dissolution which has not been occupied by scientific settlers before, a land that is being opened for study and promises to give a wider range for therapeutics than has been supposed possible.

COD LIVER OIL AND CHEMISTRY. By F. PECKEL MÖLLER, Ph.D., London, 33 Snow Hill, E. C.; Christiania, Norway: Peter Möller, New York: W. H. Schieffelin & Co., Copenhagen: A. T. Moller & Co., 508 pages. 1895.

This well-known firm of manufacturers have produced a book of great merit, not alone on account of the novel and interesting information in connection with the fishes and oil, but on account of the advanced chemistry it contains. One of the peculiar features of the chemic part of this work is the abandonment of the usual method of representing atomic parts in chemic formulæ and the introduction of a diagrammatic illustration. The book is an exceedingly interesting one, and notwithstanding its commercial origin is a distinct addition to medical literature.

HERNIA, ITS RADICAL AND TENTATIVE TREATMENT IN INFANTS, CHILDREN, AND ADULTS.

By THOMAS H. MANLEY, A.M., M.D., Visiting Surgeon to Harlem Hospital, etc., etc., etc.

This work is illustrated by sixty-five engravings and drawings with a full history of the ancient and modern operations for the hernial infirmity of every type, in both sexes, along with a full description of the varied anatomical types and the condition and the multiplicity of technique of modern time; it also embraces an entire chapter on cocaine analgæses as a substitute for pulmonary anæsthesia, with a full and complete set of rules for its indications and technique.

This is an excellent work, clear and practical, and is published by the Medical Publishing Co., Philadelphia, Pa.

The *American Journal of Insanity* has given marked evidence of new environments, new energies, and a broader editorial spirit in its change to Chicago, and to the care of a committee of which Dr. Dewey is editor-in-charge. It is without question the best journal published in both the quality of papers presented and typographical make-up. It is replete with signs of the new century, and broader, wider studies of psychiatry that are to come.

The Voice continues the "On to Richmond movement" for prohibition with earnest vigor and faith that promises success and fruition somewhere in the future.

The *Homiletic Review* for July contains a varied and exceedingly interesting collection of articles from some of the ablest writers on theological, ecclesiastical, and social subjects in the land. Published monthly by the Funk & Wagnalls Co., 30 Lafayette Place, New York city. \$3.00 a year.

Medical Declaration Concerning Chastity is an eight-page leaflet, just published, No. 29 of The Philanthropist Series. It is signed by many leading and influential physicians, and is a timely, important medical testimony for the promotion of purity. It is especially valuable for distribution by White Cross and Purity societies among young men, and should be given the widest possible circulation. Price, by mail, 20 cents a dozen; \$1.00 a hundred. Address "The Philanthropist," United Charities Building, Fourth Avenue and Twenty-second street, New York.

The *Phrenological Journal* has taken a high rank in its critical studies of eminent men. It has become national in its broad, generous criticisms, and should be read by every student of science. Send to Fowler, Wells & Co., New York city, for a copy.

The *Journal of Hygiene*, published and edited by Dr. M. L. Holbrook of New York city, has been before the public for forty-five years, and has attained an eminence and authority as the leading popular health journal of the world. It is both a teacher and preacher of hygiene in its highest and best sense.

The publication of Herbert Spencer's recent studies on sociology in the *Popular Science Monthly* gives additional value to this journal. "Professional Institutions," "The

Physician and Surgeon," "The Dancer and Musician," are among Mr. Spencer's most suggestive papers. Dr. White's articles on "Science" and "Criticism" are very attractive and widely copied. It is safe to say that no other monthly published brings a richer and more instructive table of contents.

MAP OF THE WORLD.— We are in receipt of a neat wall map, showing both the old and new worlds, according to the latest authorities. This makes a valuable addition to any doctor's office, and a copy may be obtained by addressing the Rio Chemical Co., St. Louis.

The Open Court Publishing Company of Chicago, Ill., issue many excellent works of psychology and mental medicine. *The Manist*, a quarterly, gives the reader a very clear view of the studies of evolution. This firm has recently issued a second edition of their authorized translation of Th. Ribot's *Diseases of Personality*, the first having been exhausted in three years. The popularity of Professor Ribot's works is certainly deserved, as they form delightful introductions to the study of psychology and are remarkable specimens of economy and lucidity of exposition. No other author displays such originality in placing under lucid points of view the disordered mass of data gathered by the psychological specialists. The present translation has been revised throughout and embodies all the corrections and additions of the new fourth French edition. The bibliographical references have been verified and an analytical index made, which will much enhance the usefulness of the book. (Pp. 163, cloth, 75 cents, paper, 25 cents.)

Bromidia has attained a great popularity and immense sale. It is an excellent combination and should be tried in every practice. J. W. Snowden, M.D., A.E., San José, Cal., on April 12, 1895, writes: "Your *Bromidia* acts like a charm. I believe it a safe, effectual, and reliable hypnotic."

Editorial.

ARRESTED DEVELOPMENT AND INEBRIETY.

A certain class of inebriates have arrested cerebral development and malformations. Certain organs and brain centers have stopped growing before maturity and left this part of the brain in a childhood and imbecile stage. If this arrest of growth is limited to the higher cerebral centers, abnormalities of conduct and character follow. Faults of judgment, of instincts, of consciousness, of the relations of right and wrong exist. Surroundings and conditions of life may conceal the real condition, but when they fail the imbecility appears. Often these forces are noted in quiet hygienic living, removed from mental excitement and strain; or from the influence of a wife, or parent, or friend who directs the higher mental activities. When these are withdrawn they are without power of control and suffer from irritative excitement, which finds relief in alcohol. The use of spirits is continuous and the inebriety is of a low imbecile type. The increased action of the heart from spirits is fitful, and followed by depression and sudden violent impulses, particularly where the lower animal instincts are disturbed. The attempt to rouse a person in this state for any purpose is repelled with violence, because it breaks up the calm of the present. Obstacles to the gratification of his present wants are overcome, in a wild unreasoning way; ignoring all other considerations except the immediate object of his impulses, he is at once most uncertain and dangerous in his acts. The brain in such cases is not only undeveloped, but is incapable of receiving impressions of duty or obligation, and particularly from acting from outside impressions, unless directed by others. In a recent case the following facts appeared. A, born of neurotic parents, suffered from

a severe attack of scarlatina at seven years of age, was a strange, impulsive boy, both stupid and unreliable. At nineteen he married, and for the next ten years was a quiet, steady workingman of low intellect, but inoffensive, temperate, and living normally. His wife died, and very soon he became an inebriate, drinking at all times and places to great excess. He was violent when disturbed or opposed, and resisted arrest, and attempted to run away when in the court-room. He was sent to jail for drinking and assault many times; finally he killed a man who resisted his attempt to steal a dinner-pail. He was hung as a sane man, who deliberately and willfully gave himself over to evil impulses. The defense of inebriety from arrested development and inherited neurosis, which broke out at the death of his wife, was treated with contempt. Physical signs of degeneration externally, and the insane conduct and unusual acts, coming on suddenly, were ignored by the jury. These cases are not uncommon, but it is remarkable that they should not be recognized in the court-room.

NEUROTIC INEBRIATES.

Inebriety which arises from a defective nervous organization is very common in every circle of life. Many of these persons possess an unstable invalid brain, with feeble and imperfect power of control, making it impossible to live along lines of consistent uniform thought and act. This often comes from inheritance, and early disease and faults of nutrition and training. They become mental cripples, and need care and the control of others as positively as invalids from surgical disease. They are unfitted to properly care for themselves in society, or to rationally adapt themselves to surroundings, and early become wrecks, because they are without power for rational adjustment. They may be endowed with a highly organized brain, but so unstable and so easily disturbed that alcohol, opium, or other narcotics are most grateful drugs to cover up the real condition. The

distress which follows strains and drains, and conditions of surroundings, ill adapted to favor the normal conditions of living, finds relief in spirits. Quickly this brain infirmity becomes organized into progressive degeneration. This may continue for a long time without marked symptoms of active disease, but the deviations from health and nerve and cell degenerations continually increase. Friends, society, and even physicians fail to recognize this condition, until extreme stages appear, and even then, theories of free will, willfulness, and capability of control prevail. These cases should have been recognized and protected from the first. Their lives and surroundings should have been ordered and regulated along fixed uniform lines. They needed protection from many conditions that were harmless to well persons. They needed direction and guidance where others could have walked alone. Many things in society and surroundings were injurious to them and they should have been guarded against the danger which was inevitable. Such persons are without the mental stability to apply absolute rules on themselves, they cannot resist the contagion and infection of surroundings, they are helpless before the impulses of their organism, they need constant direction and support.

Many of these persons appear well, and only when they become marked inebriates is their real condition recognized. From this class are recruited the wild enthusiasts and neurotics, and the dangerous criminals and contagious degenerates, who appear in mobs and advocate the most dangerous theories.

These cases of brain defects and disabilities must be recognized and proper remedies provided to protect individuals and society from the inevitable consequences of their unrestrained conduct.

The conductors of the Northwestern railway are not allowed to enter a saloon, much less to use intoxicating drinks, whether on or off duty.

THE GOLD CURES.

No pretended discovery of modern times exhibits so clearly the motives and character of its authors as the gold cures for inebriety. The means used are enshrouded in mystery and concealment, and the theories are proclaimed and defended with extravagant dogmatism, and hysterical assertions of positive cures by the victims.

As empiricism, it lacks the usual psychological skill and commercial cunning, and displays a coarse transparency of purpose and methods, with egotistical assumptions of the credulity of science and intelligence, and the purchasable quality of truth. Scientifically it exhibits rapacity, shallow pretension, mysticism, misconception, and a very little knowledge of inebriety.

Psychologically it is simply an inebriate's theory for the cure of inebriates; a scheme of degenerates for the restoration of degenerates; an insane man's treatment for the cure of the insane, and all revolving round a center of cupidity that is kept very prominent in all cases.

Rev. Dr. Buckley, the famous editor of the *New York Christian Advocate*, a leading religious paper in the Methodist church, has made a serious attempt to ascertain the reality of the claims of ninety-five per cent. of all cases as permanently cured by the Keeley Gold Cure. From a circular mailed to his subscribers inquiring how many persons were known personally who were cured after taking the gold cure, he received ninety-three answers. The *Medical Record* writes of this as follows:

“Through these 93 persons he obtained reports of 534 cases of inebriety treated by the ‘gold cure,’ of which number 275 remained cured and 251 relapsed. This gives a proportion of cures of $51\frac{1}{2}$ per cent. It might be said at once that if 50 per cent. are cured, something is accomplished; but the answer is that this same result can be secured by ordinary measures not involving the resort to secret preparations. Of 100 drunkards who deliberately and honestly desire to break up their habits, surely over half

will be rescued by measures known to the profession. As two-thirds of Dr. Buckley's correspondents were clergymen, and many of these were believers in the treatment, the percentage of cures obtained by the inquiry is probably too high. Even admitting it to be as high as 50, the validity of the claim that the 'gold cure' is specific is surely disposed of."

Dr. Stearns, superintendent of the Retreat for the Insane at Hartford, Conn., in his annual report makes the following remarks on this subject :

"Keeley Gold curers claim that 90 or 95 per cent. of all cases of inebriety can be cured in a space of four weeks by a mode of routine treatment, and on the basis of this claim are besieging the legislatures of different States to pass acts endorsing their method of treatment and providing means for its use at the expense of the public. The audacity of such a movement would be less provided the nature and properties of the medicines which they use were known. They now hold the same position in relation to the public that any other quack remedy does ; and it would be equally proper for the legislature to order the administration of 'Warner's Safe Cure' or any other of the numerous remedies, the marvelous virtues of which are spread on the pages of our daily papers, to patients in public institutions.

"But it is said that abundance of proof that patients are permanently cured is found in the numerous patients who testify to this fact in different parts of the country. The same, however, can be said concerning the claims of almost every other much-advertised remedy. Still, it is not disputed that many persons who have taken the Keeley-Cure treatment remain permanently well ; but it is claimed that the real cure takes place after leaving the Keeley Institute, if at all, and through such measures as have been indicated above. It is also claimed that many such cures are effected in cases which never reach Keeley Institutes or any others. They are not, however, heralded about in a public manner. Such patients come from the more promising classes of inebriates,

that is, those who have a good heredity, mature age, and in whom the morbid changes of nervous tissue have not become far advanced. They are also such patients as are able to fully appreciate their condition, and have a strong desire and determination to get well, backed by a strong will. There is nothing new or wonderful in such cures. That so many have occurred among those who have been in Keeley Institutes arises from the fact that more cases have been treated there than in other institutions, and that a much larger proportion of them are voluntary patients, who greatly desire to overcome the habit, and have come from the more curable classes of inebriates.

“It should, however, be stated that there are not, and from the nature of the case cannot be, any really reliable statistics regarding the percentage of cures claimed to be effected in Keeley Institutes, for this reason (among others) that patients are received, treated, and discharged, and little or nothing can be known regarding the subsequent history of many of them. . . .

“The course pursued by Dr. Keeley in keeping the nature of the supposed cure a secret proves very conclusively that he has little confidence in it himself. He does not dare to make it public, but rather prefers to trade upon the desires and hopes of credulous families and legislatures and the unfortunate weaknesses of inebriate brains. If he or any other person should discover a remedy for chronic inebriety which would effect a cure in ninety per cent. of all cases in four weeks, and make its nature public for use by all physicians, he would be hailed by men everywhere as one of the great benefactors of the race, and both wealth and honors would be showered upon him.”

It is evident that this empirical epidemic of Gold Cures is rapidly disappearing and will soon be numbered with the South Sea bubbles, Perkinsism, and other delusions of the past. It is a serious question whether it is not wise to permit the obsequies to go on without comment rather than to galvanize the corpse into activity by calling attention to its frailties.

A CERTAIN class of persons have a blunted sensibility and seem oblivious to any ordinary impressions that are not directed to their appetites, or the animal instincts. In such cases, alcohol, by increasing the activity of the heart's action, produces strong impressions on the cerebral centers, which, for the time, seem pleasurable. These are the only agents which rouse up the inert and obtuse centers, and for a short time seem to satisfy the desire for a new sensation. This desire for strong feelings in the degenerate stupid laborer and persons who live on low planes of intellectual activity creates a longing for alcohol for a time, but when the transient excitement from the drug is followed by pain and increased discomfort, alcohol is abandoned. They use spirits for the excitement it produces and detest the stupor which follows, hence drink the strongest alcohols that can be procured. This is apparently a confused effort to reach some level of healthy brain functioning, some physical ideal of health. Some of these cases will drink very large quantities of raw spirits and have a short period of marked delirium, then become intensely stupid. For a long time after they will have a marked disgust for spirits, and show an increasing debility of nerve and brain centers.

THERE are excellent physicians who have done good work for medicine, and made a reputation and following who have clearly outlived their usefulness. Such men have passed the summit of growth, and their minds are becoming more and more impervious to new facts and evidence, and literally in many cases they are dangerous as guides and exponents of science. Such a man has recently in an address on crime and inebriety, repeated the theories and arguments of a half a century ago in a most offensive, dogmatic way. It is not practical to attempt any reply, or even to call attention to statements that have long ago disappeared as worthy of note or to even hint at the assertions of incapacity and dishonesty of persons who sustain the modern views of crime and in-

briety. It is only sufficient to note with sorrow and regret that these unfortunates are dying at the top. Dissolution is making them more and more oblivious to progress in science and new truths. They are still in the world but not of it.

A PATIENT under my care said, "I do not wish to give up all use of alcohol, for the reason I am so miserable when free from spirits. I am depressed, and have pain, and everything is a burden to me. It is an effort to think, or do anything; the presence of others is wearisome. I cannot sleep. I cannot think, and I seem to be cut off from all pleasing associations with the world. Alcohol restores me. I am myself again when drinking spirits. The world again is clear and bright. When I drink to intoxication I regret it and try to avoid this state. I have drank twenty years; four times I have stopped all use of spirits, and each time suffered intensely during this interval. I cannot take any form of opium. Spirits is the only drug that helps me." Six weeks of total abstinence confirmed clearly this man's statements. Notwithstanding all the appliances of medical skill and efforts, he continued to be what he so graphically described, a most miserable sufferer, then went back to his family and relapsed as usual. Some weeks later I met him on an excursion, a quiet, genial, happy man. He was using spirits twice a day and had started in business again.

Physicians in Arkansas who become inebriates are debarred from practice by having their license revoked by the State board of health.

Michigan has passed a law fixing a heavy penalty upon railroad companies for the employment of persons addicted to the use of intoxicants.

TREATMENT OF ALCOHOLIC COMA.

The report of a committee of Kings County, New York, Medical Society, on the treatment of alcoholic cases found unconscious on the street, is widely circulated and meets with general approval from all sides. Resolutions to the same effect were offered by the Neurological section of the American Medical Society. It is a pleasure to note that Dr. Mason's efforts are bearing fruit so quickly. Nothing can be more practical and more needed than a change of the present system of treating these cases. The following is a note of the changes already made :

Health Commissioner Emery of Brooklyn, New York, has sent to each hospital in the city a new set of rules governing the work of ambulance surgeons and specifying conditions under which hospitals receiving money from the city must receive patients through the ambulance surgeons. Too much latitude, it is claimed, has been given heretofore to ambulance surgeons, often young men of little practical experience and an exalted opinion of their own importance. Dr. Emery has given some time of late to an investigation of alleged ambulance abuses, and in one or two instances he has discovered patients have died for lack of medical attendance in cases where the surgeon, when called, refused to interfere. All patients suffering from coma must be taken to the nearest hospital according to an order recently issued by the health commissioner. The rules sent out are for the government of the hospital and ambulance service under ordinary conditions. Dr. Emery's address to the superintendents is as follows :

To Superintendents of Hospitals :

Although the accusation of inhumanity, occasionally made against the hospital authorities and ambulance surgeons of this city, is generally undeserved, it must, nevertheless, be admitted that, unfortunately, such is not always the case, as there have come to my knowledge certain well-authenticated instances of patients in a dying condition hav-

ing been refused transportation by ambulance surgeons, and of others who have been denied admission to hospitals which are under contract with the city to care for the sick and poor. In order to diminish the possibility of the future occurrence of these deplorable mistakes, your attention is called to the following rules, which take effect immediately:

1. All ambulance surgeons must be appointed by the commissioner of health, but the candidates nominated by the hospital superintendents will be accepted if they present satisfactory evidence of the possession of the proper qualifications for the position.

2. The hospital that is under contract with the city to treat the sick poor must maintain an emergency ward, containing not less than two beds, for the temporary reception of ambulance cases. This ward is to be used for no other purpose.

3. When an ambulance case is brought to a hospital from the latter's own district, the patient must be promptly admitted. Whether he shall be retained or not may be determined later.

4. Cases of grave injury or sickness must be admitted even when brought from another district.

5. Cases of delirium and insanity, when brought in an ambulance, must be admitted and cared for until they can be transferred to the department of charities.

6. Unless the free beds are all occupied, no applicant for hospital treatment is to be refused without a medical examination.

MEDICO-LEGAL CONGRESS.

The Medico-Legal Society of New York will hold a Congress on the 4th, 5th, and 6th of September next, near New York city. The topics will be arranged and grouped in sections, and discussed together. One section, "On Inebriety and its relation to Crime and Responsibility," is under the charge of Dr. Crothers. The following papers are announced:

"Inebriety and the Opium Habit, and their Relation to Testamentary Capacity," by Dr. E. C. Mann.

"What Shall We Do with the Alcoholic Inebriate Apparently insane?" by Dr. Norman Kerr.

"Alcoholic Anæsthesia a Factor in Crime," by Dr. I. N. Quimby.

"Questions of Responsibility in Alcoholic Coma Found on the Street," by Dr. L. D. Mason.

"How Far Should We Hold the Inebriate Responsible?" by Dr. T. D. Crothers.

In other sections, various questions of criminality, hypnotism, medico-legal surgery, microscopy, bacteriology, chemistry, and sociology are to be discussed from the side of jurisprudence. A large number of eminent men are to present papers and to take part in the discussions, and this meeting promises to be one of the great events of the year, in scientific circles.

THE editor of the *Review of Reviews*, in his record of "The Progress of the World" for the July number, comments on many matters of national and international moment — the recent cabinet changes following Secretary Gresham's death, the peculiar prominence of Mr. Carlisle in the leadership of his party, the present status of the silver question in politics, the duty of the United States toward Spain and Cuba, the progress of American universities, Russia's relations with China and Japan, the prospects of Pacific cable construction, the opening of the Kiel Canal, the progress of amateur sports in England and elsewhere, the recent Italian elections, the fall of Count Kalnoky, anti-Semitism in Vienna, British politics, the future of Chitral, the Armenian question, and various other timely topics. This department of the *Review* is illustrated by a score or more of portraits of the men and women of the day, together with maps and views.

Clinical Notes and Comments.

PATHOLOGY OF DELIRIUM.

The condition of the brain cells which underlies confusional insanity may be produced by other than toxic causes ; it seems to me indisputable that it may also be produced by toxic disturbances of nutrition. This is well seen in delirium tremens, a disorder which is getting more and more to be recognized as a variety of confusional insanity. The mental disturbance of delirium tremens cannot be due to a direct action of alcohol in the blood or in the nerve-tissues at the time of the breaking out of the disease. The "horrors" of the drunkard is the beginning of delirium tremens, and if the cerebral manifestations of the horrors or of the delirium tremens were due to a direct action of the alcohol, then they should be intensified, not relieved by further doses of the poison. Evidently, the symptoms are the result of nutritive changes in the ganglionic protoplasm which have been produced by the poison. In other words, the symptoms are only indirectly caused by alcohol. As acts alcohol, so in all probability may septic poisons act ; as there is an alcoholic delirium, and also a confusional mania which we call-alcoholic, because it is indirectly caused by alcohol, so also are there in all probability a septic delirium and a confusional mania which is the secondary result of septic disturbance of nutrition.—*Prof. Wood, in American Journal of Medical Science for April, 1895.*

THERE are twenty specific gold cures for inebriety and opium-taking in San Francisco. Each one claims to be the best and to have had the greatest success. The soil is evidently very fertile for this kind of quackery, and, next to saloons, these specifics are actually destroying and making incurable a large number of cases.

CASES OF COAL-TAR INEBRIETY.

Jeff. Suttle Davis, M.D., health officer of Shelley county, Montevallo, Ala., writes (*American Medico-Surgical Bulletin*):

During the last decade coal-tar derivatives have been largely employed as antipyretics, analgesics, and anodynes. As they all have a powerful effect on the nervous system, it is but natural that they should be habitually indulged in; and as they are easily obtained, the wonder is that so few cases have been reported.

These drugs are unfortunately becoming household remedies, and if their sale be not restricted much mischief will inevitably result from their indiscriminate use.

It is my opinion that many cases of addiction to these various products are unrecognized by the physician. My attention was first called to the danger of their long-continued use by a brother physician, who, several years since, favored me with the report of a case of sulfonal habit. The patient was a gentleman 32 years of age, for whom sulfonal had been prescribed for insomnia of a year's duration. Being of a supra-nervous temperament, it was not long until he desired to be constantly under its influence, and instead of the twenty-grain dose at bedtime he took six such doses daily. His condition was pitiable in the extreme, anorexia being so marked and constant that he was gradually dying of inanition. His nervous system was a complete wreck, his condition being one of listless apathy, alternating with coma-vigil; sound sleep entirely absent, constipation marked and urinary secretion scant. Every effort to cure him had failed. I do not know how the case ultimately terminated.

In speaking to my druggist in regard to the stubbornness of a case, he remarked incidentally that the patient bought large quantities of acetanilid, and it at once occurred to me that I was dealing with a case of acetanilid habit. He denied the charge at first, but finally confessed. . . . In summing up these cases, it will be observed that a weak

heart, anæmia, indigestion, insomnia, constipation, and neurasthenia were conditions more or less marked in each case. Albuminuria was present in two cases, while in the third case the specific gravity was quite low. In two cases there was an almost constant perspiration, with occasional prostrating night sweats. A marked recurring cyanosis was also observed in two cases. These were the most prominent symptoms and can very reasonably be accepted as those to be expected in similar cases.

It is also seen that the symptoms following the withdrawal of these drugs in cases of addiction resemble very closely those following the withdrawal of the narcotics in similar cases, *i. e.*, depression, insomnia, vomiting, and diarrhoea.

Strychnine hypodermically, with morphine when necessary to relieve "nervousness" and chloral *per rectum* at night, gave the best results in the treatment.

AUTO-INTOXICATION AS A FACTOR IN MENTAL DISORDERS.

Drs. Regis and C. Lavaure submitted a report on this subject at the last meeting of the French Congress of Mental Medicine. They arrived at the following conclusions: (1) The toxicity of the urine is notably diminished in maniacal and augmented in melancholic conditions. The urine of maniacs and that of melancholiacs have different actions on the animals in which they are injected. The former causing chiefly excitation and convulsibility, and the latter depression, inquietude, and stupor. This would rather prove that auto-intoxication is the cause and not the effect of the mental state. (2) These results, though incomplete, show that the phenomena of auto-intoxication play an important part in mental diseases, and this is further indicated by recent nosological investigations on the insanities of the acute infectious diseases, and those of the visceral and diathetic disorders. As far as the psychoses of the infectious disorders are concerned, they are the result either of the direct action of the

microbes or of their mediate and indirect action through the toxins they secrete. From a clinical point of view they may present themselves at two different periods. During the febrile stage the disorder ordinarily takes the form of an acute delirium. During the post-febrile stage, or during convalescence, we find the so-called asthenic psychosis present; this is a more or less variable mental condition, consisting usually of a mental confusion, stupidity, clouding of the faculties, a pseudo-dementia. An intermediate form between these two may possibly be admitted to exist. The visceral psychoses are in reality genuine insanities from auto-intoxication. It may be said that where the intoxication is acute it shows itself as an acute toxic delirium, resembling alcoholic delirium, as in uremic insanity; when the intoxication is chronic it generally induces a melancholic condition. Some cases resemble more or less parietic dementia. General or local anti-infectious antiseptic treatment is found to give excellent results. Although it is not possible to formulate a definite therapeutics, there are enough facts to show that in the infectious or auto-toxic insanities one must resort to the treatment of the infection or the auto-intoxication to relieve the mental disorder.—*Progrès Médical*.

MECHANISM OF DEATH IN COCAINE INTOXICATION.—Maurel (*Gaz. Méd. de Paris*, 1894, No. 6) gives a number of experiments on the toxic character of cocaine, and concludes that cocaine has a distinct action upon the leucocytes of the blood and upon the small vessels, the leucocytes assuming a spherical form and tending to place themselves next to the vessel-wall. The contraction of the small vessels is often followed by embolism. Small doses of cocaine were sufficient to cause alteration in the leucocytes, while intravenous injections were found to be very dangerous, even in the smallest doses, owing to embolism which formed in the lungs. The writer is of the opinion that the chief danger in cocaine intoxication arises from the contraction of the smaller blood vessels.

BRITISH OPIUM COMMISSION.

The *Medical Standard*, commenting on the provisional report of the British Opium Commission, remarked over a year ago that: "The same 'respectable business men' who forced Great Britain into the brutally unjust opium war have bulldozed the British Opium Commission into a report which establishes: the harmlessness of opium as ordinarily used in India; the value of opium in malarious provinces as a preservation against fever; that opium is not a predisposing cause to disease, insanity, or crime in India; that it is an infinitely safer form of stimulant for the Indian races than the alternative stimulant of alcohol. A report of this kind would be deservedly regarded as the product of 'boodle' in America. The recently published complete report merely emphasizes the conclusions just cited. These conclusions are based, not on carefully analyzed facts, but on isolated instances of longevity such as are common in all neurotics. The conclusions, moreover, are directly contradicted by the testimony of American medical witnesses like Dr. Coltman, who remarks that those who use opium in the ordinary amount soon become helplessly besotted and unfit for active duty. He has frequently noticed that opium-eaters do not bear surgical operations well. The testimony of physicians in regard to opium will vary in value according as the physician be an opium-user or not. The alcoholic has a tendency to hold himself up as a horrid example, while the opium-user underrates the dangers of opium as compared with alcohol and prescribes it largely. More than one work fiercely denouncing alcoholic inebriety has been written by an opium-user. Exact data as to the effects of opium-using are not easily obtainable where public official opinion favors, as in the British colonies, opium-using may be directly inherited. The children of opium-eating mothers require opium to preserve them during early infancy. Whether long-continued opium-using for generations might not produce immunity from opium toxic effects is an open question. This undeniably has occurred in pigeons on whom opium is

without toxic effects. That similar results might obtain in man there can be no doubt; still such immunity no more proves the harmlessness of opium-using than does the immunity of the vaccinated prove the harmlessness of small-pox."

Dr. C. P. Landon of Columbus, Ohio, in discussing the "State's Care of Dipsomaniacs," before the State Medical Society, said:

"Dipsomania is a disease — a lesion over which the victim has no volition beyond the power of his self-control; of indefinite recurrence; a periodic insanity — and because of the environments, not amenable to successful therapeutics in private practice. The physician is left helpless because of the want of co-operative helps and imperative restraint.

"The State has been generous, munificent, in caring for her wards, and the profession of medicine ever has been watchful of the needs of the same. The first public provision for the care and cure of the insane of Ohio was the inception and effort of the fathers of this society, and each advanced movement has been the result of the want made known by the medical profession.

"By the benevolent and humanitarian acts of the government many changes and great advancements have been wrought reflecting the sunlight and life of a quickened and new-born humanity, evincing a clearer understanding of man and his relation to society, and of the great law declaring that each man is the keeper of his brother. Yet, I repeat, in the twilight of the nineteenth century the State has built hospitals and asylums for all other forms of maniacs, for all other classes of the insane; for the dipsomaniacs she has provided penitentiaries, poorhouses, and the scaffold. But yesterday the State provided a hospital for the epileptics — for the care and cure of epilepsy, a recognized incurable disease. For this I rejoice, you rejoice. It separates and gives relief to the overfull institutions of the State; it will give needed care and help and good to that class of sufferers.

But how much greater the demand and rationality of providing for a much larger class of curable maniacs.

“The State’s care of dipsomaniacs would result in the reflection of the sunlight of a new life in thousands of homes ; the redemption and preservation of thousands of noble natures, which otherwise would be lost, destroyed ; making manifest a truer Christianity, and a more humane and merciful administration of law ; making clearer the pathology and psychological condition of the dipsomaniac ; making the cause, care, and the cure of the mania a solved problem.”

TOBACCO SMOKING IN DISEASE.—Dr. Jankau (*Zeitschrift fuer Krankenpflege*) in many cases regards moderate smoking as indicated, and especially where there is an express desire. In the majority of surgical affections it is permissible, with the exception of convalescence from operations upon the bladder and abdomen. Patients with diseases of the eyes, nose, throat, or pharynx should never smoke. The internal diseases which would not permit smoking are peritonitis, typhoid fever, and similar affections. In stomach affections, smoking may be allowed if the smoke be filtered. Patients with organic heart diseases should smoke as little as possible. In lung diseases, under certain circumstances, he would hold smoking to be indicated ; also in syphilitics. In those with nervous diseases there is no general rule ; sudden withdrawal often does harm, while in cardiac neuroses only a very weak tobacco with filtration of the smoke is allowable. To smoke in the sick-room where there are several patients present is hardly to be commended. The best time to smoke he would believe to be several hours after meals.

W. H. Schieffelin & Co. of New York are the American agents of *Trional*, *Sulfonal*, *Phenacetine*, and other excellent preparations which have come into very general use. See article on *trional* in this issue.

The *Scientific American* is unrivaled as a practical scientific paper to all class of readers. Every issue contains a rich table of contents.

Antikamnia and Quinine are put up in tablet form, each tablet containing two and one-half grains of antikamnia and two and one-half grains of quinine, and is the most satisfactory mode of exhibition. This combination is especially valuable in headache (hemicrania), and the neuralgias occurring in anæmic patients who have malarial cachexia, and in a large number of affections more or less dependent upon this cachectic condition.

It is a pleasure to call attention to two new drugs, *Protoneuclein*, which is of special value in destroying toxic germs in the body, and *Peptenzyme*. This latter is a remedy for intestinal troubles and various forms of cholera. They are prepared by *Reed & Carnrick* of New York, scientific pharmacists of wide reputation.

Wheeler's Tissue Phosphates combine calisaya, sodium, and iron with wild cherry, and is a most excellent preparation. It approaches a true tissue construction in many ways, and should be tried in all exhaustive cases.

The *Arethusa Spring Water* of Seymour, Conn., has become a rival of the famous apollinaris as a healthy table water, and medicinal agent.

Maltine with Coca Wine is particularly valuable when spirits or narcotics are withdrawn at the beginning of the treatment of these cases. Later, maltine with phosphates can be substituted with excellent results.

Fellows' Syrup of Hypophosphates has come into very general use, notwithstanding all criticism it is increasing in popularity and value as a practical remedy, and is more largely used than ever before.

Parke, Davis & Co., have at last procured an isolated ferment called *Taka-Diastase* in the powdered form for

amylaceous dyspepsia. This new remedy should be tried in all cases of indigestion.

After the removal of alcohol *Celerina* is found to be one of those rare drugs that diminishes the neuralgias and lessens the nervous irritation. Send to the Rio Chemical Company of St. Louis for a trial bottle.

The *Inebriates Home* of Fort Hamilton, N. Y., Dr. Spark's *Home for Inebriate Women* in Brooklyn, N. Y., are very prominent places. The former is the largest and oldest asylum in America.

The *Acid Phosphates* of Horsford supplies the phosphates and phosphoric acid needed in exhaustion, and in many cases is practically a specific.

McClure's life of *Napoleon*, edited by Miss Tarbells, is one of the best short histories published. It contains the largest number of authenticated portraits and excellent pictures, and gives a clear, graphic account of this most remarkable man. This work has had immense sale and is one of the class of histories that are read by the masses. It is published in one volume in paper at 50 cents. Send to S. S. McClure, 30 Lafayette Place, New York city.

Dr. Mann's new preparation of the Glyceride of the Hypophosphites comp.—a mixture of lime, soda, potass. iron, quinine, and strychnine, is coming into prominence as a chemical food. Send to the author for a sample, to 305 West 86th Street, New York city.

The Taylor Brothers Clinical thermometers, of Rochester, New York, are among the most valuable on the market. Send to them for a circular.

THE
QUARTERLY JOURNAL OF INEBRIETY.

Subscription, \$2.00 per year.

Vol. XVII.

OCTOBER, 1895.

No. 4.

This Journal will not be responsible for the opinions of contributors, unless indorsed by the Association.

DIPSOMANIA AND HYPNOTISM.

BY JOHN GORDON DILL, M.A., M.D.,

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Among the many disorders of the mind, one of the most prevalent in this country is that form of moral insanity which leads to dipsomania, and there is none which causes such widespread misery, or which leads oftener to crime. For, in the course of his unfortunate life, the drunkard not only becomes himself a physical and moral wreck, and in time swells the immense army of paupers and criminals, but he is a perpetual source of grief and disgrace to his relations and friends, and his children inherit from him in a marked degree an intellectual, a moral, or a nervous instability, which may hopelessly cripple them from their earliest years, or develop later into some neurotic disease. Now it cannot be too strongly insisted upon that habitual drunkenness is a disease — a moral, as opposed to an intellectual insanity — and that, no matter how real the resolution to reform, or how intense the pangs of remorse for the past may be, it is a positive fact that the power of resistance does not equal the impelling force of the temptation and craving to drink. The drunkard, in other words, is not his own master.

The English law, unfortunately, does not recognize this, and the penalty for drunkenness serves to keep many a miserable being in existence, by the periods of enforced abstinence between his orgies, which he passes in prison. Nor has any system of treatment been discovered which can be relied upon, although innumerable specifics have been introduced from time to time, only to be discredited after trial. Certainly the power of resistance does increase during total abstinence, and, given the will to reform, a long period of compulsory abstinence has often the effect of getting rid of the craving to drink, and the patient is cured if he remain a total abstainer ; but even thus, one glass of alcohol may be enough to restore the disease, and cases are by no means uncommon in which, after many years of apparent cure, the patient has felt confident of his power to drink in moderation, and the disease has returned. In so terrible and often hopeless a malady, the merest straw of possible salvation is naturally grasped, and the encouraging results which hypnotism had given in the hands of other observers led me to give it a trial.

Time alone can prove the value of any treatment, even if it is apparently successful at the outset, and I shall therefore only record the results of the first few cases which came under my observation some years ago, with their subsequent history as far as I have been able to trace it.

Case I.—Mrs. J. was a lady between 40 and 50 years of age, a confirmed drunkard, who had been deprived of the care of her children, and was subjected to more or less control. There was no apparent wish to reform, but considerable violence and impatience of restraint when the desire to drink was strong.

I first saw her in 1886, and about a year later determined to try the effects of hypnotism. She was not very susceptible, and the unconscious stage, which was not often reached during a course extending over many weeks, was not deep, but she became very much quieter, and the craving for drink abated for a time. It was thought wise, however, to place

her under stricter surveillance in the country, and I have lost sight of her.

I may here mention that I have noticed with some drunkards that the craving for drink comes on with great intensity at more or less regular intervals, with periods of intermission, during which they may have little or no temptation. Moreover, in the course of many cases, this "lucid interval" appears in time to shorten, until it almost disappears.

Case II.—A. W. was a housemaid, aged about 32, who had lost her character and her virtue by her drunken habits.

I first saw her at "St. Monica's Home," to which, at the time, I was Honorary Physician, and after three or four suggestions that she should dislike all forms of alcohol and be unable to take it, she lost all desire for drink.

Eventually a situation in a gentleman's family was found for her, which she has retained for the past six years, and she is a most valued and trusted servant.

It is worth notice, that when she was suffering from influenza and had been ordered port wine by another medical man who was attending her, she resisted strenuously, and deceived her mistress by pouring it away.

Case III.—Miss I. was a well-connected woman, whose relations had disowned her, and who had found a temporary asylum in the home above mentioned.

Although she really wished to be cured, I was unable to produce the slightest effect upon her, nor were two other more experienced hypnotists than myself, who very kindly came with me to see her, more successful.

A curious point about this case was that the craving for drink came on with a hallucination that she could smell brandy, and then nothing could stop her drinking.

Case IV.—Captain A., an officer retired from the army, had been an inebriate for at least nine years. Mr. Hugh Wingfield, who happened to be at Brighton, very kindly came with me to see him, and at his first visit attempted hypnotism, and managed to render Captain A. powerless to get up from his chair. He then arranged to see him again

the next morning, but unfortunately during the night Captain A. developed the first symptoms of an attack of pneumonia, which became complicated by delirium tremens. After six weeks of a most dangerous illness, I advised him to go to Cambridge, and to put himself under Mr. Wingfield, who had most kindly offered to do all he could for him, but apparently he had become quite insusceptible to hypnotism. He had been a total abstainer during his convalescence, but after leaving Cambridge he relapsed into his former habits, and I have since heard of his death.

Case V.—Mrs. P., a lady aged about 55, had contracted habits of intemperance during a period of great domestic anxiety. I had very few opportunities of hypnotism, but the effect appeared to be good at the time, and although I have seen very little of her during the past few years, she has never, to my knowledge, caused any scandal by a relapse, though it is quite possible that she may drink secretly.

Case VI.—Captain B., a retired officer of the navy, aged 42, had been a drunkard for years. Although a wealthy man, he was accustomed to leave home when he began to drink hard, and would sometimes return covered with vermin, and without having changed his clothes since the day he went away.

He expressed no wish to reform, and although he was treated under my direction by a most experienced hypnotist, he was not very deeply affected, nor was absolute unconsciousness ever reached. At the same time he was quieter and more reasonable during the course of hypnotism, but after a few weeks he grew tired of it, and had a relapse shortly afterwards.

Case VII.—Mrs. A., aged 40, was the widow of a clergyman. The discovery of her failing had been made during the life of her husband, and for a time all forms of alcohol were kept from her, but when his decease took place, she bribed one of the undertaker's men to put a bottle of brandy into the coffin when it was brought into the house, and then got drunk in the room with the corpse.

I first saw her, some years later, when she had been rescued from the lowest depth of depravity by her sister. She was treated by the hypnotist mentioned in the last case, and was easily influenced, but although a post-hypnotic suggestion, that any alcoholic liquor would make her violently sick was effectual for about three days, at the end of that time it had apparently quite passed away, nor did repeated trials lengthen the period during which it took effect. This could not be continued indefinitely, and she was finally sent to a retreat under the act. I regret to say that I have had no information about her during the past few years.

Case VIII. — Mrs. E. was an excellent cook, but she had lost situation after situation, owing to her drunken habits. When I first heard of her, some former friends, who believed in the sincerity of her remorse, and trusted her promises of amendment, having found a place for her with a lady who knew her history, collected a small sum of money, part of which they expended in the purchase of some respectable clothes, which they gave her, with the balance of the money, some three or four days before the time when she was to enter upon her new duties. Needless to say that she had sold the clothes and spent the money, and was hopelessly drunk when the day arrived. I found her in a state of great destitution, in a miserable lodging with her half-starved child, and for about three weeks supplied them with the bare necessities of life, while I hypnotized her diligently. She was very susceptible, and soon found, to her surprise, that she was unable to take her share in a bottle of gin, which some boon companion had offered her. She rapidly regained respectability of manner and appearance, and in the course of about three weeks found herself a situation as cook, while her little daughter was admitted to an orphanage. From that time to this — now nearly five years — she has maintained her character as a most respectable servant, and was so highly valued by her employers that they kept the place open for her when she was obliged to go into a hospital to be treated for a varicose ulcer of the leg.

An interesting point about the case is that the effect of the suggestion has gradually worn off, and she is now able to take a glass of beer at dinner, but as yet she has suffered from no temptation to drink in excess.

Although it would be rash to base any conclusions upon the results of so very meagre a series of cases, they served, perhaps, to indicate that there is a possibility that this mode of treatment may be successful, or that, at any rate, until hypnotism has been tried, no case of dipsomania should be pronounced hopeless. Doubtless, in more experienced hands better results might have been obtained, and had we any certain means of ensuring a susceptibility to hypnotism, there is no reason that it should not be much more uniformly successful. I have noticed in more than one case that the best time to make an attempt is very shortly after a bout of drunkenness, and that the patient is less easily hypnotized the longer he is kept sober. Possibly, therefore, it may be discovered that some drug may have the effect of increasing susceptibility, but the few experiments which I have had an opportunity of making in this direction have hitherto yielded barren results. Such experiments, however, might well repay the trouble they entail, for could we but discover a certain and reliable method of dealing with dipsomania, it would be difficult to exaggerate its beneficent results, not only in the present by lightening the heavy burden of human misery, but in the future by promoting the health and happiness of unborn generations.

SMOKING. — The use of tobacco does not decline, despite the warnings of hygienists and moralists. According to a tobacco trade journal, there is a steady increase in the number of cigars and cigarettes smoked in this country, and notably in the consumption of cigarettes. During the fiscal year just closed there were sold in the United States 3,333,845,560 cigarettes, and 4,130,440,370 cigars. The increase in the consumption of cigars over the previous year was 68,522,938.

THE TREATMENT BY SUGGESTION, WITH CURE
IN FOUR SITTINGS, OF A MAN ADDICTED
TO THE ABUSE OF ALCOHOL, BROMIDES,
AND CHLORAL.

BY MR. C. THEODORE GREEN, M.R.C.S., L.R.C.P., OF
BIRKENHEAD, ENGLAND.

On October 6, 1893, a man aged 32, came to me complaining that for two months past he had been unable to get a night's rest without bromides and chloral; and also that he had an irresistible craving for whisky, and that his brain was not able for his work — that of cashier in a very large wholesale business. His account of himself was incoherent and vague, and he presented the restless appearance and excited manner of a person very near dementia. He was of fair complexion and hair, 5 feet 10 inches in height, in good physical condition of body, and having a cerebral development decidedly above the average. I gathered from his conversation that in 1887 he had a serious bout of drinking, from which he recovered.

Some few months ago he began to be worried about his work, and then commenced taking a single glass of whisky or beer in the evening. He soon found that one glass was not enough, so he had two, in this manner increasing his daily dose of stimulant till the craving for it was present all the time. He consulted some doctor, who told him to "go to Llandudno and drink lots of stout." Well, he went to Llandudno and drank several bottles of stout daily; but as he was nothing bettered, but rather grew worse, from the development of insomnia, he consulted another medical man, who gave him a prescription for "bromides and chloral." Without the nightly use of this sedative draught he got very little sleep, and, of course, his brain became more and more unfitted for the accurate work required of him.

He told me he had never been hypnotized before. As he expressed disgust for his unconquerable craving, and a belief that he could be influenced by hypnotism, I agreed to try what it could do for him. I insisted that this form of treatment would give him back his normal strength of will, so that he would be able to conquer his unnatural cravings. In fact, I made him understand that it was not *I* who was curing him, but that I was merely showing him how to cure himself by the exercise of his will. So, throughout the four sittings that I gave him I suggested that his will was growing stronger, and that all his functions were coming more and more under his own control. I also ridiculed the idea that the person hypnotized need give up or lose all his will power to that of the operator.

On October 6th he fell into a hypnotic slumber in seven minutes by gazing at a diamond. I then made suggestions that he would sleep well, and not awake at 2 A.M., as usual; that alcohol in all forms would taste vile, and, if swallowed, would be vomited. The next day he telephoned, saying that he had slept right on to breakfast time — the best sleep he had had for two months, and that he had had a glass of whisky, but had difficulty in keeping it down.

He now went away into North Wales with some friends, and I did not see him for a fortnight. Shortly before he returned he wrote me a long and very rambling letter that made me fear still more for his sanity. He said that he slept very well for four or five night after being hypnotized, but that since then he had been getting worse in every way. I advised his speedy return.

So, on October 22d, I hypnotized him again. This time the sleep was more profound, and he seemed unable to answer my questions till I suggested that he could do so quite easily. I repeated the former suggestions, and made use of ordinary mesmeric "passes," which I regard as a most useful form of suggestion.

On October 24th hypnosis was produced by my gazing into his eyes for two minutes. On this occasion he seemed

rather less excitable. He said he had been sleeping well except for a billious attack that occurred during the night of the 22d. He also said that he had taken no more sedative draughts, and that he had very little desire for alcohol.

On October 28th he said he slept quite well each night, and had no desire either for alcohol or sedatives, and that his brain was clear. As a test of the latter he procured one of his cash books on the 27th, and worked at it for two hours, and was delighted to find that he could work as well as ever. His manner is totally changed. He is restful, and acts and speaks as a man should when in perfect possession of his faculties. I now hypnotized him for the last time, and repeated the former suggestions.

Also I found I could inhibit all the special senses. I also gave him a crystal, and bade him see a picture of his dining-room, which I had not seen. He described it and the persons he saw moving about in it. But I was unable to make him see the picture of a room he had never seen, but of which I was thinking intently at the time.

Up to date (March, 1894), there has been no relapse. Time only can show whether this cure be permanent; but I think I am safe in assuming that any recurrence of the above symptoms will be as easily abolished by hypnotism as they were before.

ALCOHOL IN SHOCK.—Dr. Wood is authority for the statement, "That alcohol is probably of no value whatever in shock: indeed, I am perfectly sure that a large dose of alcohol in shock puts one nail in the coffin of the patient, and if you want your patients to come out of shock you will be very careful in giving them alcohol. Alcohol stimulates the heart, but it paralyzes rather than stimulates the blood vessels." The theory is, "by its action on the blood cells it checks oxidation and limits the power of absorbing oxygen and eliminating carbonic gas."

POST-ALCOHOLISM AND INEBRIETY.

BY S. V. CLEVENGER, M.D., CHICAGO.

Alienist and Neurologist of the Reese and Alexian Hospital, Chicago; Late Medical Superintendent of the Illinois Eastern Hospital for the Insane, and Pathologist of the Cook County Insane Asylum; Author of "Comparative Physiology and Psychology," "Spinal Concussion," etc.

Ethyl alcohol, spirit of wine, is commercially assumed to be the base of intoxicating drinks, and the purest of these is capable of working great havoc when abused, but the demand for cheap liquor in vast quantities substitutes for portions of the less harmful ethyl or vinic alcohol what is known to chemists as the poisonous amyl alcohol (potato spirit or fusel oil). The aroma or bouquet of liquors is largely due to certain ethers of the more poisonous amyl and butyl alcohols, notably the acetic and valeric; then super-added, all too often, by distiller, rectifier, wholesaler, and especially by the retailer, are sophistications, flavors, and perfumes for the purpose of cheapening the resulting compound, which, by the time it reaches the average consumer, contains, in addition to the alcohol diluents to increase bulk, articles to give it false strength, fictitious appearance, odor, and taste.

In the English Licensing Act of 1872 (35 and 36 Vict., c. 94) there is a schedule of substances called "deleterious ingredients" found to have been used in adulterating intoxicating liquors; they are cocculus indicus, common salt, copperas, opium, Indian hemp, strychnine, tobacco, darnel seed, logwood, salts of zinc or lead, and alum. Since then, ingenuity and cupidity have extended the list indefinitely among dye materials, both organic and inorganic; and there are also added correctives of acidity, such as litharge, lime, soda, potash; astringents like catechu, oak bark, and aloe leaves; earths for decolorizing; sweetening agents, and ethers for

flavoring. Most of these articles are unwholesome, to say the least, and tend to debilitate and otherwise set up depraved bodily states.

Chronic alcoholism in its most obvious features is a condition of functional poisoning such as is seen in its production of lethargy, stupidity, and acute narcosis. Less noticeably, but gradually, it operates as a tissue poison, affecting parenchymatous elements, particularly epithelial and nerve structure, if not to a greater or lesser degree all the cellular components of the body. A slow degeneration is produced until the blood vessels are involved in thickening and fibroid changes. Oxidation of tissues is checked, since alcohol is consumed in place of the fat, leading to fatty changes which may advance to general steatosis.

Dr. Magnus Huss of Stockholm in 1849 first prominently directed the attention of physicians to the subject of alcoholism, a term he was the first to use. He described the paralytic and anesthetic forms of chronic alcoholism, also later referred to by Hammond ("Diseases of the Nervous System," 1881), Ross ("Diseases of the Nervous System," 1885), and other neurologists.

Gowers ("Diseases of the Nervous System," vol. 1, 110, *et seq.*, 1892) under the heading "Multiple Neuritis," gives still more recent details of these distressing consequences of drinking alcoholics.

Magnan (*De L'Alcoolisme des diverses formes du Deliré Alcoolique, et de leur traitement*, 1874), Virenque, Hammond, and others observed an occasional loss of sensation involving only one lateral half of the body, as in hysteria. The other special senses are generally implicated. Thus the patient loses the sight of one eye, cannot hear with one ear, can taste with only half the tongue, and smells with but one nostril.

Gowers (op. cit. 119) states that alcoholic polyneuritis is most frequently met with and preponderates over all other forms of nerve inflammation. It results chiefly from the stronger forms of alcoholic drinks, and especially from spirit

drinking. It is more common among those who take small quantities frequently, than among those who indulge in an occasional spree, probably because the total quantity is greater by the former. It is far more frequent among women than among men; probably three times as frequent. Other causes often co-operate with alcohol in exciting polyneuritis, especially exposure to cold, and, in the poor, insufficient nourishment.

The symptoms consist in motor weakness, sensory disturbance, and inco-ordination. The weakness involves first and chiefly the flexors of the ankle and extensors of the wrist and fingers in the forearm; the result is wrist-drop and foot-drop. Other muscles suffer in severe cases. The sensory symptoms are tinglings, pains, varying in place and degree, tenderness and loss of cutaneous sensibility. The inco-ordination resembles that present in the slighter forms of locomotor ataxia.

Neuritis is the most common finding in chronic alcoholic autopsies.

Catarrh of the stomach, with furred tongue, heavy breath, a feeling of epigastric distress or "sinking," impaired appetite, and constipation are ordinarily experienced.

The liver may undergo changes leading to various forms of cirrhosis. Sometimes moderate drinking may reveal a special liability to hepatic cirrhosis, while, on the other hand, hard drinking for thirty years may leave the liver nearly intact.

The stomach and liver disorders of drunkards produce dilated veins of the cheeks and nose, causing suffusion of those parts; acne rosacea. The eyes are watery, the conjunctivæ hyperemic and often tinged with bile.

Formad claims that the kidneys are hypertrophied without other change as a rule, and Guy's Hospital Reports verify this finding. Pitt places this as occurring in 43 per cent. of hard drinkers, and where the typical granular kidney occurs it is indirectly caused by arterial changes. (Osler, "Practice of Medicine," 1001, 1892.)

The greatest variability in general manifestations can be found in different patients amounting to idiosyncrasies in particular cases, and in other patients are classifiable into groups of a great or less number.

The organic changes seem to be erratic, but are according to the resistance of organs. As a forerunner of serious alterations in the spinal cord, neuritis is not a simple and harmless disorder.

Magnan has demonstrated an alcoholic paraplegia in which Buzzard found electrical degeneration reaction. Some cases end fatally, though Bramwell ("Diseases of the Spinal Cord," 307, 1884), considers it for [the most part functional. Broadbent's description (*Medical Times and Gazette*, Feb. 16, 1884), in which myalgic pains, hyperesthesia and double wrist-drop is included, should be compared with the pathologic changes found by Eichorst of Zurich (London *Lancet*, May 19, 1888) attending alcoholic neuritis, in cases of inco-ordination followed by paraplegia and wrist-drop, tenderness of muscles, anesthesia, abolition of reflexes, and, finally, vesical and rectal paralysis. The pathologic anatomy consisted in cord hemorrhages in the dorsal, gray, thickened blood vessels, degenerated and atrophied tibial and radial nerves with axis cylinders destroyed; the peripheral extremities were worst diseased; connective tissue proliferations of endo and perineurium and inflammatory changes in their vicinity. A muscular atrophy was secondary to the neuritis, the nerve sheath inflammation extended to the interstitial muscular tissue. Bramwell notes that myelitis and other forms of organic disease may be caused by alcoholic excess, hence the paralysis may be permanent and incurable.

The enfeeblement of judgment and will may finally end in dementia.

Post-mortem does not show any particularly characteristic changes in the nervous system invariable for all cases of chronic alcoholism, showing that resistance is greater in some than in others. Sometimes hemorrhagic pachymen-

ingitis is observed with thickening and opacity of the pia-arachnoid membranes and wasting of the convolutions, or there may be a chronic encephalo-meningitis with membrane adhesions, but most of these pathologic states are in advanced cases of alcoholism, the more incorrigible sort, as can be readily believed when we note the fact of many chronic drunkards having been reclaimed and restored to the world about as they were before the habit was formed. The older the patient and the longer the addiction, the greater probability would there be of finding organic changes in the brain and its envelopes and blood vessels.

Many chronic alcoholic insane exhibit remarkably close resemblance of symptoms to those commonly found as the result of injury to the brain, in traumatic insanity. These symptoms are: changes of character, lapses of memory, headaches, sleeplessness, irritability, suspiciousness, long apparently lucid intervals, homicidal and suicidal impulses, delusions of persecution. These peculiarities appearing in the alcoholic insane long after being incarcerated in an asylum, during which time no intoxicating liquor has been taken by them, point clearly to organic brain destruction, accomplished from within, but as severe and hopeless as when the brain had been injured by a blow upon the head, with subsequent extension of inflammation to the membranes and cerebral tissues.

It is when the mental degradation which temporarily occurs in alcoholism becomes permanent that chronic alcoholic insanity may be said to exist. During the acute stages there may be hallucinations, illusions, and delusions which disappear on recovery from the blood poisoning; the persistence of some of these states betokens permanent damage to the mental apparatus, and the brains of the chronic alcoholic insane invariably exhibit evidences of destructive organic changes.

It is with astonishing frequency that jealousy of the wife or mistress exists to an exaggerated degree in most forms of drunkenness, from simple suspicion to delusions of marital

infidelity, which in extreme cases may originate hallucinations of gross amours being carried on in the patient's presence.

It sometimes happens that the alcoholic may have grounds for suspicion in facts, but this does not lessen the delusional origin of his accusations. A frequent outcome of the notorious marital unhappiness thus caused is a brutal wife murder, the body of the victim sometimes being found hacked to pieces or partly destroyed by fire. The insane fiend may make but a stupid attempt to escape, or none at all, either expressing surprise at, or doubt of the reality of the event, or attempting justification in explanations.

The memory and intelligence suffer gravely, though not always obviously, for it may require considerable familiarity with the former peculiarities of the patient to determine the degree of mental impairment, and comparisons of his past and present are often possible only when he has been under observation for a greater or lesser period; in some cases, months may be necessary. He may be able to attend to routine duties, but is inconstant and easily diverted. The reasoning powers are lessened in varying degrees, and many such changes are not determinable off-hand.

Delusions, particularly such as relate to the wife's unfaithfulness, are fixed, but not systematized, for his explanations concerning them are vague and illogical. There is a melancholic persecutory tinge to all his ideas.

Some cases of chronic alcoholism on the verge of chronic alcoholic insanity experience auditory hallucinations of mandatory and accusatory kinds, and these may become so distressing as to lead to suicide, homicide, or insane acts generally. The dangerous character of insanity with auditory hallucinations is fully recognized by alienists.

In asylums for the insane will be found many cases of insanity that have been complicated with alcoholism, particularly a peculiar form called traumatic insanity, the result of head injuries, after the receipt of which there is a remarkable tendency to drink to excess, and the alcoholism may be

combined with the traumatic insanity in every conceivable degree, sometimes outrunning the original psychosis in its influence for evil. Epileptics are sometimes incorrigible drunkards, and epilepsy may appear for the first time when an alcoholic has abstained from liquor for some unusual length of time. In such cases there may have existed *petit mal*, unnoticed previously, or even convulsions may have occurred at night, during sleep, and after stopping the use of liquor the fits have appeared during the day, through the alterations in habits. Any other form of insanity may have, to some degree, the impress of alcoholism to modify it, and where this complication is extreme, as it is frequently in the head injury cases mentioned (sunstroke victims fall into this category), there are characteristics in common with those of chronic alcoholic insanity that are well recognized by asylum physicians and that often cause considerable annoyance.

Soon after the commitment of a chronic alcoholic insane case to the asylum or hospital, he appears to improve remarkably, if he escape the consequences of his last debauch and does not die of pneumonia or exhaustion; locked up at first in a ward, he is sooner or later trusted about the grounds, and can be made very useful as a workman of some sort. He may refrain from asking for a discharge for a long while for the purpose of convincing the superintendent of his recovery, but unless the patient conceal his delusions, as many insane do, he is liable, with a little questioning or in his letters to friends or relatives, to reveal the permanency of his delusions of persecution. The writings of some of these apparently sane alcoholics contain the foulest abuse of mother, wife, or children, without the least warrant for it in their former treatment of the patient.

Sometimes a weak-minded relative may be found espousing the cause of the "unjustly detained" alcoholic, or well-meaning but misguided friends may satisfy themselves of the "recovery," and even resort to *habeas corpus* proceedings to secure the patient's discharge.

Under the watch and restraint of hospital sojourn and their gradual admission to parole, with occasional breaks thereof, many of these patients assume, to all appearances, their original mental condition. To the superficial observer they are perfectly sane; many work cheerfully in the shops and talk quite intelligently about the possibility of relapses if allowed to go. But a large percentage are importunate, and these are the least to be trusted, for their anxiety to flit is born of their inability to gauge their feeble will power to resist temptation. If they are discharged, back they come, not infrequently with newspaper and other criticism of the hospital authorities for having liberated such a dangerous character. These same critics are just as liable to write up sensational comments on the injustice of keeping perfectly sane persons at the behest of relatives who, the critics affirm, have some pecuniary motive in the patient's being deprived of liberty. Nor is the trouble taken to inquire whether the county is charged with the case as a pauper or not.

When *habeas corpus* proceedings are begun, the natural inference is that there must be some malign reason for the detention. Probably it is just as well in the long run that the public, should be suspicious, but the conscientious hospital physicians are put to unnecessary trouble in explaining matters of pathology and general medical experience to laymen who are much more familiar with business affairs.

The hospital physicians will congratulate themselves that cases of this kind are improving, and discuss the advisability of trusting them on parole, preliminary to letting them go home on trial, but the records of the cases suggest caution, such as domestic horrors, including attempted wife murder, brutality to children, improvidence to a criminal degree, the wife usually faring the worst, though when he is not drinking she claims her husband to be the "best and kindest of men."

Notwithstanding all this, such near relatives often beset those in charge of the hospitals to liberate their husbands, sons, or fathers; poor ignorant creatures, because they can

only see the hopeful side of matters for themselves, and can not appreciate the vast fund of information possessed by the doctors as to the frequently disastrous consequences of too early discharges, or, sometimes, any discharge at all.

The alcoholic insane have been apparently sane while at the asylum, and even after ten years' trial when they were allowed to return home they would resume all their bad habits, such as furniture smashing, chasing the family into the streets with axes or knives, and after being returned to the asylum in a maniacal state they would resume all their apparent sanity and sweetness of disposition, which arouse the suspicion of the visitor that some unworthy motive on the part of somebody withholds so useful a person from society at large.

Among the sadly comic instances of this kind appear liberations after carefully weighing probabilities and enduring the threats, entreaties, and promises of the family and the patient, against the better judgment and misgivings of the physicians; and when something does occur from the risk, as too often happens, forthwith not only the public but the relatives censure the weakness of the doctors for having listened to them at all.

A washerwoman, who had about as much experience with the inner life of a large city as some physicians acquire, used to dub the defects produced by alcoholism as "street angels and home devils." Much danger to the community exists in the seeming sanity of such cases. There is no provision for their incarceration on the ground of their great liability to be homicidal, and when they do commit a murder it is a difficult matter for the public to comprehend the insanity during the quiet stage induced by imprisonment and liquor deprivation.

Alcoholic dementia is simply a secondary or terminal dementia of profound type, that has usually supervened upon alcoholism, the intermediate stage of chronic insanity being often short, or having escaped notice altogether, as such; being merged from the general alcoholism. It is as perma-

nent and incurable as any other secondary dementia. The organic brain and blood vessel changes in this, and other chronic alcoholic insane states often shorten the lives of patients ; many succumb from pneumonia which proves so fatal to drunkards generally.

Post-alcoholic conditions are such as become evident during abstinence after the protracted use of liquor.

If the shock of abstinence is rallied from, we can then determine how much is left of the patient. Destructive changes in the brain may be, to an extent, masked by drinking ; that is, the behavior of the patient may be erroneously ascribed to the drinking when it in larger part may be due to brain alterations produced by over-indulgence.

The extreme ground is taken that by whatsoever means recovery from habitual drunkenness is made, the health is never regained. Dr. Clum (*Quarterly Journal of Inebriety*, October, 1891, 382), observes that those who have been addicted to the excessive use of alcoholic beverages for a number of years may be restored to a state of sobriety, but they are generally left with an entail of chronic disease which eventually ends their career. They die temperance men, but die as a result of disease contracted by the excessive use of liquor. The habit is abandoned and nature and remedies are given a chance to do their part toward reinstating the individual, but the vital organs have been injured beyond reparation.

This gloomy outlook for the "reformed" inebriate concerns a large percentage of cases, but is far from being universal. Drunkenness is not the only consideration ; the health previous to and during the addiction should be regarded, aside from, as well as with, the drinking habit and its extent ; the age, associations, and conditions, such as exposure and immoral practices, as incidental or consequential matters, need consideration in ascertaining how far a breakdown is ascribable to drink or its stoppage.

Heart weakness, that had previously been compensated to some extent by stimulants, whether created by their use

or not, often becomes apparent in post-alcoholic life. Syphilis is known to have become modified and somewhat checked through alcoholic poison acting upon the syphilitic poison, and when this antagonism ceases the syphilis has become more virulent. Livers, kidneys, nerves, and brains that have been structurally degraded cannot be restored by mere change of habit; indeed paralytic states may become evident immediately after liquor withdrawal through the shock of readjustment to new vascular workings. For example, when an alcoholic neuritis with membrane thickening and beginning spinal cord myelitis has been inaugurated through alcoholism, the sudden change in the circulation caused by abstinence will inevitably render the physical consequences of such inflammatory and neoplastic states more apparent. Pressure symptoms, debility, and marked sensory and motor impairment are liable to occur, from monoplegias to complete paraplegia.

Tremens begins during the abstinence of drinkers, and from circulation changes in the brain; temporary sobriety causes a dazed, bewildered mental state in the hard drinker. Even were the craving destroyed, and were the will-power to resist drinking to be imparted, by any means, too often the inebriate then finds himself so completely out of his environment, so changed are inner to outer relations as to what constituted his previous existence, that he rushes back to his former habits about as a fish would take to water, and for analogous reasons.

Hard drinkers are the first to succumb to epidemics, such as cholera and yellow fever, and abstinence merely uncovers the debased organic weaknesses that these epidemics coöperated with destructively.

After prolonged use of liquor, abstinence sometimes is followed by acute melancholia, in which the delusions of that psychosis are commingled with some that are peculiar to alcoholic insanity. This depressed state seems to be owing to exhaustion of the system habituated to alcoholic sustenance, and not yet readjusted to the assimilation of proper food.

A demented condition, more or less profound, may set in from the same causes. A well-known stock-yards millionaire of Chicago had, up to his sixtieth year, guzzled fusel oil in all its disguises as ethyl alcohol compounds, and a sharper, shrewder person was hard to find; but he abandoned his drinking suddenly, utterly and completely, and during the succeeding three or four years gradually became incapable of attending to business, presenting the apathy, memory loss, and other characteristics of what was known as "primary mental deterioration," but which Voisin claims to be "atheromatous insanity," the blood-vessel destruction found *post-mortem* justifying the designation. While this mental malady is often independent of alcoholic habits, its appearance as apparently connected with the stoppage of drinking is worth noting. In those who indulge many years and then quit drinking, the alteration in behavior is quite observable; they are certainly quieter, calmer, and while doubtless far better off than when stimulating, the general tone is below what it used to be, or what it would have been had they not drunk at all; meddling with fire must be at the expense of some scars. While atheromatous insanity may occur in the temperate, a condition like it, if not identical with it, could readily be conceived as consequent upon abstinence after long addiction, or the pathologic condition mentioned itself could be directly induced by alcohol, and persist, whether alcohol is or is not taken after the condition is instituted. The tendency to steatosis in the intemperate can be recalled in this connection, and doubtless many cases of so-called dementia from abuse of alcohol may be found to be of Voisin's type of atheromatous insanity.

The hyperemic state of chronic alcoholism necessarily alters the cerebral circulation in various ways in many, but not in all cases, causing endarteritis, leucocytic exudation, neoplastic organization, and capillary extravasation into the cerebral tissues, comparable to the rosacea observable in some drunkards' cheeks and noses. In my autopsies of the alcoholic insane at the county asylum, I invariably noticed

a rusty discoloration of the dura matter along the course of the superior longitudinal sinus, and other evidences of old inflammatory conditions such as adhesions of the membranes and cerebral tissue of the convexity and basilar regions. The vascular and meningeal alterations varied in degree according to the patient's age. Where frailty of blood vessel organization existed congenitally there was greater liability to pathologic change in such cases.

The finer mental coordinations in any one are maintained by effort; being the latest faculties acquired, and their tenure being so dependent upon full brain integrity, it is plain that the moral nature has been superimposed upon the less easily destroyed brute nature, through finer and weaker histologic arrangements acquired and inherited, demanding for their exercise the clearest kind of brain activity. Vitiating blood quickly blots out these better but feebler functions for the time being, just as exhaustion is felt first in our weakest joints. So the moral nature, which is merely a higher intelligence, may depart when the seat of intellect is weakened by any cause such as senility, drinking, insanity, arrest of development, traumatism, and some diseases.

When certain pathologic adjustments, involving imperfect compensation, occur, such as thickened arterial walls which resist the increased flow of blood, then a new plane of mental operation is established, which, if disturbed by change of habits, as by withdrawal of the customary greater heart impulse, it is but partially and inadequately recompensated by the pure blood. Practically, the adjacent cerebral tissue must suffer from anemia to a greater or lesser extent, and where previously the blood was driven through disarranged avenues, it now makes its way feebly and in places not at all. Nor is this all; the sclerosed and otherwise changed tissue becomes a more prominent hindrance to function when the artificial nutrition and circulation is cut off. So the poor fool of a drunkard is too often thus "damned if he does, and damned if he don't" continue.

Summarizing post-alcoholic bodily and mental states there

may be found many organic destructive changes in the blood vessels, liver, nerves, and brain, which were not so evident during the addiction, owing to the somewhat compensatory effect of the alcohol, and hence the masking of diseases.

The simple privation may kill through the weak heart losing its wonted stimulant, but such cases are not very common; debility is the most frequent consequence of "reform," but this is often a return to what preceded and may have led to the over-indulgence. Cerebral blood vessels subjected to engorgement are liable to rupture at any time where weak points exist, and fatty degeneration of vessel walls, induced by the liquor, may culminate in apoplexy, whether drinking is continued or not.

A single severe attack of delirium tremens may make profound changes for the worse in the future workings of the brain, and the typhoid stage of some cases of delirium tremens show the ravages of the poison often in life-long sequelæ.

Chronic alcoholic insanity may make its first gross appearance after abstinence enforced in jail or otherwise.

Necessarily, when liquor is withdrawn, a change for the better is ordinarily the rule, but such withdrawal in some cases may operate as a shock, and in all cases a readjustment of the entire physiologic make-up must occur. It is conceivable that epilepsy or insanity may find in such shock a potent exciting cause and the whisky soaking is ample as a predisposing influence, when it can alter the brain structure, in time, as thoroughly as a contusion or a concussion.

But what the inebriate has drunk, how long he has been drinking, and his power of resistance, associated diseases, hereditary and other tendencies, are to be taken into account; and with these it is surprising how large a number of heavy drinkers escape any obvious trouble due to such excesses. A well-known druggist of Chicago was a sot until his fortieth year, stopped drinking and died at 70 years, having built up a large business; while others who had not taken half his

risks with liquor succumbed during or after ceasing their bad habits.

Post-alcoholic conditions, such as insanity, paralysis, weak heart, etc., that occur in a minority of cases after alcoholic disuse, only the most thoughtless or perverted could use as arguments against the stopping of drink; as the liquor in such cases produced the trouble which merely culminated after the habits were changed; such climax, being inevitable in any case, and impending, might have been reached earlier, or in a graver form, had the inebriety continued.

In a few words, drunkenness is a constant menace to the mental and bodily health, and it is far safer to escape from its ravages scarred and maimed, than to go on sooner or later to certain destruction. Though the vast majority may be rescued entire, or nearly so from intemperance, no one can tell what the chemic devil has left of him until months or years of sobriety have passed.

A CONTINENTAL MEDICAL TEMPERANCE SOCIETY. — We are very glad to hear (says the *Medical Pioneer*) that one of the results of the International Congress against the abuse of intoxicating liquors, recently held at Basle, Switzerland, is the formation of a Medical Temperance Association among the medical men on the Continent. We believe that total abstinence is one of the conditions of membership, and very properly so, as nothing short of this can be effectual. The president is Dr. A. Smith of Grossherz, Baden, and the honorary secretary, Dr. Fuer, assistant professor of psychology in Heidelberg. Both these gentlemen read excellent and thoroughgoing papers, from a temperance point of view, at the recent Congress. About five-and-twenty names were, we believe, given in as desiring membership at the first meeting. This is a good beginning, and we trust that this infant society will speedily grow in strength, and accomplish a great work. The number of medical men on the Continent being so very large, we may expect it will have a large membership in course of time.

THE INFLUENCE OF ALCOHOL UPON URINARY TOXICITY, AND ITS RELATION TO THE MEDICAL USE OF ALCOHOL.*

BY J. H. KELLOGG, M.D., BATTLE CREEK, MICH.

The biologic test for the urine, perfected by Bouchard, is a most important addition to our means of studying disease processes in the body and the effects of various infectious and toxic agents upon the animal organism. Bouchard demonstrated what had previously been suspected, that urea is not the most important toxic agent of urine, although the most abundant excretory product. His researches demonstrated the fact that urea is only very slightly toxic in character, and that it, in fact, serves a very important and useful rôle in the economy by stimulating renal activity, acting thus as a true physiologic diuretic. The experiments of Bouchard and Rogers have shown very clearly that the urine contains more than half a dozen toxic agents, most of which are far more important in character than urea. Urea is, however, a useful measure of these agents under ordinary circumstances, that is, when the urine contains only the normal toxins; but, under unusual morbid conditions produced either artificially for experimental purposes, or naturally as the result of an infection of some sort, the quantitative determination of urea is no longer a reliable guide; in fact, it may give no suggestion in relation to grave morbid processes resulting in the formation of large quantities of toxic substances and a consequent condition of general toxemia. The same is true with reference to the various other modes of examining urine in common use.

The biologic test of the urine does not require a chemical examination of the urine, hence does not depend upon the

* Read in the Section on State Medicine, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

chemic recognition, by reagents, of minute quantities of chemic substances, the reactions for which may be obscured by the presence of other known or unknown substances, but makes a direct determination, both quantitatively, and, to some extent qualitatively, respecting the toxic character of the urine in both normal and pathologic conditions. The following is the method: The urine collected for a definite time, and, if necessary, calculated for twenty-four hours, is carefully neutralized and then injected at the rate of 1 c.c. per second into the venous system of a rabbit which has previously been carefully weighed; the weight of the patient must also be known. The exact quantity required to cause the death of the rabbit, and the symptoms occasioned as the result of the injection are carefully noted. The following are obtained, directly or indirectly:

1. The amount of urine required to kill a kilogram of rabbit.

2. The number of kilograms of rabbit which might be killed by the total amount of urine produced in twenty-four hours.

3. The amount of rabbit which might be killed by the quantity of toxic substances produced in twenty-four hours by each kilogram of the patient. The latter quantity is termed the urotoxic coefficient, and is represented normally by the fraction .44, that is, the quantity of urine produced in twenty-four hours by each kilogram of normal human being is capable of destroying the life of .44 kilogram of living being; consequently, if these substances were retained within the body by failure of the kidneys to eliminate them, death would result, approximately, in about two and a half days. Clinical observation with reference to the effects of complete suppression of the urinary function agrees with the results of experimental study.

I have employed the biologic test a very considerable number of times, some hundreds of times in all, and am fully satisfied with regard to its reliability and accuracy. It is, indeed, a most remarkably delicate test of the condition

of the system in general, and of the renal function in particular. A few observations which I have made will serve to illustrate the value of these means of investigation. In a case of tuberculosis the toxicity of the urine was found to be double the normal. Among the most prominent symptoms occasioned by the injection was a very great rise in temperature, the elevation in temperature amounting to over three degrees C. In a considerable number of tests made, in which the urine of a patient suffering from typhoid fever was employed, the toxicity of the urine was found to be greatly increased in every instance, and occasioned a marked elevation of temperature. In a case of intermittent fever of malarial origin, the urotoxic coefficient of 2.36 was found during the paroxysm, the coefficient of being .76 before, and .78 after. This observation seems to show that during the paroxysm of malarial fever there is produced by the parasites of this disease a febrile substance to which the febrile action is due. This subject the writer has considered at length elsewhere.

One of the most interesting observations I have made was in a case of idiopathic epilepsy; the urine employed was collected while the patient was just recovering from a succession of epileptic seizures, having been in what is known as the epileptic state, or static epilepticus, for nearly thirty-six hours. The urine was found to be extremely toxic, the degree of toxicity being three times the normal. The rabbit died in convulsions which were distinctly epileptiform in character.

The biologic test applied to the urine of pneumonia, erysipelas, scarlet fever, diphtheria, and all other infectious maladies shows a marked increase in the toxicity, when the patient is doing well, that is, when the poison is being eliminated by the kidneys. In pneumonia, for example, the toxicity of the urine may be considerably diminished during the first few days, but when the critical period is passed and favorable symptoms make their appearance the toxicity of the urine is found to be three or four times the normal.

Delicate chemic investigations of the urine which have been made by Gauthier, Brieger, and others, have revealed the presence in the urine of definite organic compounds which possess characteristic toxic properties. Chemic researches, when sufficiently refined and delicate, thus agree with the biologic test, but the modes of investigation employed are too troublesome to be ordinarily used, hence the value of the biologic test.

The above-mentioned observations, and many others, having fully established my confidence in the biologic test as a reliable mode of investigation, I determined to make an experiment for the purpose of determining the influence of alcohol upon urinary toxicity. The subject of the experiment was a healthy man of 30 years, weighing 66 kilos. For fifty days prior to the experiment he had taken a carefully regulated diet and the urotoxic coefficient had remained very nearly uniform. The urine carefully collected for the first eight hours after the administration of eight ounces of brandy diluted with water, showed an enormous diminution in the urotoxic coefficient, which was, in fact, scarcely more than half the normal coefficient for the individual in question. The urine collected for the second period of eight hours showed an increase of toxicity, and that for the third period of eight hours showed still further increase of toxicity, the coefficient having nearly returned to its normal standard.

The bearing of the results of this experiment upon the use of alcohol in pneumonia, typhoid fever, erysipelas, cholera, and other infectious disorders will be clearly seen. In all the maladies named, and in nearly all other infectious diseases, which includes the greater number of acute maladies, the symptoms which give the patient the greatest inconvenience, and those which have a fatal termination, when such is the result, are directly attributable to the influence of the toxic substances generated within the system of the patient as the result of the presence of the specific microbes to which the disease owes its origin. The activity of the liver

in destroying these poisons, and of the kidneys in eliminating them, are the physiologic processes which stand between the patient and death. In a very grave case of infectious disease, without this destructive and eliminative activity the accumulation of poison within the system would quickly reach a fatal point. The symptoms of the patient vary for better or worse just in relation to the augmentation or diminution of the quantity of toxic substances within the body.

It is the recognition of this fact which has led to the recent general revival of hydrotherapy in the treatment of acute febrile disorders. Water applied externally stimulates cutaneous elimination, and employed freely internally by water drinking and the introduction of water in quantities into the colon to be retained for absorption, aids liver and kidney activity. If the patient dies it is because his liver and kidneys have failed to destroy and eliminate the poisons with sufficient rapidity to prevent their producing fatal mischief among the delicate mechanisms of the body.

In view of these facts, is it not a pertinent question to ask how alcohol can be of service in the treatment of such disorders as pneumonia, typhoid fever, cholera, erysipelas, and other infections, since it acts in such a decided and powerful manner in diminishing urinary toxicity — in other words, in lessening the ability of the kidney to eliminate toxic substances? In infectious diseases of every sort, the body is struggling under the influence of toxic agents, the result of the action of microbes. Alcohol is another toxic agent of precisely the same origin. Like other toxins resulting from like processes of bacterial growth, its influence upon the human organism is unfriendly; it disturbs the vital processes; it disturbs every vital function, and, as we have shown, in a most marked degree diminishes the efficiency of the kidneys in the removal of the toxins which constitute the most active factor in the diseases named, and in others of analogous character. If a patient is struggling under the influence of the pneumococcus, or Eberth's bacillus, Koch's cholera microbe, or the pus-producing germs which give rise

to erysipelatous inflammation, his kidneys laboring to undo, so far as possible, the mischief done by the invading parasites, by eliminating the poisons formed by them, what good could possibly be accomplished by the administration of a drug, one of the characteristic effects of which is to diminish renal activity, thereby diminishing also the quantity of poisons eliminated through this channel? Is not such a course in the highest degree calculated to add fuel to the flame? Is it not placing obstacles in the way of the vital forces which are already hampered in their work by the powerfully toxic agents to the influence of which they are subjected?

In his address before the American Medical Association at Milwaukee, Dr. Ernest Hart very aptly suggested in relation to the treatment of cholera the inutility of alcohol, basing his suggestion upon the fact that in a case of cholera the system of the patient is combating the specific poison which is the product of the microbe of this disease, and hence is not likely to be aided by the introduction of a poison produced by another microbe, namely, alcohol. This logic seems very sound, and the facts in relation to the influence of alcohol upon urinary toxicity or renal activity, which is elucidated by our experiment, fully sustain this observation of Dr. Hart.

It is also easy to show the important bearing of the fact to which we have called attention upon the relation of alcohol to chronic disease. Alcohol is doubtless, at the present time, much less frequently prescribed as a remedy in chronic disease than a quarter of a century ago.

In a recent number of the *British Medical Journal*, Dr. Lauder Brunton, the eminent English physiologist and neurologist, in mentioning the fact that death from chloroform anesthesia rarely occurs in India, but is not infrequent in England, attributed the fact to the meat-eating habits of the English people, the natives of India being almost strictly vegetarian in diet, partly from force of circumstances, doubtless, but largely also, no doubt, as the result of their religious

belief, the larger proportion of the population being more or less strict adherents to the doctrines of Buddha, which strictly prohibit the use of flesh foods.

The theory advanced by Dr. Lauder Brunton in relation to death from chloroform poisoning, is that the patient does not die directly from the influence of chloroform upon the nerve centers, but that death is due to the influence of chloroform upon the kidneys, whereby the elimination of the ptomaines and leucomaines naturally produced within the body ceases, their destruction by the liver also ceasing, so that the system is suddenly overwhelmed by a great quantity of poison and succumbs to its influence, its power of resistance being lessened by the inhalation of the chloroform.

The affinity between alcohol and chloroform is very great. Both are anesthetic. Both chloroform and alcohol are simply different compounds of the same radical, and the results of our experiment certainly suggest the same thought as that expressed by Dr. Brunton. How absurd, then, is the administration of alcohol in conditions in which the highest degree of kidney activity is required for the elimination of toxic agents.

Another thought is suggested in this same connection, namely, the absurdity of injecting alcohol in a case of threatened death in chloroform anesthesia. Notwithstanding the extensive use of alcohol for this purpose during many years, can any person testify that he has seen a single life saved by it? The evident danger of establishing the alcohol habit by such a use of the drug doubtless influences most intelligent physicians sufficiently to lead them to consider it better for the patient to forego any possible benefit which he might receive from the use of alcohol, rather than become a confirmed inebriate. Nevertheless, there are still many practitioners who recommend to certain classes of patients the habitual use of beer, wine, or some other of the so-called light liquors, with the idea that by their use nutrition may be improved, and appetite, digestion, or assimilation in-

creased, or some good be accomplished in some way which no one has attempted to explain.

In a certain proportion of these chronic cases there is a tendency to tissue degeneration. Modern investigations have given good ground for the belief that these degenerations are the result of the influence of ptomaines, leucomaines, and other poisons produced within the body upon the tissues. It is well known that many of these toxic agents, even in very small quantity, give rise to degenerations of the kidney. It is this fact which explains the occurrence of nephritis in connection with diphtheria, scarlet fever, and other infectious maladies. Dana has called attention to the probable rôle played by ptomaines produced in the alimentary canal in the development of organic disease of the central nervous system.

It is thus apparent that the integrity of the renal functions is a matter of as great importance in chronic as in acute disease; hence any agent which diminishes the efficiency of these organs in ridding the system of poisons, either those normally and regularly produced, or those of an accidental or unusual character must be pernicious and dangerous in use.

THE MORPHINE HABIT IN CHINA. — According to the *London Lancet* the British consuls in China have repeatedly drawn attention to the increasing prevalence in several ports of the pernicious habit of injecting preparations of morphine, practiced by unqualified persons among the natives. This custom was originally introduced as a cure for opium smoking, but it is a case in which the remedy is worse than the disease. Those who sell morphine and make the injections procure a profit of from two hundred to four hundred per cent. The charge for making an injection is one cent. One of the victims of the practice said: "It is much cheaper than opium smoking, and I get the same satisfaction out of it. I know of ten Chinese doctors, each of whom treats fifty to one hundred men daily with this medicine."

THE CIGARETTE HABIT.*

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As a member of this and the Climatological Association, and as one who has smoked cigarettes for twenty-five years, I feel that I may speak with a certain amount of authority on this subject. "You, a throat doctor, and smoke cigarettes!" is a phrase that has finally wearied my ears, and, bubbling with mild wrath, I "rise to explain."

The pleasure and the penalty of this vice have never been rationally described, to my knowledge, other than by myself. This I did in a paper published in the *St. Louis Courier of Medicine*, some eight years ago, but so little notice was given it that what I now say will be practically new.

A word as to the tobacco habit in general. Mankind pursues various methods in using it. By chewing it, by dipping, by cigar or pipe, by snuffing, and by cigarettes. There is a reason why each one pursues a particular plan. Early associations have much to do with the selection of the plan; but, apart from this, each method has its own particular pleasure. The man who both chews and smokes derives a different kind of satisfaction from each method, and he would derive a still different kind did he take snuff. Cigarette smokers may be divided into those who inhale the smoke and those who do not. The latter class is a very small one, and the pleasure derived is the same, in a milder degree, as that of the cigar and pipe smoker, wherein the smoke chamber is the mouth. But all real devotees of the cigarette inhale. That is, with a quick respiratory act, the smoke is drawn through the larynx, into the trachea, and, as far as I have been able by different experiments to learn, into the first division of the bronchial tubes; not, as the public believes, into the lungs proper. These inspirations are

* Read before the American Laryngological Association, May, 1895.

nearly always superficial, and the fact alone that there is a tidal and residual air would teach that the smoke does not reach beyond the bronchial tubes. Inhalation explains the pleasure of cigarette smoking. If the cigarette smoker did not *feel* the smoke in his larynx and windpipe his pleasure would be gone. Every old cigarette inhaler will tell you this fact : that if he perchance smokes a brand of cigarette very much milder than that to which he has been accustomed, he will at once reject it, simply for the reason that larynx and trachea have been accustomed to a certain degree of irritation. The larynx and trachea have, so to speak, acquired a habit which rejects any unusual departure. For the same reason the inhaler rejects a brand of cigarettes much stronger than that to which he is accustomed ; nor will he inhale the smoke of a cigar, vastly more irritating than that of any cigarette. The inhaler may change his cigarette for one more pleasing to his sense of flavor, provided always, however, that it satisfies his accustomed degree of laryngeal and tracheal irritation.

The pleasure in cigarette smoking, therefore, as compared with other tobacco habits, may be said to be a pleasurable irritation of the laryngeal and tracheal sensory branches of the pneumogastric nerve.

Another question frequently hurled at me in all these years has been : "What satisfaction can you get out of those weak little things?" The question means nicotine satisfaction. I once more rise to explain.

One absorbs nicotine in accordance with the amount of absorbent surface in contact with the column of smoke. In ordinary smoking the mouth alone is the smoke chamber ; but when one inhales, one must add to the mouth the mucous membrane of the larynx, windpipe, and larger bronchi. There is hence, roughly speaking, three times as much surface for the absorption of nicotine ; and consequently, though a cigar contains vastly more nicotine, three-fourths of it is wasted as far as the question of nicotine intoxication is concerned, as compared with the cigarette. Moreover, the cigar-

ette smoker consumes two or three cigarettes while the cigar smoker consumes one cigar. The puny cigarette is therefore not so weak as it appears, and with this explanation begins to seem worthy of the newspaper term "deadly." Again, the cigar smoker as compared with the cigarette smoker, is an infrequent consumer. We know that, with most drugs, if we divide an ordinary dose into ten equal parts and give one part every ten minutes until the ten parts are taken, we get a more powerful effect than if the whole were given at one dose. So it is with cigarettes. The dose of nicotine is smaller, but the doses are much more frequently repeated. I can smoke one large, strong cigar in the ordinary manner without evidence of nicotine intoxication, but I cannot smoke three cigarettes inhaled, in succession, without nausea or vertigo or a rapid pulse.

The evil effects of cigarette smoking may be divided into the local and constitutional. As compared with other tobacco habits, if the cigarette were composed of other ingredients than tobacco and paper, we should as clinicians be prepared to look for different signs and symptoms. As far as the constitutional effects are concerned, I wish to state, as one who has carefully watched this question for fifteen years, that they are absolutely the same as that of tobacco used in any other form. The evil symptoms are always those of nicotine poisoning; not those of any other drug. The only chemist of high standing who, to my knowledge, has analyzed cigarettes is Dr. Ledoux, who last winter presented to the New York Society of Medical Jurisprudence a report of the analysis of several popular brands of cigarettes. The dealers from whom he obtained the samples expressed their hope to him that he might find all kinds of narcotics in them; that all the profit accrued to the Cigarette Trust. He found absolutely no evidence of any other drug but nicotine in the tobacco, and in the paper a harmless quantity of cellulose.

The W. C. T. U. has endeavored to crush the cigarette evil by asserting that opium, *cannabis indica*, and other narcotics were present in cigarettes. Vice cannot be cured by

misrepresentation. The only narcotic present is nicotine, and this is an evil or not according to a great many different circumstances. That chief circumstance when, without exception, it is always productive of great harm, is youth. Every medical man will admit, theoretically, that this should be a fact, and the few who, like myself, have made practical observations, will tell you that they never saw a child (I mean by this term those who have not reached puberty) who used tobacco habitually whose health was not in some manner badly impaired. What else could one expect the tender, growing, nervous organism to do but wilt under the steady daily influence of a drug like nicotine? In adolescence,—and practically this may be said to be from puberty until 18 in females and 21 in males,—the evil is not so great, but is still a great one. For though the nervous crisis of puberty has been passed, the nervous system is still rapidly developing. The nerves are more resistant than in childhood, but on the other hand, greater demands are correspondingly made upon them, either by the higher phases of education in one class, or by the actual daily struggle for existence in the other. That the use of tobacco is a serious handicap in adolescence is proved by the investigations of others than myself. At several of our great universities it has been found by exact and scientific investigation that the percentage of winners in intellectual and athletic contests is considerably higher in the total abstainers from tobacco. Sammy, the best-known newsboy of St. Louis, who, by his wit and energy at the age of fourteen, has accumulated quite a bank account, at my instigation made a series of unbiased observations concerning the newsboys of St. Louis. He found, other things being equal, that the selling capacity of the boy who used no tobacco was much greater than that of the boy who used tobacco, either by chewing or smoking.

It being admitted that the use of tobacco is a great evil, in the young, it follows as a self-evident proposition that any method which encourages its use must be more reprehensible than a method which discourages its use, and the cigarette

above all other methods presents this encouragement to the use of tobacco. In its mildness is concealed its very capacity for doing harm, for the reason that it *teaches the use of tobacco*. Every one knows the picture, by Brown, of a news-boy clinging to a lamp-post, limp, pallid, and vomiting, entitled, "His First Cigar." Had it been "His First Cigarette," the picture would not have been true to nature, for, unfortunately for our growing youth, the first cigarette does not induce this deathly nausea. Were this only the case, there would be but one cigarette smoker in youth where there is now one hundred. The boy at first uses only the mouth as a smoke chamber, and as a cigarette is so mild he absorbs but a minute quantity of nicotine, — insufficient for nausea. He gradually becomes able to consume more cigarettes, and quickly acquires nicotine tolerance. He is not allowed to pursue this method long. Invariably some other boy teaches him to inhale. At first it causes violent cough, and many would never repeat the attempt, but the taunts of the other boy are heard, and with the bravado of boyhood he perseveres. The larynx and windpipe soon tolerate the smoke, then demand it, and the boy is a full-fledged cigarette fiend.

The mildness of the cigarette explains also its fast-spreading use among young women, especially the leisure class of young ladies. As a rule they do not inhale, for, at the first attempt, the violent cough ensuing quenches ambition in this direction, and, unlike the youth or the boy, she is seldom encouraged to persevere. The fear of a tobacco-tainted breath also curbs her habit. In young ladies who smoke cigarettes very moderately, and who do not inhale, I have never seen evidences of nicotine poisoning. Their immoderate use, even without inhalation, may, of course, afford sufficient nicotine to disturb the health. Apart from this, however, I join hands with the ladies of the W. C. T. U., who in New England have established anti-cigarette leagues among young ladies reformed of the habit, because of the pernicious example these young ladies may set to the youth and childhood which surround them.

Personally I may add that when I am appealed to on the same ground I freely admit the force of the argument. I, however, do not pose as a reformer or advocate, — only as an expert.

The great evil of tobacco is its constitutional effect on the nervous system. The much lesser evil, local, namely, on the upper respiratory organs. My experience, like that of Morrell Mackenzie, is that, provided there be no other factor, the use of tobacco provokes little or no disturbance to these organs. That it may aggravate a throat or nose trouble, occasioned by other causes, I will admit; or that by its constitutional depressing effect it may aggravate such trouble, I will also admit; but, excluding all other causes, and looking at tobacco purely in respect of its local effect, I must deny that it ever causes, as ordinarily used, throat disease worthy of the name. There are a few exceptions, as there are to all laws in medicine. There are idiosyncracies in regard to the use of tobacco, both with reference to the throat and the nervous system. They are rare. Tobacco, in its ordinary use, at most, produces a slight hyperæmia, or insignificant catarrh, in the healthy throat. As used in cigarettes, that is by inhalation, the smoke comes in contact with the laryngeal, tracheal, and bronchial mucous membrane, and here produces in many the same trivial hyperæmia and secretion. This latter is pearly, and is ejected with a single gentle cough. I am unaware that I have this slight cough unless reminded by others. I have occasionally heard whistling rales in the bronchi of those who inhale very deeply and are immoderate smokers. Hyperæmia, not inflammation, acute or chronic, is the sole disturbance. The effects in the larynx of the ordinary healthy man seem almost nil. Mario, the great tenor, inhaled cigarette smoke between the acts. I experience no vocal difficulty in delivering lectures. Maxwell, the murderer of Preller, was confined in the St. Louis jail for two years, during which time he inhaled an average of forty cigarettes a day. I secured the larynx and trachea of Maxwell, but could discover no evidence of morbid change, other

than a fracture of the hyoid bone, caused by the hangman's rope.

Twenty years ago, in this country, this habit existed, but was unusual; probably because each consumer was compelled to make his own cigarettes. But since the American manufacturer, with his advertising genius, has scattered them over this country, ready-made and very cheap, the habit has grown enormously. Nervous diseases and insanity are rapidly increasing in the American people, we are assured by our own neurologists. Our nation was already noted as furnishing proportionately more neurasthenics than any other. If to such an inheritance American youth then adds the nerve-destroying nicotine habit, which the cigarette so materially assists in spreading, there is grave reason to hope that the cry of reform may be echoed and re-echoed throughout our glorious country. There is no such instructor of the people as the press, and I trust that our newspapers will publish broadcast such information as this, and kindred essays may give them on what is fast becoming a national vice in American youth, — the cigarette habit.

There is in a large number of inebriates an underlying strata of mental impairment and defect of organization which prevents them acting along lines of rational self-control. They have feeble powers of resistance to pain and suffering, and act on any suggestion, both within or from without, for relief. Such persons suffer from physical pain and exhaustion, and alcohol or any narcotic is a grateful exemption.

In estimating the crime of an inebriate, his life history, with heredity, and all the circumstances and conditions which entered into the act, are necessary to form some conception of the responsibility and power to have done otherwise.

DIAGNOSING OPIUM HABITUÉS BY SNAP-SHOT.*

BY W. W. POTTER, M.D., SPOKANE, WASH.

We are frequently asked, "Is not so-and-so addicted to opium?" and our invariable answer is, "I cannot tell." Sometimes the answer means that "I really do not know," sometimes that "I do not know enough to be positive," but it always means that "I do not tell what I know to disinterested parties."

Opium addiction has become so common of late years that the above question has become a frequent one to the physician, and a hasty diagnosis has often been a false one, from lack of sufficient data.

One difficulty of diagnosis is, that misconception as to prominent symptoms exists. Many a one, reading the usual descriptions of a confirmed opium-taker, as given in the text-books, is led to believe that all such habitués can be diagnosed by "sallowiness," "emaciation," "premature grayness and aged appearance," "a small pupil," and "nervous action;" but this is erroneous; the above symptoms are not "characteristics," and are frequently wanting altogether in very pronounced cases. The "sallowiness" is more frequently only pallor, and tells us only of a greater or less degree of anæmia. There is nothing "pathognomonic" in this symptom. I have noted its absence recently in two well-marked chronic cases.

"Emaciation" may be the rule, but it has many exceptions. I recall five cases, four male and one female, all long-time habitués, and not one of them weighing less than 160 pounds. The female recently died of an intercurrent affection; was using three grains of morphia daily and weighed over 200 pounds. One man has used opium in several forms

* Read before the Washington State Medical Society, May, 1895.

and various ways for twelve years (cocaine has also been added during the past few months). He has taken as much as thirty grains of morphia daily, and is now using fifteen by syringe, but to my certain knowledge has not materially changed in weight during the past two years. He is still well nourished, though his arms and thighs are thickly tattooed by the marks of the needle, and cicatrices of superficial abscesses. The fact is that the world is full of robust appearing opium slaves, who ordinarily escape attention.

As to "growing gray and prematurely aged," I have never noted the former, and the latter only in children. On the contrary, opium, by its retarding action of all the organs, has sometimes seemed to act as a preservative of the body, and that, too, in cases of surprisingly large dosage.

The "small pupil," a usual symptoms of opium, is sometimes unaccountably absent in the habitué. I have notes of one case using fifteen grains of morphia daily hypodermatically, whose pupil was nearly normal at all times. His addiction had lasted eight years, and I am positive no other drug was used. Another case of smaller dosage and shorter term presented this same exception, which can only be explained on the grounds of idiosyncrasy or habituation. And when it is remembered that the pupils of an habitué, when not under the direct act of opium, are dilated, and sometimes unequally, then the appearance of a small pupil as a prominent diagnostic aid loses its weight.

"Nervousness" is never seen when the habitué has his accustomed dose; it is the want of the opium that causes this symptom, and many others. Its severity will depend much upon the physique and temperament of the individual, and the physician will rarely have the opportunity of observing this if the habitué can help himself.

All these are the symptoms usually sought for by the hasty diagnostician, and in my experience are the ones least to be relied upon. They are the only ones on which a "snap-shot" or hurried diagnosis can be made. When found they may indicate some wasting disease or neurasthe-

nia as well as opium habituation. Nor will the absence of these symptoms settle the question of opium using in the negative. A physician recently testified in court that "he was able to tell an opium user across the street." He "had met the accused only casually" and declared "there was not a symptom of opium about him." But his testimony was false as to fact, for three reputable physicians who had carefully observed the case, gave opposite testimony. Snap-shot diagnoses resulting in an opinion that brands a man as an habitué have too often been made, and great injustice done.

But there are other difficulties than those first mentioned in the way of correct diagnosis. The drug-user himself hides all the symptoms possible of his drug using. It is even difficult to find where he purchases his drug, and when or how he takes it, and he resorts to many tricks that are blinding to the uninitiated.

Opium contracts the pupil; he therefore resorts to some mydriatic like atropia, or preferably, on account of its stimulating effect, cocaine. By experience he learns to gauge his dosage so as to hold the pupil at a certain size. But this ruse can be detected easily; the pupil will not respond to the varying light.

Alcohol in some form is sometimes combined with opium taking, not for the sake of the alcohol, but that its odor may lead the enquirer astray, and blind him as to the real stimulant used. The odium of being "a drinker" is always preferable to the detested and detestable term "fiend."

Less frequently we find the opium habitué combining chloral or some other hypnotic, and occasionally one will be found where it will be difficult to tell what intoxicating drug he does not use in combination. It is quite safe to assume that if the habitué be a physician, and the habit one of long standing, that many substitutes for opium will be tested alone or in combination, and he is likely to run the gamut of chloroform, ether, conium, cocaine, hyosciamus, cannibis indica, and proprietary remedies like bromidia, chlorodyne,

chloranodyne, and the like, thus obscuring his opium by complexing symptoms, and his ever-ready lying explanations. I know of one who successfully hid his opium habit for two years by just such practices.

The most surprising deceptions will sometimes be resorted to, particularly upon the laity. I am familiar with a case where a man accused of using morphine by the syringe made a great show of courting a full and free investigation, and stripped himself to the waist for the purpose of examination; the investigating committee reported that "his skin was as smooth as a new-born babe's." In this case the site of injection was unusual, it being the posterior aspect of the upper arm, or triceps region. It is easy to conceive how he could make such a display of himself, and with outstretched arms and rotating motion still hide the needle marks from discovery by superficial examination.

Another surprise sometimes awaits the doctor who attends opium habitués. He may be rewarded not only with ingratitude, but calumny as well from those he has attended, while some whom he has never seen will proclaim him as the man who cured or failed to cure them. But such is the lot of a physician, and it will probably never change. We think it sufficient to here add in paraphrase that —

"For ways that are dark,
And for tricks that are vain,
The modern drug-user is peculiar,
Which the same, we've tried to explain."

But there are some symptoms of opium which the habitué cannot hide. It will congest the conjunctiva and suffuse the eyes. The vision will have a peculiar stare, like one in constant day-dream. He looks not at you, but beyond and through you. His voice will be husky under a full dose. His skin usually itching. He will complain of disturbed digestion. His appetite, to-day ravenous, will be entirely wanting to-morrow; to-day he complains of diarrhoea, to-morrow it is constipation; he is all activity to-day, to-morrow overcome by extreme lassitude; his sleep is disturbed

and never restful. He "stretches out the hours of recumbence to their last possible extent — with a secret wish to have lain on still." In older cases night sweats, with rapidly alternating hot and cold flashes over the spine, tremors, neuralgias, nervous excitability and restlessness, all these 'changing in a very short time to serene composure, somnolence, or sleep. These represent in brief outline two distinct states, one of a satisfying dose, the other the period of abstinence when the whole system is loudly demanding its accustomed opium.

The evidence of these two states must be established, and other causes than opium removed by exclusion. Then, and then only, are we justified in our diagnosis of opium addiction, and, in view of our great liability to err, I here enter a vigorous protest against "snap-shot" opinions, knowing full well how they hurt, and the difficulties of removing such a stigma. — *Medical Sentinel.*

It is very evident that at no distant day some change must be made in the law governing the sale of intoxicating drinks. In the preparation of that law, we respectfully urge upon our law-makers and law-enforcers a careful consideration of the law adopted in Denmark, and rigidly enforced by the police. The police, when they find a drunken man in the streets, summon a cab, place him inside, and drive to a police station, where he is detained until he is sober. Then he is driven home, the police never leaving him till he is safe with his family. The cabman then makes his charge, the police surgeon his, the constables theirs, and this bill is presented to the proprietor of the establishment where the culprit took his last and overpowering glass. This system works well in Copenhagen. Why would it not be equally effectually in New York? It would not only be much more easily enforced than the present excise law, but also be productive of much more good.

ALCOHOLISM, WITH SUGGESTIONS AS TO
TREATMENT — STATISTICS FOR BUFFALO.*

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Dipsomania.*

From the police reports we find from 1890 to 1894, inclusive, that there were 33,909 arrests for drunkenness in Buffalo. Of this number of arrests 29,895 were men, 4,014 were women, or an average for each month of 498 men and 66 women. During the same period of five years there were 16,213 arrests for disorderly conduct. Of this number 13,480 were men, 2,733 were women, or an average for each month of 224 men and 45 women. Of those classed under this head, it is safe to say that the majority were drunk as well as disorderly. During the same period 490 were classed under the head of dipsomaniacs and sent to the jail to sober up. The Erie county penitentiary reports for the five years show that 16,949 men were there for drunkenness and 3,080 women were sent to the same place. While more than one-half of the arrests for drunkenness were sent to the penitentiary, about one-third of those arrested for disorderly conduct were also sent to the penitentiary. One man has a history of being sent to the penitentiary for drunkenness fourteen times in one year and another thirteen times. Of those sent to the jail for dipsomania nineteen were in twice and nine three times.

During this period of five years, reports from the coroner's office show that 79 died from alcoholism, and out of the 221 suicides 73 were known to have been hard drinkers. According to French authorities, the preponderate cause of suicide is alcoholism. The reports quoted show that nearly half of the suicides in the city are due, directly or indirectly,

* Read before the Buffalo Academy of Medicine.

to alcoholism; and if a correct history of these cases could always be obtained there is no doubt that the majority of suicides would be found of that class.

Comparing the small number treated at hospitals, where drink was the cause of their confinement, with those that were retained for punishment, we find that only 264 men and 43 women were in the Buffalo General Hospital during those five years, and that 169 men and 39 women were at the Buffalo State Hospital or asylum. Probably an equal number were treated at the Sisters of Charity Hospital. However, the reports show a very small number receiving treatment for a disease which held these habitués as slaves to appetite.

Dealing with it as a crime against law and order, severe fines and heavy punishments have been applied in all ages. But a very small percentage have been benefited of the large number of those thus treated. Treating it as a disease, the last decade has revolutionized the theories as to the cause, also care, of such maladies, and the progress has been as great in this direction as that which has marked the treatment of many other diseases. Experience teaches us that it is a disease which can be successfully treated, the time and course of treatment depending upon the stage and character of the disease. The treatment of this class of patients has varied from the heroic method of blood-letting in olden times to the empiric method of hypnotic suggestion of the present day.

Like other diseases, dipsomania or chronic alcoholism may be inherited or acquired. In either case the treatment is the same, although the results may be different. The more chronic the case, the more persistent should be the treatment. Habit leads to disease just as exposure leads to rheumatism. The strong-nerved man finds appetite often more than he can overcome. Therefore, we should expect that the one who has inherited a nervous weakness should frequently find accustomed appetites uncontrollable.

Heredity predisposes to dipsomania, the same as it pre-

disposes to consumption. Both are developed under favorable surroundings. Asthma is a neurotic disease, inherited, but there is a climate for every asthmatic. Also, there is a climate for every hard drinker (temperate climate).

How They are Treated at Present.—Medically, the patient is confined to his room, either because he is unable to go out of his own accord or because he is constrained by friends. The physician prescribes medicines to overcome the alarming symptoms, such as uneasiness and sleeplessness, together with a steady withdrawal of stimulants. As soon as the patient talks rationally and walks steadily the physician discharges his patient or the patient discharges his physician. This course of treatment lasts from three days to one week, and is the sum of the entire medical attention the patient receives when he has been suffering from a chronic disease for several years. We need not be surprised that relapses occur very shortly and frequently. No other disease, so grave in character, so dangerous to the community and fatal to the patient, is to-day treated so carelessly and unscientifically.

Legally, the misdemeanant is arrested, spends a night in a cell at the station-house and is fined \$5.00 to \$10.00 in the morning, or an equal number of days at the workhouse. If he be well connected, socially and financially, he may be detained in the jail until his physical and mental condition is sufficiently improved to warrant the authorities in discharging him on the promise that it will be "the last time." When the patient is given an opportunity to go out into the world to do better, it is only a short time ere he finds himself again overcome by his tempter. In those cases where drunkenness is a vice, this treatment is insufficient; and in those where it is a disease, it is cruel and barbarous.

Why They Should be Differently Treated.—Because a careful physical examination reveals lessened nervous energy, weakened cerebral functions, interference with co-ordination and reflex action, altered secretions and diminished excretions. And further, because a mental examination reveals

hallucinations (painful or pleasant), delusions, melancholia, suicidal tendencies, and the like, and shows weakened will power, temporary loss of memory, the finer sensibilities numbed, perceptions and emotions dulled, truth, decency, duty, honor, and felicity doubtful or altogether lost. In every case there is evidence of the paralyzing effect of alcohol upon the inhibiting power of the brain, which is one of its highest faculties; and herein the greatest damage is wrought and the will undermined.

Again, because the pathology of this disease, in advanced stages, shows degeneration of the nerve tissue, hyperemia of the meninges of the brain, diffused interstitial sclerosis of the cord, with cirrhotic changes of the internal organs.

Charpentier, out of 135 victims of general paresis, found 83 cases were confirmed alcoholics. He adds alcohol to syphilis and heredity and calls them the triad of general paresis. As in severe forms of indigestion, with altered secretion and functional disturbances, when the *post mortem* shows no pathological changes, so in severe and dangerous forms of alcoholism, with perverted faculties and impulses, the brain itself may reveal no structural changes. Sonderegger considers drunkenness the effect and not the cause of the disease; that it is an irregular development and distribution of the cells through which the will and conscience act.

There are premonitory symptoms in periodic drinkers, such as nervousness, irritable disposition, forgetfulness, deep meditation, poor appetite, and sleeplessness. Baker (*Boston Medical and Surgical Journal*) reports a case of hereditary dipsomania, in which the patient, during his craving for alcohol, though prevented from getting it, would become sleepless, lose his appetite, appear silly, incoherent, staggering in gait, with some delusions of persecution manifested. As a patient expressed it to me the other day: "I am in another world during the drinking period."

How They Should be Treated.—From a criminal standpoint, the penalties should be multiplied by ten. It should be 100 days' imprisonment where it is now only ten days.

This would give the patient an idea of the gravity of the offense and will also give Nature time in which to gain strength and fortify herself against future temptations and indulgence. While thus restrained, the patient should be kept at light work and receive medical aid for at least four weeks, according to the most advanced and successful methods of the present day.

The medical treatment, where it is now continued for about five days on the average, is about one-tenth the time required to materially benefit these cases. The indications to be met generally are largely a disturbance of the nervous system, which manifest themselves in an irritable disposition, sleeplessness, fits of depression, and, later, excitability, with all the phenomena of mania-a-potu. The digestive processes are sluggish and weak in character, the excretions are deficient, and there is a general loss of muscular tone.

The excitable stages are best controlled by chloral and bromides; or, when there is much delirium with a strong pulse, hypodermic injections of hydrobromate of hyoscine 1-100th to 1-150th of a grain, to be repeated in six hours, or smaller doses every four hours. Ergotin, added in small doses to the above, will overcome the unpleasant effects of hyoscine with a good result on the cerebral congestion. Stimulants should be rapidly withdrawn, and when given should be administered in milk and other foods, but never should be given clear or "straight." If there is much nausea, it can be controlled by small doses of calomel and bismuth, frequently repeated, with nourishment given a little at a time and often. As soon as the patient is able to take nourishment, it should be fluid in character and large in quantity, highly seasoned. If the bowels are constipated, they should be opened by injections of water and glycerine, when the patient is not able to take alkaline aperients through the stomach in the ordinary manner. An infusion of digitalis, tablespoonful doses, with ten grains of citrate of potash every four hours, will increase the urinary excretions when they are diminished. Hypodermics of the nitrate or

sulphate of strychnine, with a little digitalin, are the best to overcome heart weakness and often relieves the delirium. Mulford's tablets for dipsomania for hypodermic use will be found very serviceable—namely, gold and sodium chloride, 1-24 gr.; strychnine nitrate, 1-60 gr.; nitroglycerin, 1-300 gr.; atropine sulph., 1-200 gr.; digitalin, 1-60 gr.; sodium chloride, $\frac{1}{4}$ gr.

Cold to the head overcomes delirium when due to congestion or active hyperemia of the meninges.

When the acute symptoms have subsided, a three or four weeks' course of curative treatment should begin. A tonic, consisting of nux vomica, hydrastis, capsicum, and an infusion of gentian, should be given four times a day and in full doses. Also hypodermics of the chloride of gold in solution—one-tenth of a grain to ten minims of distilled water—should be given three or four times a day.

Tablets of the above formula are good for the first week or ten days, followed by the gold solution. The platinum needle will not corrode by the gold solution and should be used for this reason. The infusion of gentian is used because it contains less alcohol than the tincture.

Because the chloride of gold meets so many indications in the treatment of dipsomania, there is no more reason to call it a "gold cure for dipsomania" than there is to call it a gold cure for consumption, where it has been used with a certain degree of success; or a "gold cure" for rheumatism with deformed joints, where it has been found valuable; or a "gold cure" for paralysis of the insane, where it is one of the most efficacious remedies.

The chloride of gold I consider one of the chief therapeutic agents in the treatment of chronic alcoholism. It has been used in cases of melancholia, hysteria, chorea, and especially nervous troubles due to syphilis. In its physiological action it seems to be a tonic for the brain and spinal cord—an alterative like mercury; it stimulates nutrition and digestion, increases secretions and excretions, and is an aphrodisiac. Its action in this respect is like that of strychnine and phosphorus.

The belief that the impotency for a time following the treatment is due to the chloride of gold, is a delusion on the part of the patient.

Strychnine tones up the nerve centers and the walls of arteries are able to contract to the normal caliber, while muscular fibres return to their healthful response.

If the alcoholic should require both punishment and medicine, as they usually do, the hypodermic method, four times a day, meets the indication beautifully. If the arms swell from the effects of the hypodermics, Goulard's extract will overcome the difficulty.

In some cases, craving for drink can only be removed by treating physical ailments. Lawson Tait reports cases of cure following the removal of the uterine appendages in women. Indigestion is to be treated, neuralgia and nervous exhaustion to be remedied, irregular and weak heart action to be overcome, environment and habits to be changed, syphilis and kidney trouble to receive attention. Irregular hours at meals and for sleep, the futile attempt to drink moderately, old associations in drinking, the intention to drink only beer and cider, all predispose to alcoholic excess in those already habituated to excessive drinking.

Some believe in inebriate asylums under the control of the state. Our insane asylums are just as good, and this class of patients go as willingly to the latter as to the former. The difficulty at present with our hospitals is their having no power to hold these patients as long as is required for successful treatment. Every city of the size of Buffalo, showing the amount of alcoholism that Buffalo does, is in need of a hospital for inebriates, endowed with power to retain patients until dismissed as cured. Our present overcrowded penitentiary would be greatly relieved of some of its very heavy burdens, the community better protected, and the reformation and cure of the victim would be more pronounced and permanent. I agree with Dr. T. D. Crothers of Hartford that public sentiment should not permit one to become an inebriate, or tolerate him after that stage, unless under legal guardianship and restriction, until he recovers.

Our morning justices should impose larger fines for drunkenness, which means longer terms of confinement. Medical treatment should be enforced for not less than four weeks while serving time. Our habitual drinkers who do not voluntarily take treatment should be committed to the asylum until a more suitable institution can be established. The state should arrange for the proper treatment of these cases when in penal institutions. A law is required to meet this end. Every municipality should have this done.

Drunkenness, with beginners, is of so great moment, because of its demoralizing effect upon youth, that, to be a preventive, fines must be large in order to be commensurate with the offense. While there may be a question about the responsibility of acts committed while under the influence of liquor, there is no doubt about the great responsibility of such persons getting drunk as a beginner.

A portion of mankind have proven in the past that they could not drink moderately, and ought not, therefore, to have taken liquor at all, as the first drinks (socially, it may be,) developed the uncontrollable desire which previous to that time had been latent and ought never to have been cultivated.

The moderate drinkers of to-day are going to furnish us with the dipsomaniacs to-morrow.

Those who have inherited a predisposition to consumption would not hazard their lives by continually nursing and associating with the consumptive. This applies to all those who have inherited irritable, nervous systems and thereby are predisposed to drink.

It is almost impossible to carry out this system of treatment in private practice. It can be more thoroughly done and the psychological effect upon the patient far more beneficial when sent to an institution. The Lexington Heights Hospital of this city has arranged particularly for these cases, and when treated according to this method the results are very satisfactory. Those who manifest a desire to take treatment and admit that they are unable themselves to dis-

continue the use of liquor, give the highest percentage of cures. Those who receive the least benefit remind one, when asked why they do not take treatment, of Rogers's lines :

“Go! you may call it madness, folly,
You shall not chase my grief away;
There's such a joy in melancholy
I would not, if I could, be gay.”

The report of two prominent French medical authorities, Brouardel and Bouchet, to the French hygienic government committee, declare that the future belongs to abstemious nations ; that it is not only a social danger everywhere, but that the body and mind of posterity are weakened. My object in presenting this paper is not to stir your emotions and entertain your higher sensibilities for the present, but to appeal to your intellectual, scientific, and executive powers for the better treatment and control, in the future, of these victims of habit and disease.

Dr. J. B. Mattison of Brooklyn, N. Y., read four papers on opium in October, before the New York Academy of Medicine. One on “Morphinism in the Young.” The second paper on “A tale of the Poppy, and its Moral.” The third paper on “Morphinism in old cases — three score and ten — with recovery.” The fourth, “Morphinism in Woman.” These papers were read before large audiences, and created much interest.

Maurel says that cocaine kills by: 1. Dilating the small vessels. 2. Paralyzing the leucocytes ; strong doses taken by the stomach act in this way. The toxic effect is proportional to the number of leucocytes paralyzed. Small doses, hypodermically, or in the veins, may act by paralyzing some cells which then become emboli. Large doses may be injected into the arteries without killing. — *Omaha Clinic.*

**A CASE ILLUSTRATING THE IMPORTANCE OF
AN ACCURATE DIAGNOSIS IN INEBRIETY
AND MENTAL DISEASES.***

BY DANIEL H. ARTHUR, M.D.,

Assistant Physician State Hospital for Insane, Middletown, N. Y.

W. S., age 48, married, two children, native of the U. S., occupation hotel-keeper. Habits said to be intemperate. No history of insanity. Remote cause — predisposition.

Exciting cause said to be intemperance, over work, and worry.

T. 99½. P. 90. Tongue furred and dry, and very tremulous. Pupils contracted irregularly, non-responsive. Speech, hesitating, thick, unable to give any account of himself. Heart's action weak. Face dark, mottled. Paralysis of extremities.

Family history states that the condition of change was first noticed a year and a half before his admission to the hospital. Had alternate attacks of depression, and mild excitement: at times slight attacks of vertigo and loss of consciousness. In a few months he was unable to attend to his ordinary business properly. Unable to make change; would demand the payment of a bill twice; became dull and easily confused.

It was said that about six months before his admission to an asylum for the insane, that he commenced to drink to excess, which (if so, although not authentic), was undoubtedly a result of the course of the disease. His symptoms progressed rapidly the last few months before admission to a hospital. His gait became very ataxic. Memory almost gone; inco-ordinate speech; hands and the fibular muscles of face became very tremulous; unable to control them.

* Read before the Medico-Legal Society, February meeting, 1895.

He sat about the house in a stupor, too weak, physically, to move about much, and too demented to take notice of his surroundings. He was admitted to the hospital December 9, 1891, unable to give an account of himself, but with the preceding history and symptoms.

He died a few days later from simple exhaustion following — general paresis.

The patient was a member of a prominent beneficiary association, the benefit from which, two thousand dollars, was to go to his wife in case of death, providing the deceased had lived strictly according to the by-laws of the order. A prominent by-law of the order as a requisite to membership was temperance, as to the use of alcoholic stimulants, and also a continuance of such habits while a member of the association.

Temperance, as mentioned here, is not to be interpreted as absolute teetotalism, but a freedom from excess in the use of stimulants. Of course a man's excessive use of alcohol, at the time of application to an order for admission, would be known, and his name for membership rejected accordingly; but having been admitted to the order, should he at any time become so addicted to the use of alcohol, to the extent that would be called excess, as might precipitate a diseased condition, and in consequence shorten life, his family would forfeit the right to any benefit in the event of his death — the insurance would also be forfeited in case of the non-payment of dues. His wife ceased the payment of dues to the order some time previous to his commitment, as it was refused by an officer of the lodge with the remark that it would be money thrown away, as his family could not benefit in any manner at his death on account of his acquired intemperate habits. The wife insisted on paying the dues with the statement that she knew him not to be intemperate; that she was near him all the day and night, and had never seen him drink to excess. She stated that her husband was a sick man. The dues were, however, refused.

On the death of the patient the beneficiaries made a de-

mand on the association for the amount of the insurance, two thousand dollars, which was refused on the ground of a violation of the insurance contract. In the suit that was brought by the relatives of the deceased for the amount of the benefit, the defense brought forward about twenty witnesses, including the officers of the lodge, of the town, and could undoubtedly have brought half the village to testify that they had seen deceased staggering about the streets of the village almost daily ; that they had seen him as often sitting about the hotel in a drunken stupor ; that his general appearance was that of intoxication, and that it was recognized as a fact by most of the inhabitants of the village that W. S. had been intoxicated almost continuously for at least three months previous to his admission to an asylum. There was no special time during the day mentioned but he was, from the evidence given, as intoxicated in the early morning as in the evening. There was no sobering-up process observed, but a continuous condition of intoxication. Although all these witnesses were positive of the deceased's condition during this time, but one, and he a brother member of the lodge, had ever seen him drink. This member testified that he had drank liquor with him but had never seen him drink to excess ; yet he insisted he had often seen him in a condition which he believed to be the result of excessive drinking.

All these witnesses were frequenters of the hotel at different times during the day and night, of which deceased was proprietor. His wife, clerk, bar tender, and other attaches of the hotel, who were more closely associated with him, testified just as positively that his condition was not the result of excessive alcoholic indulgence, knowing it could not be so without their positive knowledge. His family recognized a condition of progressive mental and physical deterioration, yet delayed sending him to a hospital until there was almost a complete paralysis. He was committed by the village physicians who diagnosed the case, and the cause that of alcoholism. These physicians (who diagnosed this case) testified that they were unacquainted in any degree with the different

forms of mental diseases, and in consequence were unable to differentiate between general paresis in the last stages and chronic alcoholism, but had made the diagnosis from the general appearance of the patient and village gossip. The interest in this case centers in the differential diagnosis of chronic alcoholism and general paresis, a proper diagnosis of which was the means of preventing the perpetration of a grave injustice upon the widow of the deceased. Chronic alcoholism, in many cases, recall more and more the general appearance of paralytic dementia (the last stages of general paresis) — “the brutishness of the chronic drinker; the soft, puffy, smooth appearance of the whole face; the apparent ruin of all his faculties; his incessant stammering, tremor, and the motor derangement he presents causes him to resemble clinically the general paralytic,” and the average general practitioner is very liable to error in his diagnosis.

The case in question had many symptoms in common with alcoholism, to such an extent, that a very careful analysis of the patient's mental and physical state was imperative in order to determine the real condition. A characteristic physical symptom common in both diseases is muscular weakness and muscular twitchings. Here, however, you find in chronic alcoholism the fibrillary muscular twitchings general all over the body; while in general paresis this is more limited, affecting mainly the tongue, orbicular muscles of the face, and the muscles of the hand. Rarely do you find in alcoholism the pupils of the eye contracted, while in general paresis this is a common symptom, and very often the pupils are contracted unequally and unresponsive; the speech disorder in chronic alcoholism is usually less than in paresis; in paresis the disorder increases as the disease progresses, while in chronic alcoholism it decreases and may entirely disappear under the influence of abstinence and treatment.

In alcoholism the embarrassed speech is dependent somewhat upon fear, with a constant apprehensive look; also upon the tremulousness of muscles of the tongue and face; while in paresis it is due to feebleness of the mind, and paralysis of

muscles. We have again, in chronic alcoholism, a diminution of appetite with eructations; vomiting of mucus in mornings, and often a complete paralysis of stomach and consequent inability to retain anything.

While in general paresis, the appetite is augmented and the patient eats ravenously.

The hesitating, ataxic gait is a common symptom in both conditions; however, in alcoholism it is a recognized condition by the patient himself; he is ashamed of it, and tries to rectify it, while in paresis there is a quiet contentment with himself in all respects.

These were a few of the prominent physical symptoms observed in *this* case of general paresis and their differentiation from chronic alcoholism.

Among the mental symptoms of chronic alcoholism we have headaches, active hallucinations and illusions affecting all the senses; delirious conceptions depending on these hallucinations and illusions. We have, very often, great depression, with tendency to suicide, delusions of persecution, etc.; with all these symptoms, there is a consciousness of his condition. With the paralytic dement of this article there was never any pain, no hallucinations or illusions; the paralytic is seldom ever suicidal, there is an enfeeblement of the understanding with delusions of grandeur, wealth, and power. Here it took the form of strength and ability, the patient believing himself perfectly well and competent. There are many cases of general paresis with simply a progressive mental enfeeblement and no delusions whatever, but all the physical symptoms prevalent.

A characteristic symptom of general paresis (very marked in this case) is the utter indifference of the patient towards his family, and his temporary but apparently unconscious fits of emotion, as anger and crying; these are also symptoms of chronic alcoholism, but differ; the alcohol patient may become affected by the pleadings and reproaches of a mother or daughter, give way to grief, appreciating his condition, and make promises of reform; while the enfeebled mind of

general paresis is thoroughly content with himself and unappreciative of interest taken in him by even friends and relatives. The emotions of the chronic alcoholic are due to depression, the result of a periodic acute appreciation of his condition; while those of general paresis, alternate sobs and laughter, are utterly without order or consistency. The symptoms of general paresis which we have recorded here were prominent in this case, and I have endeavored to show where they differ from chronic alcoholism without going into minute detail. These considerations may aid in forming a diagnosis, yet by becoming acquainted with the antecedent habits and history of the case, extending through a considerable period of time, it will help very materially in clearing up the case. The initial history of the disorder here dates back a year and a half, when no accusation was made of intemperance: there was slight dementia with failure of memory, slight attacks of vertigo, and occasionally periods of unconsciousness for a short time. The court introduced expert testimony in the case and the jury allowed the amount of the benefit to the widow, with interest from the time of death.

Is there an inebriate neurosis? If the doubters will study the inebriates who appear in the police courts and jails, and the inmates of asylums, the answer will be clear and unmistakable. The defective degenerates both in appearance and history furnish abundant facts, far more impressive, than any theories however well presented.

NERVOUS PROSTRATION. — My son, aged 12, had been growing nervous over the shock of his brother's death, and seemed to derive no benefit from any remedies used in his case. Had him to the seashore, change of surroundings and everything that could be done for his benefit, he still grew thinner and worse all the time. I put him on *Celerina*, and had marked benefit before the first bottle was used, and he has almost entirely gotten over it with the help of another bottle I got for him. I consider it a very nice and efficient nervine, just the thing for the children and nervous and delicate persons, where there is great prostration. I shall use it freely. — N. P. FRASSONI, M.D., *Moosic, Pa.*

ALCOHOL AND CHASTITY.*

BY DR. M. L. HOLBROOK,
Editor of the Journal of Hygiene.

In presenting what I have to say on the subject of this paper I shall be very brief and will not try to go over all the ground that might be traversed. Any one who is interested in the subject can easily do this. The Bible and many historical and temperance works, and even the common observation of most persons, tell the story of shame caused by strong drink. What I desire to say will come under another head than that this subject is usually discussed.

It is now generally admitted by scientists that man has come to his present estate by a process called evolution, that is, the development from lower forms to higher ones, or from simple forms to more complex ones. In this process of evolution there has been added new functions and new powers to man as they were required by the necessities of his life and his environment. And it is one of the fundamental laws of being that newly acquired traits are not so fixed and well established in the nature of men as the older or first acquired ones.

It is believed by our psychologists (a science, by the way, we ought to study more) that one of the last acquirements of man is the power of *self-control*.

Let us stop a moment to inquire what self-control is and how useful it has been and can be to us. If we study animals and low organisms we see the power to control their own acts is wanting or nearly so. Let any one observe for an hour under the microscope living micro-organisms and what will he behold? Endless movement, perfectly meaningless to him. They rush along the line of least resistance without the slightest control of their acts.

*Read before the National Purity Congress, Baltimore, October 16, 1895.

With insects it is the same. Does the silk worm say, Now I will make a cocoon and undergo my transformations in it, or I will not make one, but go and enjoy myself in some other way? Nothing of the sort; it makes it under the law of its instinct without any volition of its own. When the time comes *it must* spin it whether it will or no. It cannot say, I will not, but will do something else.

Do the bees or the butterflies plan out and control their movements as they go from flower to flower? Do they stop to reflect before they visit a blossom, or say we will gather no more honey to-day? No. They too are guided by an instinct. See them fly through the air, now this way, now that. They have practically no power of constructing their own lines, or directing their own ways.

When it comes to higher animals, the horse, the dog, the bull, and cow, there may be slight intimation of self-mastery, but they are slight indeed.

With man, however, the case is different. He has had a story or several of them added to his intellect. It takes in a wider range, a larger view. *Man has developed the power of self-control. He takes charge of his own life* and his own conduct. He is able to say I will do this, for it is wise; I will not do that, for it is unwise. Even though his *desires* prompt him to do one thing, he can by this inhibitory power given by self-control, hold himself back and do something far different, something actually disagreeable, painful. He can even plan out a course of action which will continue for years and hold himself up to it during a long life. With most successful men in whatever field, this is the case. We can hardly estimate how very valuable it has been for man to do this. We get some notion of the use of this new power by comparing a man whose whole life is aimed at the accomplishment of some noble work and the man who has no aim, but is carried about daily by the whims and caprices of that day. Can any animal take its life under control as man can? No, not even the highest ape, and hardly the lowest man.

I said in the beginning, this power of self-control has

been one of the last acquired by man and that it has not been so firmly fixed in his nature as some other of his faculties, as that of the desire for food, for air, for procreation, etc. Many persons have it in a low degree, and, such by just so much come short of having the full stature of men. They yield to their likes and dislikes, their whims and caprices, their passions and temptations, even when their best judgment tells them that it is not wise to do so. The inebriate is a good illustration. He does not control his appetite for drink, often cannot. The glutton is another. Our insane asylums are full of men and women who have lost all control over their own minds and they think and act wildly, disorderly.

The sexual impulses are less under control than they should be, often even in those who otherwise live well ordered lives. These impulses are very important and will be so long as reproduction of the race must go on. The greatest good as well as the greatest evil results from them. There is no use in denying this. But as the evolution of man goes on, these impulses should and must more and more come under self-control. If social purity is ever to make any headway this new power in man's character, new comparatively only, must have a far larger influence in his sexual life, without perhaps knowing it from this point of view, this is what the organization convened here is for, to induce men and women to place the sexual nature under the guidance of reason, of conscience, of hygiene.

Now if I am right in what I have said, anything that makes it harder, or impossible to keep a mastery over one's own nature is a potent evil, and it is here that the relation of what I have said to the use of alcohol comes in. Do alcoholic drinks increase or diminish man's self-control over any part of his nature? If they increase it then they are in this respect a positive good. If any food or drink could be discovered which would make man more his own master than he now is, we might cease half of our efforts for reform and induce people to take them. Nor would it be difficult, even

though they might be unpalatable. But no such food or drink has been or is likely to be discovered, and as relates to alcoholic drinks, they always and invariably act reversely and lessen the inhibitory power of man over his own acts. If his powers in this direction are great when sober, they grow less and less the more alcohol he puts into his blood. If his powers are small in this respect a little alcohol upsets it and control is gone till nature removes the poison from his blood.

We have abundant evidence of this in that class of inebriates which are found in our asylums and institutions for their treatment. If they had not lost self-mastery, they would not have put themselves under the care of another to guide them back to health of body and mind. Let me now enumerate some of the simple facts which go to show that alcohol destroys self-mastery. I will take first the muscular system. In health and in the prime of life the voluntary muscles of a man whose body has had proper training yield obedience and all the movements are correlated into one movement of almost ideal perfection. Take a gymnast, a sleight of hand performer, a dancer as extreme illustrations. Take even a skilled wood-chopper in some of our western forests. How perfectly the number of each obey the dictates of the brain. But how is it when the dancer, the gymnast, or the axeman, are intoxicated? The power of control is lost in proportion to the degree of intoxication. No longer do the muscles obey the will, but the person reels, staggers, and falls helpless on the ground. Many of us no doubt have had slight experiences of this power of alcohol to take away self-control of the muscles when it has been used only medicinally, and in very small quantities.

The same thing happens to the mind. Under alcoholic influence the brain begins to think awry. It cannot think straight. The judgment becomes warped. The intellect clouded. A man under liquor once said to me: "Do you see that horrid creature coming down from the stars with a load of snakes and throwing them right and left about the room?"

It was a case of *delirium tremens*, his brain was no longer his own, it ran wild like an engine in full motion, and no engineer to guide it. Who of us would knowingly trust our lives on a railway train with an intemperate engineer? We know his judgment cannot be depended on to bring us safe to our journey's end. Many a battle has been lost, many a ship sunk, because the captain had lost control of his faculties by drink.

Shakspeare tells the whole story when he says: "Drink, and speak parrot and squabble, swagger, swear, and *discourse fustian with one's own shadow.*"

In the effect on the moral nature we find the same result of alcohol in taking away man's power over his own acts. Seneca said, ages ago: "Men will do many things in their drink they are ashamed of when sober. It emboldens men to do all sorts of mischief. It irritates wickedness. It was in a drunken fit that Alexander slew Clytus. It makes him who is insolent prouder, him who was fierce more cruel. *It takes away shame. The tongue trips, the head turns round.*"

I have thus by degrees led up to the final point, the effect of alcohol on chastity. The sexual impulse is one of the most powerful in man. It is necessary that it should be strong, but it is equally necessary that it should be under right guidance. There are no such checks to its abuse in the human being that are in the animal creation. Its wrong action must be prevented by self-mastery. In the normal man if he knows the benefits to health and happiness which result from chastity, he will take this part of his nature under the dominion of his reason and his better judgment. But the experience of the ages shows that intemperance, drink, alcohol so lessens the inhibitory power which is slowly growing up in man and which distinguishes him from all lower animals that this is impossible. Under its influence he drops back to a primal state—yes, worse than a primal state—and gives way to his impulses whatever they may be, the very worst thing it seems to me that can happen to a human creature. He now becomes a degenerate, insane, mad.

I could give abundant testimony that the use of alcoholic drinks is one of the strongholds of unchastity, but it is not necessary — you all know this. With the advance of universal temperance its worst forms will, I believe, disappear, and whatever of it remains will be easily managed by the right kind of education and a knowledge that happiness is the result of obedience to the laws of life, and that misery comes from disobedience to the same.

A PRACTICAL move is on foot in England under the direct supervision of Lady Henry Somerset whereby an inebriate home is provided for women of the better class needing other than the help of their own resolutions to reform. The Duxhurst Home includes first what is called the Mansion. This building, which has been rented by the National B. W. T. A., will accommodate seven guests. Its entire conduct will be that of a home wherein comfort and refinement abound. Knowing full well the value of the exercise of a spirit of sympathy and helpfulness, during the summer months a holiday home for poor children from London will be established within walking distance of the Mansion, whose inmates will, with Lady Somerset, form a council for management, doing all they can to forward the happiness of the homeless little ones. The profits arising from the Mansion are to be expended in the support of a home farm for poorer women in the thrall of the drink habit, and besides these there will be a nursery cottage and an intermediate home for ladies' maids, wives of small shopkeepers, etc. Into this home patients will only be admitted upon a pledge to remain at the home under entire abstinence for twelve months at least. This home is now ready, and the others will soon be. The plan commends itself as thoroughly practical, and as one of Lady Somerset's boundless charities. We wish for it abiding success.

Abstracts and Reviews.

RESTORATION OF INEBRIATE WOMEN.

The fifteenth report of the inspector under the Inebriate Acts for the year 1891 was published on September 17th. Respecting the work done at Fallowfield, the Manchester Retreat for Inebriate Women, the inspector gives the following remarks of the licensee :

“The Grove is one of the largest retreats for women open under government license. It is visited by an inspector appointed by the crown. Rich and poor patients are received, the former paying for their board, the others paying smaller sums and employing themselves in useful and remunerative work. There is abundant need for such retreats. Among the well-to-do alone, no domestic miseries are more hopeless, and few more frequent, than those which are caused by the father or mother being a drunkard ; probably the drunkenness of the mother is the saddest of all. Again, it is painfully common for a woman to be brought before the bench scores and hundreds of times for being drunk, and punished over and over again with short terms of imprisonment. Imprisonment in such cases is the most futile of resources ; the poor creature is released just when the pains of debauch are over, and the craving for drink has returned, but too early for any cure of her disease, moral or physical, to have been made. The fact cannot be too frequently reiterated that nothing short of prolonged restraint from the use of stimulants — until the craving has died away and the constitution recovers its normal condition of health — is of any avail as a remedy. Even the twelvemonth prescribed by law proves not a day too long.

“The following figures will describe the work of the Grove during the year ending December 31, 1894 :

Number of applications,	128
Number admitted,	24
Left after a year's stay,	23
At present in the Retreat,	25

“The methods adopted at the Grove are simple and natural. They are immediate and entire abstinence from strong drink, strict regularity of life, constant and cheerful employment, gentle firmness, and unflinching sympathy, and a religious influence always present and often directly urged. The Grove and its beautiful grounds form bright and healthful surroundings, while skillful and kindly medical help is always at hand, thanks to the unflinching kindness of our honorary medical advisers. It may be of interest to note that among the patients we have had one in whom the habit of cigarette smoking was combined with inebriety; another case was complicated by the opium habit. It may be added that our experience has confirmed what has often been proved before, that even in the case of the worse habitual drinkers, no harm, but the reverse, is done to the health by the sudden and complete disuse of all alcoholic drinks.

“It is a common opinion that when once a woman has taken to drink recovery is impossible. It is, therefore, natural for the question to be asked, How far has the Grove achieved success? Do the patients who leave us stand firm? Before answering this question it should be remembered what sort of patients we receive. They are not persons who have just begun to drink to excess, and have suddenly awoke to their peril. Such persons do not seek refuge in a licensed retreat; they try, often vainly, to recover themselves by easier methods. The patients who come to the Grove are those who have run their course, and come to utter misery. They are often destitute and outcast from their friends, broken down in health and self-respect, and utterly degraded. They are the wreck of womanhood. They are among the worst cases that can be dealt with. If then we find that 25 per cent. is the average proportion of patients who give evidence of permanent recovery, we need not express either wonder or regret. The wonder is that so

many should stand firm, considering the abundant temptations which meet them upon leaving the Grove in the allurements of the ubiquitous liquor trade and the pernicious customs of society. And it should further be mentioned that if one of our old patients is known to take stimulants in ever so small a quantity she is recorded in our books as relapsed, although she may not be known, as yet, to have become an inebriate. It is, meantime, an enormous comfort to the committee and workers at the Grove, to receive frequent letters and visits from former patients, who testify to the blessings they have received. Four women who left in 1891, our first year, still remain steadfast abstainers, and are doing well in their several stations of life. Six who left in 1892 have stood firm; nine from 1893."

A REMARKABLE CASE OF THEAISM, BY JAMES WOOD, M.D., OF BROOKLYN, N. Y.

During investigations lately carried on to determine the existence of a tea-drinking habit, its frequency and the effects of the constituents of the tea-leaf upon the human body, a very remarkable case was encountered. I had become accustomed to meeting individuals who drank from ten to fifteen pints as their daily amount, but when the case to be reported presented itself it was thought rare enough to report.

Case 306 was a tall blonde, twenty-six years of age, who had come to this country from Ireland when quite a young girl. She was married in her eighteenth year to a strong, burly man, much addicted to the use of alcoholic beverages. One year after marriage their first child was born, and from this time she commenced to use tea. Why she should have begun at this particular time she could not explain. At first she said the amount was very small, but the quantity necessary has grown greater and greater. In all four children have been born to her, and while nursing them she has

always kept a quart-pitcher of tea by her side from which she frequently regaled herself. She said she had become more irritable and cross every year, and found it harder to content herself with her husband and his drinking habits, and that in consequence domestic infelicities had increased in number yearly. She had also found that tea would take the place of food, and when not particularly hungry, or too busy to prepare meals, she had recourse to the teacup with complete satisfaction.

This is briefly the history of the patient when she presented herself for treatment for, as she said, nervousness and sleeplessness.

At the time of her first visit she had paroxysms of what she termed "cruel and fierce" headaches, either temporal, frontal, occipital, or general, persistent neuralgia of the face and neck, and dull, heavy pains in the lumbar region. She had also attacks of vertigo and mental disquietude and confusion, and was conscious of increasing forgetfulness. After these attacks she would have periods of despondency, alternating with great anxiety, a feeling of impending accident and death, either to herself or children. There would be times when her sleep was restless and troubled; nightmares and dreams were frequent; after which there would ensue insomnia, at times complete, and of several nights' duration. She was very nervous, easily startled, and very prone to be hysterical. The hallucinations usually met with in cases of tea-intoxication were also present in her case. She had at times an almost irresistible desire to look around or under the bed, because she imagined that some one was in the room. She said that when she stopped to think she "knew it was not so, but that she *must* look and see." When walking on the street there seemed to be shadows on the sidewalk beside her, as if made by some huge animal.

This is a brief detail of the most prominent nervous symptoms, so called. Her bowels were very much constipated, several days elapsing without an evacuation. She had no appetite, was subject to attacks of severe cardiac pal-

pitiation, and complained of a sinking sensation at the pit of the stomach. Her menses occurred every three weeks and lasted about eight days, and at this time all of the symptoms were much aggravated.

The amount of the infusion of the tea-leaf drunk by this woman is astonishing, and the case is for this reason by far the most remarkable one in a large collection of teainebrates.

When asked how much tea she drank a day, she hesitated, and then said, "Oh, I drink about thirty cups a day." After closer questioning by both my associate, Dr. Alexander C. Howe, and myself, she confessed that she drank five cups before and five at breakfast, but did not know how many during the day, because she drank from a pitcher or bowl, as drinking from a cup was too slow a process and unsatisfactory. She said that her husband, who did not use tea, would let her buy only two pounds a week. From this she could make about seven "pots" of tea per day. The teapot, she explained, had a capacity of two quarts.

Here, then, is a woman who drank on an average twenty-eight pints of the infusion of tea every twenty-four hours, and who said that she could have drunk more had not her husband prohibited such an extravagance. From the history and from her own story the reason for drinking tea in this large amount lay solely in its stimulating effects. From a study of the physiologic action of thein and the essential oil on the system, this is not surprising, nor could a better and at the same time more pernicious non-alcoholic agent be found in common use.— *Medical News.*

LEGISLATION FOR INEBRIATES IN AUSTRIA.

The first instance in which a continental legislative assembly has treated the drink craze as a disease rendering its victim a source of danger to the state, has just been provided by a bill now about to be introduced to the Austrian Reichsrath. This bill proposes to treat the persistent inebriate as

a person who is mentally incapable and likely to inflict injury upon the community, not only by actual violence, but by his example. It is therefore proposed that the authorities shall keep him under control, both during good behavior and for such a longer time as in the opinion of competent physicians will serve to wean him from his craving for strong drink.

This bill is the result of a long continued series of efforts by the medical profession of Austria, founded on the advice and experience of the American Association for the Study and Cure of Inebriates. The ground has been taken that the position of the drunkard in social life has not been hitherto properly estimated. It is argued that he should be regarded more as a lunatic than is at present the case, and that he should be treated accordingly. There has always existed a feeling that the craving for drink, with its consequences, ought to be treated as a mere bad habit, a temporary and recoverable error, not really a form of mental disorder. This, there can be but little doubt, is a false reasoning, for evidence has multiplied in recent years that the victim to alcohol is subject to a disease, just as much as a maniac or a lunatic. The disease has received all sorts of names, but as to its nature it seems agreed that it consists in a weakening or decay of the will power coupled with a craving for stimulants.

The restraint which the Austrian Reichsrath proposes to put upon the drunkard may take the form either of voluntary or compulsory detention in especially appointed retreats. In cases where the confinement is compulsory provision is made for a regular trial in which witnesses, both lay and medical, will be heard. The justification for detention will consist in such facts as repeated previous convictions of drunkenness, proof of danger to life, and other evidence strong enough to leave no doubt that the alcoholic passion has become ungovernable and has rendered its victim morally or physically a source of danger to himself or others.

The term of detention will be two years, and this term is liable to reduction or renewal, as the occasion may require.

The drunkard will therefore be made to feel that he is not merely committing a misdemeanor when he tipsles to excess, but a grave crime, for which the state will lock him up and treat him as a person who ought not to be allowed at large.

There is a vast difference between this mode of treatment and that in practice in other countries, where a drunkard is locked up for a few days as a punishment for his offense, no effort being made either to better his condition or to prevent any injury he might possibly inflict when under the influence of alcohol. The danger in the latter case is, of course, much greater if the period of alcoholic excitement is a long one. In case the bill passes (and there is but little doubt of this), the Austrian citizen will have little opportunity to go on a long spree.

The bill may be taken as fairly representing medical opinions on this subject. Modification in detail may, perhaps, be found advisable as time goes on, but the profession will probably approve the bill on its general outlines. The attempt to repress the excessive drinking habit and to treat it as an ingrained vice, which has absorbed all traces of a resisting will, certainly deserves a fair trial. Every precaution will be made to render the preliminary investigation as searching as possible, and no personal privileges will be lost by detention.

It is rather the purpose of the bill to protect the state and improve the condition of the victim than to inflict punishment. The patient's own interests will be served in a degree at least equal to that of his relatives and friends.

It is true that such measure will be adopted in all civilized countries in the course of time. A treatment such as this one here outlined would certainly result in the benefit of the patient, and the confinement would not be much lamented by his family.

ANCIENT PUNISHMENT FOR DRUNKENNESS.

The offense of drunkenness seems to have been a source of great perplexity to the ancients, who tried any number of ways of dealing with it. If none of them succeeded, it was, in all probability, because they failed to suppress the means by which this insidious disease is incited and propagated. Severe treatment was often attempted without any satisfactory results.

The Romans prohibited the drinking of wine upon the part of men under thirty years of age, a rule which applied to women of all ages. If a wife were declared guilty of consuming fermented liquor, her husband might legally scourge her to death.

The Carthaginians prohibited governors, magistrates, soldiers, and servants from drinking anything stronger than water, and the Athenians made it a capital offense for a magistrate to be drunk.

The Suevi seem to have realized the necessity of drastic measures, as they went so far as to prevent the importation of wine into their country.

The Locrians, under Zalenous (660 B.C.) made it a capital offense to drink wine unless it were mixed with water; even an invalid was not exempt from punishment, unless his physician had ordered him to drink undiluted wine. History does not relate whether physicians were in the habit of giving such instructions.

Pittacus of Mytilene (651-569 B.C.) made a law that he who, when drunk, committed any crime should receive double the sentence which he would have received had he been sober. Aristotle and Plato considered this law the height of wisdom. The Roman censors were empowered to expel a senator for drunkenness, and were at liberty to confiscate his horse.

Mohammed ordered drunkards to be bastinadoed with eighty blows.

Some nations seem to have approved of "moderate" drinking, as they limited the quantity to be consumed at one

sitting. This was the system adopted in ancient Egypt, but the limit does not appear to be stated in any history now extant. The Arabians fixed the quantity at twelve glasses a man. Unfortunately, however, the size of the glasses was not clearly defined. The Anglo-Saxons ordered silver nails to be fixed on the side of drinking cups, so that each person might know how much he had consumed. This method is said to have been introduced in consequence of King Edgar noticing the drunken habits of the Danes.

Lycurgus of Thrace (about 900 B.C.) was a thorough prohibitionist ; he ordered the vines to be cut down.

The Spartans tried to turn the vice (as it was then regarded) of drunkenness into contempt by systematically making their slaves drunk once a year, in order to show their children how contemptible men looked when in an inebriated condition.

Drunkenness was considered much more vicious in some classes of persons than in others. The ancient Indians, for example, held it lawful to kill a king when he was drunk. Charlemagne (A.D. 742-814) enacted a law that judges and pleaders should do their business fasting.

The English expression "drunk as a lord" proves that at one time to become intoxicated was regarded as indicative of aristocratic birth and breeding. Moreover, "a three-bottle man" was respected as one who displayed qualities which his friends might well envy.

It is not a great many years since people supposed total abstinence from alcoholic stimulants actually shortened life, and there exists in London (England) to-day a gentleman whose life was refused by an insurance company solely upon the ground that he was a teetotaler!—*Lawrence Irwell in "The Voice."*

THE TWENTIETH CENTURY PRACTICE OF MEDICINE, EDITED BY T. L. STEDMAN, M.D., New York City. In twenty volumes. Vol. III, Occupation, Diseases, Drug Habits, and Poisons. William Wood & Co., New York, 1895.

Volume third of this magnificent work contains Dr. Norman Kerr's splendid paper "On Alcoholism and Drug Habits." Verily the world of science has moved on and upwards. One hundred and thirty-seven pages are devoted to a subject which has been looked down at with lofty contempt as a "fad" and a delusional whim in many circles of science. The bitter critics of twenty years ago have turned round and are now the enthusiastic defenders of the disease of inebriety. Dr. Kerr's paper is admirable in its tone and spirit, and presents the best review in print of the entire subject. The American reader will be astonished to find that American authors have been among the foremost leaders in this field. They will be also pleased to have grouped in such a convenient form all the leading known facts of the toxic drugs used for narcotism. The causes of inebriety and its relations to other diseases, its physiology, pathology, and medico-legal relations are presented concisely and in a most practical way. We shall give our readers full extracts in the next number of the JOURNAL of parts of this article.

Beyond Dr. Kerr's paper, there are exhaustive articles "On Shock and Collapse," by Dr. Shrady; also "On Seasickness," by Dr. Gihon; and "On Mountain Sickness," by Dr. Liebig; "On Osteomalacia," by Dr. Councilman; "On Heat Stroke," by Dr. Gihon; "On Frost Bite," by the same author; "On Diseases of Occupations," by Dr. Lloyd; "On Poisoning," by Dr. Small. It will be seen from these titles that this great work is thoroughly an international encyclopedia of practice, one that should be in the library of every physician and asylum. So far it gives promise of presenting the largest number of exhaustive monographs on practical medicine which has ever been issued from the press. Send to William Wood & Co., New York City, for circulars.

THE PHYSICAL, INTELLECTUAL, AND MORAL ADVANTAGES OF CHASTITY. By M. E. HOLBROOK, M.D., Editor *Journal of Hygiene and Herald of Health*, etc., etc., etc. M. Holbrook & Co., Publishers, New York City, 1895. Price \$1.00, postpaid.

This work of one hundred and fifty pages presents the reasons for chastity and the various advantages in a clear, graphic way.

The physical laws and the penalties of their violation, also the advantages from their observances, are set forth in a very plain, sensible manner. Such works are invaluable for young men and women, by removing false impressions and giving correct ideas of sensual life and control, and inspiring to a higher ideal of living. Such works in the hands of young persons would be of immense service to the cause of purity, and a power against the evils of unchastity. We most heartily commend this book, and thank the author for his excellent contribution to the uplifting of humanity and clearing away many of the doubts and present obstacles.

THE FEMALE OFFENDER. BY PROFS. LOMBROSO AND FERRERO, with an Introduction by W. D. Morrison of Her Majesty's Prison, Wandsworth, England. D. Appleton & Co., N. Y., 1895.

This is the first of the "Criminology Series," by Dr. Morrison, and is designed to embody the results of extended investigations into the physical conditions of crime and degeneracy.

Beginning with the great teacher Lombroso, the criminal and abnormal woman is studied in a most exhaustive way. The anthropology, pathology, psychology, and physiology of the criminal woman and prostitute is treated in seventeen chapters, fully illustrated by groups of pictures. Many of these chapters are most suggestive studies of women who are constantly under the care and observation of physicians. The anomalies and types of these classes, with their special degenerations and defects, is a wonderful study, especially

when the fact appears that alcohol in the parents is a prominent source of this degeneration. Our readers will find in this work a vast field of allied disease to that of inebriety, another branch of the same family dissolution. Crime in women is always fascinating, and always obscure, and yet it follows organized lines of movement. This work is a revelation to most readers and calls attention to the vast range of physical causes, that are practically unknown in crime by both sexes. As a new work, in a new field, by a great student of science, it should be in the library of every student and thinker. This is literally one of the epoch-making works of this century, particularly in calling attention and opening up a new field of anthropological study.

THE DISEASES OF PERSONALITY. By T. W. RIBOT, Professor of Comparative and Experimental Psychology in the College de France. Authorized translation. Second revised edition. Chicago. The Open Court Publishing Co., 1895.

That the works of Ribot are appreciated in this country is manifested by the number of excellent translations which have been published in America. It is not so long ago that Professor Baldwin, late of Toronto University, translated Ribot's "German Psychology of To-day," while the Open Court Publishing Company have authorized translations of his "Psychology of Attention," "The Diseases of the Will," and, lastly, "The Diseases of Personality."

Ribot is a strong advocate of the new psychology, *i. e.*, a psychology which repudiates metaphysics. Experimental psychology presents a wide field for future research, and it is from a more thorough and practical study of the pathological and physiological manifestations of the nervous system that we are to expect much advance in psychological lore. For purposes of analysis of the human personality, Ribot has made a division into the organic, affective, and intellectual conditions of personality.

Among the organic disorders he discusses slight variations of the personality in the normal state, cases of double personality, personality of doubles, monsters, and the personality of twins. Among the affective disorders he discusses depressions and exaltations of the personality, their alteration in circular insanity, complete metamorphosis of the personality, sexual characters, eunuchs, hermaphrodites, opposite sexuality, total transformation of the character, etc. In disorders of the intellect he discusses the alterations proceeding from paræsthesia and dysæsthesia, alterations proceeding from hallucinations, cerebral dualism, and double personality, the role of memory, and the role of ideas. In another chapter on the dissolution of personality the changes of personality in progressive dementia are discussed.

The medical practitioner interested in psychology will peruse with interest this excellent translation of one of Ribot's latest works.

The *Scientific American* by Munn & Company is a paper of rare value and usefulness in every family, stimulating interest in all scientific movements of the day.

The *Homiletic Review* should occupy a place with all the great monthlies on the library table. Its topics are cheering and helpful. They lead the mind into ranges of peace and quietness, out from the excitement of the present.

The Voice still echoes the roar and clash of the battle with rum, a conflict that must end in the abolition of our present delusions concerning alcohol as a beverage. *The Voice*, as a weekly paper, has caught the sounds of the oncoming revolution, and its tone is more confident and emphatic. It demands a place in every library and family of the land.

The *Appleton's Popular Science Monthly* is the new title of our old friend whose monthly visits brings stirring news from the scientific frontiers. No other journal is so stimulating and positively healthful to the medical man in every possible relation. Every asylum should have a copy in its library, if for nothing more than to show a desire to keep up with the restless march of truth.

A Noble Life is the title of a memorial pamphlet with portrait of John Newton Stearns, who was so long and prominently identified as secretary of the National Temperance Society. It is an excellent sketch of a good man who was very influential in the cause of temperance in the country.

The Review of Reviews is practically a busy man's journal, where he can see at a glance an epitome of the world's progress, and all the varied discoveries of the hour. Every new paper that is published is noticed here, and all the new thoughts of the best thinkers are brought in review. Send for a copy and examine its merits.

PILOCARPINE IN ALCOHOLISM.—Dr. Josham recommends one-third grain doses of Pilocarpine hypodermatically, and declares "its sobering effects are remarkable"; sleep ensues, and the patient wakes up a perfectly rational being. "The tense, red, bloated countenance and bleared, congested eyes pass away, the features become calm and easy, the skin soft and clear."—*Provincial Medical Journal*.

INEBRIETY IN FRANCE.—The following statistics by M. Magnan give an idea of the prevalence of alcoholism in the department of the Seine. Among 3,740 patients (2,072 men and 1,668 women) admitted to the Sainte Anne Asylum in 1894, there were 775 suffering from alcoholism; of these 624 were men and 151 were women.

A petition has been presented to the English House of Lords praying that any person who has been twice convicted of drunkenness within two years shall be defined as an habitual drunkard, and that any licensed dealer serving or harboring him, after due notice, shall be liable to penalties and forfeiture of license.

Editorial.

THE QUESTION OF NUTRITION IN INEBRIETY.

Many cases of inebriety have a hereditary predisposition to unbalanced and defective nutrition. From early life food has been used with great irregularity, as to time, quality, and quantity. Various complex derangements of digestion, with defective assimilation, and excretion are common. Wide variations of appetite, and periods in which the person becomes fleshy or grows thin follow each other. This nutritional variation was noted in the army where, under similar surroundings and conditions of living, excretion and assimilation varied widely. One man would become fleshy, another would lose flesh, and constipation, diarrhoea, defective or increased appetite, together with other changing nutrient disorders were common. In a certain number of cases of inebriety, nutrient irregularities were provoked in early childhood, by reckless and indiscriminate choice of foods; permitting the child to have everything its taste or inclination desired. From this a defective nutritive control and want of balance are started which continue through life. This derangement is always imperfect assimilation and excretion, and the toxic products retained in the system become sources of poisoning. Alcohol in some form is the basis of many digestive remedies, and while acting as an anæsthetic, quieting the irritations from the poisons, is the cause and source of new and more dangerous degenerations. This nutritive derangement is manifest functionally by states of nervous irritability and rapid exhaustion all through life. Derangements from the slightest causes, strains and varied states of exhaustion all center on nutrition, and disturbances here become the exciting cause of the craze for spirits. After spirits or any narcotic drugs are used continuously or in

so-called moderation, the formation of toxic products are increased, and their excretion and elimination diminished. The inebriate is always in a semi-poisoned condition, in which nutrition is most seriously and specifically affected. The rational treatment should be directed, first, to elimination, and to assist in throwing off the poisoned products, also to correct and improve the nutrition. Baths, saline purgatives, and easily assimilated foods that do not tax digestion are required in all cases. These are increased in value by nerve rest, quietness, and correct psychical surroundings. It will be apparent that the nutrition of all cases of inebriety is of great importance in the treatment, but should not absorb the entire attention. In certain cases the correction and restoration of nutrition is the practical cure of the inebriate ; in others it is the beginning the cure. Questions of particular diets, such as grains, fruits, and meats, or mixtures of these foods, are all practically unknown fields of study. It is not possible at present to dogmatize or assert positively concerning the value of any special diet in the treatment of inebriety. From the facts at command there can be no doubt that more particular attention should be given to the nutritive treatment of these cases. Assimilation and elimination are functions of supreme importance in the building up and restoration of the degenerate states which are at the bottom in inebriety.

TRAINING ESSENTIAL IN THE STUDY OF INEBRIETY.

It is one of the curious facts rarely noticed, that many of the voluminous authors on inebriety and the drink evil are without training and experience in the study of this disorder. One man, the author of three books and many papers minutely describing the cause and cure of inebriety, is a clergyman who denounces physicians and scientists as infidels and unsafe, unreasonable teachers. Another famous author is an editor who began as a printer, and a widely

known reformer who boasts of his power to teach the world the truths of alcohol, spent twenty years of his life in excessive drinking, then stopped and became a teacher. Another man who is very dogmatic and assertive, and has written voluminously on inebriety is a retired merchant who has spent most of his life behind the counter selling goods. The list might be extended almost indefinitely, and in every case we look in vain for the training and preparation to become competent observers and teachers of what inebriety is or is not. The reformed inebriate may talk glibly and with great earnestness about inebriety, but he is beyond the period of carefully gleaning, storing, and tabulating facts concerning inebriety. He is incompetent to reason from the facts alone, above all dogma, theory, or intuition. His brain cannot proceed along the lines of logical equations, of similarity and diversity, of identity and difference, and on these range the facts under some general law. The clergyman and reformer who start from some theory, then pile up evidence to support it, are unable to understand the real facts and their true meaning. The study of inebriety is not advanced by such men; they may keep up a certain agitation and conflict of theory and opinion, but they never enter into the real territory of facts. This is only done by the trained student, who brings to the work capacity for collecting, discriminating, and grouping facts, and from this, discovering laws and lines of generalization that point out the real forces at work. All this must be done without the bias of theories or previous conceptions. Facts concerning inebriety collected by the reformed inebriate, by the emotional enthusiast, are incomplete, faulty and fictitious, however honestly they are held. They are so largely the products of the emotions and feelings as to be practically rubbish. Yet every one assumes that such men are competent to judge why men drink, and how they can stop. In the lowest haunts, and in the most intellectual circles, this great drink problem is discussed with the familiarity and assumption of a common every-day topic, while in reality it

is one of the most difficult psycho-scientific topics of the age. It is toxicological anthropology, which requires not only special training to understand, but great natural tastes and adaptabilities for such a work. The strongest, clearest brain powers are demanded. No one who has been poisoned by alcohols and drugs can do this work ; no desires or emotionalism, or zeal or oratory, or excellence in humanitarian labors, will prepare one for this great field of exploration. The time is not far away when trained men will appear to occupy and open up this new dark continent of truth.

LEGAL TREATMENT OF INEBRIETY.

The failure of the present legal methods of treating inebriety, and its inability to check drunkenness and protect society is emphasized by the statistics of each year. From police and other court records of persons arrested for inebriety, there is evidence of a marked increase in numbers. This is in the aggregate, not in any one place or time, but in the course of years. While there are noted fluctuations, such as a great decrease, then a sudden increase of persons arrested for inebriety, the rise has been continuous, and parallel with crime and pauperism. The present methods of dealing with inebriety are evidently powerless ; immense expenditure of energy and money is lost in every community and nothing is accomplished. Why are these efforts of legislatures through laws, and the application of them by judges, police, and prisons, such disastrous failures ? One of the obvious reasons is the delusion that inebriates can be controlled through fear of pain and punishment and dread of the law. It fails to recognize that alcohol produces anæsthesia and paralysis of all the higher nerve centers. The inebriate is abnormal ; no fear of punishment has any marked impression on his mind. He might shrink momentarily from the consequence of his conduct, but this would give way to the delusions of strength to overcome all possible conditions. The higher brain centres are more or less pow-

erless to recognize the claims of duty and obligation and responsibility to others. Another reason for this failure of penal methods is a similar delusion that all inebriates are alike, and the same conditions provoke and continue the use of spirits. Hence one law and one method apply to all. No treatment that is based on exclusive theories which apply to all cases of inebriety will succeed. It is assumed that alcohol is transient in its effects, and the same in all conditions of life, and that the inebriate is normal, and conscious of his conditions and relation to others. This is fatal to any plan of treatment based on it. The treatment of any diseases by routine methods with the same drugs, the same diet, the same surroundings and means is always a failure. The vast army of inebriates arrested for inebriety and petty crime are all treated alike, all subjected to the same penalties, and as a result they become more incurable. No recognition of causes and conditions, of biological anomalies, of degenerations, of mental and physical peculiarities, of environments, of relations to lunacy, to epilepsy, to criminality and pauperism, and hence the treatment is disastrous. Inebriety will increase until it can be studied and treated from the physical side ; until the inebriate will be recognized as a product of pathological and atavistic degenerations ; until the physiological action of alcohol on a defective organism is understood ; until he is known biologically, pathologically, psychologically, and physiologically. Legal theories and legal remedies will continue to destroy and increase the evils they aim to lessen until this is done.

INEBRIATE TRAMPS.

Every one is familiar with the wretched looking degenerate tramp, whose red eyes and nose and alcoholic breath are unmistakable symptoms. There are other tramps that are not recognized, seen in the club houses, homes of the wealthy, rich hotels, up-town flats, and in churches, theatres, in Pullmans, steamers, ocean liners, watering places, and noted resorts everywhere.

They do not always have an alcoholic breath, but they are inebriates in every sense of the word. They drink at meals, early in the morning, late at night, and any time during the day. They are rarely intoxicated, but always garrulous, or stupid, and simple in conversation. They talk loud and long of religion, science, politics, and social questions, but have no real knowledge or clear views of anything. Their whole life is a round of selfish efforts to gratify every appetite, and every impulse that comes to the brain. They never have a thought of humanity outside of themselves, and regard everything of value only as it ministers to their selfishness. Such persons are consumers, never producers. They are degenerates, with steadily increasing paralyzed alcoholic brains, and belong to the same genus and same family with the ragged, wandering nomads called tramps. They are parasites living on the products of others, and doing nothing for the race; nothing to make humanity better, but by conduct and example destroying and breaking up every good impulse to rise. They are clogs and obstacles to all civilization. They require the same sanitary police care that the wandering nomad receives, and should come under the same rules. In the near future these tramps will be recognized, and treated by larger and clearer psychological laws of prevention and cure.

USE OF COCAINE ON THE RACE TRACK.

Within a recent period cocaine has come into use on the race track, as a stimulant. Horses that are worn and exhausted, or are uncertain as to speed and endurance, are given ten to fifteen grains of cocaine by the needle under the skin at the time of starting, or a few moments before.

The effects are very prominent, and a veritable muscular delirium follows, in which the horse displays unusual speed, and often unexpectedly wins the race. This agitation continues, and the driver has difficulty in "slowing down" the horse after the race is over; not unfrequently the horse will

go half round again before he can be stopped. The exhaustion which follows is not marked except in the great thirst and loss of appetite. Sometimes diarrhoea and trembling follows. But good grooms give unusual attention to rubbing and bathing the legs in hot water and stimulants. The general effect on the horse is depression from which he soon recovers, but it is found essential to give cocaine again to make sure of his speed. The action of cocaine grows more transient as the use increases, and when a long period of scoring follows before the race begins, drivers give a second dose secretly while in the saddle. Sometimes the horse becomes delirious and unmanageable, and leaves the track in a wild frenzy, often killing the driver, or he drops dead on the track from the cocaine, although the cause is unknown to any but the owner and driver. Some horses have been given as high as twenty grains at a time, but this is dangerous and only given to worn out animals, who may by this means win a race. It appears that cocaine is only used in running races, and as a temporary stimulant for the time. It is claimed that the flashing eyes and trembling excitement of the horse is strong evidence of the use of cocaine.

ALCOHOL BY SYNTHESIS.

M. Maisson of Paris has succeeded in making alcohol that can be sold for five cents a gallon with profit. The process is subjecting coke and quicklime to the heat of electricity in which carbide of calcium is formed. This preparation in water becomes acetylene. This is transformed into ethylene by heat, and by passing through hot sulphuric acid becomes alcohol when treated with water.

Clinical Notes and Comments.

TEACHING THE DANGER OF ALCOHOL IN THE FRENCH SCHOOLS.

The committee formed by the French Minister of Public Instruction to seek a means of combating alcoholism by the school has approved of the terms of a report by M. Steeg, inspector-general of primary education, in which those means were practically indicated. In his turn the minister has approved the conclusions of the report, and, by a double circular, dated August 2d, has addressed it to the prefects and clerics, recommending them to ensure its application on the return of the scholars. In this circular M. Poincaré expresses his confidence that "the devoted staff of teachers will not fail to collaborate in a humanitarian work which has for its object the preservation of at least the younger generations from the evils caused by alcoholism." We have M. Steeg's report before us, and desire to place its principal features before our readers. It is not necessary, in order to organize anti-alcoholic instruction in primary schools, to alter or enlarge the present curriculum. This curriculum, at the different primary degrees, contains formulæ to point out the shame and dangers of intemperance. Here is the proof for the primary normal schools. The course of morals which is given there the second year by the director of the school himself includes, after an exposition of the principles, a portion entitled "Practical Morals; Application." Now, is there a more striking application of moral principles than that which relates to alcoholism, that destructive scourge of the individual, the family, and society. The sub-chapters which treat of "Respect for one's self, of temperance, and of domestic and social duties," do not they explicitly call for the developments suggested by the terrible extension of the

evil? The course of zoölogy in the normal schools treats of human anatomy and physiology. In this the teacher, after having described the organs in a healthy state, will only have to show, by means of special blackboards and designs, which, I assure you, will be impressive, the morbid troubles and the grave deterioration caused by alcoholic intoxication. Lastly, the chemistry course, under the heading entitled, "Alcohols; Ordinary Alcohol and Fermentation (wine, beer, cider), Trials of Alcohols"; the course of hygiene, under the heading of "Water," and that of political economy, do they not present in the most simple and frequent manner the opportunity of pointing out from different and topical points of view the ravages and miseries of all sorts which alcoholism brings with it? Even the official programme adds the decisive word "Alcoholism," and it has wittingly done so, though when the curriculum was drawn up in 1887, the evil had not its present intensity, nor had public opinion conceived its present alarm. This method of combating alcoholism in dispersed order in normal and higher schools has the evident advantage of causing different professors to compete for the same object, and thus add the force of persuasion to this teaching. In order to summarize and condense what may be too vague, lectures in each of the normal and higher establishments will be given by competent doctors, placing the principal features of the subject in a clear light. But it is especially in the primary elementary school, to which all children are obligatorily called, that it is essential to warn them of the terrible danger which threatens them and their country. It is, then, with perfect reason that the ministerial committee and the minister have regarded as sufficient, as regards anti-alcoholic instruction, the present primary instruction curriculum. An immediate advantage arises from this; it is possible to commence without delay, and a ministerial circular suffices for everything. — *Le Temps.*

A NEW BLOOD CORPUSCLE.—When Hayem announced the discovery of a third corpuscle, there was great enthusiasm among all biologists. When he later announced the relation of these corpuscles to the coagulation of the blood, the interest was greatly deepened. But when Laveran published to the world his discovery of a parasite in the blood of persons suffering from malaria, the very climax was reached. It was far greater than the discovery of a new blood corpuscle; for it told of a parasite which developed and multiplied within the red corpuscle, causing untold misery and large loss of life. We need no longer say we think a patient has malaria; for it is now possible, thanks to Laveran and the microscope, to give a positive answer. Now we know why quinine has such controlling power in this disease; it destroys the parasite and thus removes the cause. As the heel of man shall crush the serpent's head, so, definitely and positively, does the alkaloid of Peruvian bark crush out the life of the malarial parasite. But how can one describe the aches and pains which form a part of a malarial attack? Shall we give an opiate and quiet the pain at the expense of locking up the secretion of the body? There appears to be but one rational method: Give a remedy, if there be one, which will quiet the pain without affecting in the slightest degree any of the secretory or excretory organs. Such a remedy exists in Antikamnia. Antikamnia and quinine, therefore, are the two remedies which science has selected for the treatment of malaria and all malarial conditions. These are now prepared in the form of tablets, each containing $2\frac{1}{2}$ grains of Antikamnia and $2\frac{1}{2}$ grains of Sulph. Quinine.

IN an editorial in the *Therapeutic Gazette* in 1892, the importance of discovering some substance possessing diastatic properties which could be administered in concentrated form to persons suffering from indigestion of the starches was urged, and since that time they have continued to urge

this need upon those best qualified to prepare such an active digestive substance.

The profession have tried to aid the digestion of starch for many years by the use of various preparations of malt, which have been largely given with little direct good as a result, for the diastatic properties of most of these preparations are so slight as to render them practically of no value as digestants, whatever may be their usefulness when acting as nutritives. Within the last few months a Japanese investigator has obtained such a valuable diastatic product that his researches deserve careful study and his results thorough trial. If, as he has apparently proved, we possess in Taka-Diastase a starch digestant equal to or exceeding in power pepsin or pancreatin for proteids, we have made an extraordinary gain in therapeutics, for we are now able to relieve a large number of persons suffering from faulty digestion of starch, and can aid our patients, during convalescence, so that they speedily regain their weight and strength by the ingestion of large quantities of the heretofore indigestible, but nevertheless very necessary, starchy foods.

We trust that the readers of the *Gazette* will at once give this interesting ferment, which is capable of converting over one hundred times its own weight of starch, a thorough clinical trial, administering it in the dose of from 1 to 5 grains, which is best given in powder, or, if the patient objects to the powder, in capsule. We also trust that those who employ this digestant will, as soon as they obtain definite results, communicate them to the original columns of the *Gazette* for the benefit of other readers.

INDICATIONS FOR THE USE OF SULFONAL. — Among the hypnotics brought before the profession within the last few years, two, Sulfonal and Trional, have been received with much favor. After careful trial each was found to have its own field of usefulness in the treatment of the various forms of insomnia. Of course, it is not always possible in

any case to foretell with certainty which one of these is likely to prove of most value, although a knowledge of their physiological actions throws much light on this subject. Trional acts more promptly, but its effects are dissipated more rapidly, so that the action of one dose is less apt to be prolonged over the following night than in the case of Sulfonal. On the other hand, drowsiness on awakening is more common with the latter. We recommend Sulfonal especially for that class of patients who have no difficulty in going to sleep when they first go to bed, but wake in a short time and lie awake, two, three, or four hours, or may have no more sleep that night. In these cases Sulfonal does not interfere with the first early sleep of the night, and acts later so that the patient does not awake at midnight as usual. Given in small doses, not more than ten grains, it may be employed with advantage to quiet restlessness in neurasthenia, and various disorders which cause inebriety and opium disorders. The chief advantage of Sulfonal over Trional, therefore, is that the effect of a full dose continues longer, and that it will frequently produce sleep on the second night, and in a few cases even the third.

In a paper on Acute Mania by Dr. DeWitt, read before the Cincinnati Academy of Medicine: "To procure sleep and quiet is perhaps the greatest desideratum, and I know of nothing so certain in its action as chloral hydrate, given in 40 or 60 grains. It may be given alone or combined with one of the bromides. The "Bromidia" of Battle & Co. I have always found very reliable. It is almost certain to quiet and produce sleep. You will occasionally meet with cases that resist the influence of chloral even in large repeated doses; here opium or some one of its derivatives, either given alone or in connection with the chloral, will be found of service. If hypodermically administered, not less than one-third grain should be given. Small doses only excite the patient, and do more harm than good."

PHYSIOLOGICAL ACTION OF ALCOHOL.

These gray cells are brought into action by coming in contact with the blood. The blood reaches the corticle structure of the brain through the vascular membrane known as the piamater, which fits the convolutions, like a glove fits the fingers of the hand. It is a physiological fact, that, owing to the vascularity of this membrane and other blood vessels that pass into this great center, one-fifth of the blood of the body continuously circulates in the brain, especially during the waking hours. During great mental excitement there is more blood even than this in contact with the cephalic structure. We find, too, that the brain is capable of contracting and expanding as the blood fills the organ, and recedes from it during the hour of sleep. There is another known physiological fact of importance in studying this center, and that is this: As we all know, many people drink alcohol to excess, and we know too that alcohol is indigestible; that when taken into the stomach it is absorbed into the blood without undergoing any catalytic change. When absorbed it circulates in the blood as alcohol. When eliminated by the excretory organs it is thrown off as alcohol, and if not, then one-fifth of the amount of alcohol that is in the blood must necessarily come in contact with the tissues of this important structure. It is also a known fact that when nerve tissue is exposed to diluted alcohol, it excites it, and when brought in contact with a strong solution of alcohol, or alcohol that is not properly diluted, it paralyzes it; so that if one-fifth of the blood of the body continuously circulates in the brain, then one-fifth of the alcohol that is taken by man and absorbed into the blood must necessarily come in contact with this delicate structure, and when it does, it first, in small amounts, excites the action of the cells. But when the blood is overcharged with alcohol it then paralyzes these cells—a fact that we see demonstrated when men are under the influence of this agent. We find that the gray cells are incapable on account of this paralyzation of performing their functions, and the man

talks incoherently or at random and is temporarily insane. If the man is very much under the influence of alcohol, it paralyzes the gray cells that preside over the motor functions first, and we find him incapable of moving his limbs as he should, and as the effect increases it invades the center that presides over sensation, and he is completely narcotized from it, so much so that he is not conscious of bodily injuries that he may receive while under the influence of the drug. If this alcoholism is crowded still further, it may not only invade the intellectual, motor, and sensory ganglia, but it may go on and paralyze the centers that preside over respiration and circulation, and when this is the case the individual dies from alcoholic poison.

Understanding, as we do, the physiological action of this agent upon the nerve centers, we cannot help condemning, in the strongest terms, the use of an agent that has for its end the continuous exhaustion of the important part of man.
— *Medical and Surgical Reporter.*

COGNAC vs. CORN SPIRIT.

At the recent meeting of the French Académie de Médecine M. Daremberg endeavored to prove that while both beverages are hurtful, if not poisonous, the higher-priced cognac brandies are relatively much less wholesome than (as one commentator puts it) the *eaux-de-vie* that are sold for two *sous* over "the zinc" — that is, retailed in the low drinking establishments which are just as common in Paris as gin palaces are in London. Chemical analysis shows that what are generally esteemed as the best brands contain a far larger proportion of furfural and amylic alcohol than do the cheaper spirits distilled from corn, and for this reason alone, even though there were no other, the use of cognac must be injurious to health. M. Daremberg, however, does not rely solely upon chemistry in support of his theory, but maintains that his thesis is sustained and confirmed by the results of his experiments on animals. Ten cubic centimetres of "au-

thetic" cognac, costing sixty francs the bottle, when injected into a vein in a rabbit's ear caused instantaneous death, whereas a similar dose of promiscuously purchased *eaux-de-vie* was not attended by immediately fatal effects. The opposition was represented chiefly by M. Laborde, who pleaded the extreme sensitiveness of rabbits to the action of alcohol, as well as the uncertainty attending intra-venous injections, which may kill the subject quite irrespectively of the nature of the fluid introduced. The speaker had, moreover, analyzed cognac himself, and found it to contain little or no furfural. In his opinion the alcohol of commerce must necessarily be more injurious than that derived solely from the grape. M. Magnan agreed with the originator of the discussion that all alcohols were poisons. He, too, had performed some experiments, but the subjects operated upon were dogs. Fifty grammes of wine alcohol caused depression and drunkenness, which disappeared in about five hours. Alcohol made from beet-root produced a comatose slumber with complete anæsthesia after from eight to ten minutes, this condition lasting twenty-four hours, and the animal continuing out of sorts for several days. Alcohol extracted from maize gave similar results, with the addition during the coma stage of subsultus tendinum. No alteration of the consecutive phenomena was observable on repetition of the experiments after rectification of the three alcohols. On conclusion of the discussion the Academy decided to submit the question to a commission consisting of MM. Bergeron, Laborde, Lancereaux, Riche, Motet, and Magnan. The commenter already alluded to terminates his annotation with the following sensible remarks: "When the best cognac is misused it becomes worthless. What should be avoided is the habitual consumption of eau-de-vie, the *petit verre* after each repast, even though it should be 'authentic' cognac. *Petits verres* soon accumulate in the organism; the hardest stone yields to the constant drops." — *Lancet. Temperance Record.*

ALCOHOLIC NEURITIS IN OLD AGE.

In the last number of *Brain*, Dr. Maude publishes a brief account of a most interesting case. The patient, who was a robust country gentleman of sporting habits, and used to an out-of-door life, had taken stimulants in considerable excess for at least twenty years. Even eighteen years ago no unusual daily allowance was half a gallon of beer, a bottle of sherry, and eight or ten liqueur glasses of "neat" whisky. His favorite drink was beer, and even in the summer of 1894, although over seventy-five years old, he would often consume two quarts of beer, a bottle of sherry, and half a bottle of whisky in a day. He had had no serious illnesses except broken bones from riding accidents and a fractured humerus at the age of seventy-three from a fall downstairs one evening after dinner. During the year 1894 his great muscular power became much impaired, and towards the end of the year he began to complain of severe darting pains in the left lower limb. A few weeks later the hands and feet began to swell rather suddenly, the skin became thin and glossy, while there were small ecchymoses over it. A similar condition was present on the insteps of both feet, while the calves and thighs were œdematous and the muscles shrunken. The knee jerk could not be elicited, and the pupils were small and did not react to light. The heart sounds were somewhat feeble, but they were regular, and there was no sign of dilatation. Without any previous marked change in his symptoms he died suddenly after a few minutes' dyspnoea about two months after the onset of the symptoms. Dr. Maude considers the case to have been one of peripheral neuritis, and directs attention to several interesting points, such as the advanced age of the patient, the excess of his alcoholic indulgence, and the absence of mental change; the fact also that he was essentially a beer-drinker is interesting, with reference especially to the views of the late Dr. James Ross as to the kind of alcoholic beverage most likely to produce neuritis.—*Lancet*, October 19.

FARM COTTAGES FOR INEBRIATE WOMEN.

There is a woman in London, Jane Cakebread, who is brought constantly to public notice on account of the recurrent charges of drunk and disorderly. In fact, she has been arrested two hundred and twenty-seven times, and every one who knows about her naturally asks, What can be done for such a woman as that? Much interest is being shown in the question, and I have taken the opportunity to call attention once more to the scheme that is just being set on foot by the British Women's Temperance Association, which will enable magistrates to consign such a woman, if they deem it wise, to what is practically a reformatory, instead of to short terms of imprisonment.

A large farm has been secured in Surrey on which cottages are in process of erection, and a little village is rising, clustered around a main building. Here habitual inebriates will be received for not less than one year. Each cottage accommodates a group of women with a matron, and thus a small family circle is formed, which will enable the sister in charge to deal individually with her patients, and remove from the undertaking all the features of an "institution."

In the main building the women will dine together, but their other meals will be taken in the cottage, and a more domestic life will be secured in this way. The patients will be employed on the farm in poultry rearing, fruit-picking, bee-keeping, flower-growing, and dairy work. The maximum charge will be 5s., but where patients can afford no payment, cases will be taken free. One cottage will be set aside as a nursery for infants in order to enable mothers to become inmates of the home without being parted from their babies. As those who have studied this question know only too well that inebriety is often most common when a woman has a young child, one of the most frequent difficulties will thus be overcome — one which often prevents women from seeking any place of safety in order to conquer the drink crave.

We shall, when the home is ready, be prepared to take

Jane Cakebread, and will gladly do our utmost to save this most unfortunate victim from the misery of her surroundings.

We sincerely hope that those who are interested in this matter will give us all possible help in this most difficult undertaking. When the home is open we shall gladly welcome any who would desire to pay a personal visit to the little village.

Yours truly,

ISABEL SOMERSET.

Reigate Priory, Surrey.

DEGENERACY FROM ALCOHOLISM.

Dr. Lannelongue, who is a member of the House of Deputies as well as professor at the Academy, has made a vigorous appeal against the lax laws of France concerning the manufacture and sale of alcohol. "Among other statements made by Dr. Lannelongue, he said that 'alcoholism, at the present day, was not only endangering the public health, but also threatening the very existence of the species; it filled the hospitals, the asylums, the prisons, and populated the penal settlements. Previous to 1850, alcoholism was almost unknown; or rather it had not the same character; the effects were temporary because the drink taken was pure and natural. But four years afterwards, alcohol of vinous origin failed, and immediately it was replaced by that derived from molasses, beet-root, and potatoes, which poisoned the race. In 1830 the number of suicides from alcoholism were 5 per 100,000 persons; they were 21 in 1881, while 46 per cent. of homicides, 74 per cent. of grievous wounding, 54 per cent. of family quarrels, 77 per cent. of outrages against public decency were due to drink. Against the many afflictions which attack man, against the large number of contagious maladies, epidemic or other, the characteristic of the healthy individual is his organic resistance, which enables him to triumph over all the assaults from his most terrible enemies — microbes. The drunkard, on the other hand, has lost all

resistance, and falls an easy prey to disease. At 40 he is already an old man ; his tissues are degenerated, so that he makes the worst of patients. It is not the richer classes in France who saturate their bodies with alcohol, because they know better, but the lower classes, and especially the workmen, who are ill-fed, clothed, and lodged. In Brittany, however, women of good position give themselves up to alcohol. Out of 107 young married women who died from drink 8 were sterile, and of the 99 others there only remained as posterity 6 sickly children. On the other hand, these same women had 28 children before having taken to alcohol, who are very healthy, showing what the others might have been if the mothers had led a sober life. What is still worse,' continued Dr. Lannelongue, 'is the fact that the passion of the parents is transmitted to the children. The drunkard engenders an offspring with the same tendency, be they girls or boys, and, curious to say, they begin to drink at the same age that the father began to drink.'" Dr. Lannelongue, who spoke for nearly two hours, interrupted by frequent applause, concluded by appealing to the government to take under its own control the manufacture of alcohol, and to forbid entirely all those liquors made from essences, and more especially from absinthe.

TREATMENT OF INEBRIATES.

Consequent on the 277th appearance of the sexagenarian inebriate, Jane Cakebread, before a police magistrate, Lady Henry Somerset has written to the *Daily Chronicle* that the projected British Women's Temperance Home will be glad to receive and care for this unfortunate woman, on the magistrate consigning her to such a reformatory instead of to short terms of imprisonment. We have repeatedly advocated the reformatory and curative treatment of such cases. The adoption of therapeutic restraint instead of the existing penal procedure of a few days' or weeks' incarceration in a police cell or gaol, which latter plan is neither curative nor

deterrent, but on the contrary, tends to confirm an inebriate career, inasmuch as a brief enforced residence where intoxicants are not supplied suffices to enable the inebriate to recover that capacity for intoxication which had been for the moment lost.

But the law must be amended if such judicious and ameliorative procedure is to be applied to police court inebriate "repeaters." Four British Parliamentary or Governmental Committees, and a Canadian Royal Commission, have strongly recommended such amended legislation, which was embodied in Lord Herschell's Inebriates Bill, which had passed a second reading in the House of Lords just before the dissolution of the last Parliament. Again and again existing homes have undertaken the care of cases similar to that of Jane Cakebread, but have been foiled by having no power to retain the inebriate against his or her will.

Every one interested in the necessary and valuable work done by genuine homes for the treatment of inebriety should therefore strenuously support the Inebriates Legislation Committee of the Association and the Society for the Study of Inebriety in their sustained effort to secure the compulsory reception and detention for a period long enough to afford a reasonable hope of cure, or at least improvement. In the end such a method would be truly economical, as 277 committals of one person involve a large expenditure of public moneys. Magistrates can at present aid the curative seclusion of inebriate offenders only by the moral pressure of recognizances, for a few months at most, on the understanding that the offender remain in a home. What is required is power of committal for from one to two or three years, or more if required. There is some reason to believe that the Government, if not able to see their way to establish and carry on such reformatory institutions, may lend their influence to the empowering of magistrates to send such offenders to a genuine philanthropic home. — *British Medical Journal.*

TOBACCO INSOMNIA.

Many brain-workers suffer from inability to sleep. This is frequently met with among those who work late at night. The sufferers complain that they feel most lively just when the time for retiring has come, and that a long period of restlessness precedes a troubled slumber, from which the slightest noise awakens them. This is very often caused almost entirely by over-indulgence in tobacco. They smoke just before going to bed, ignorant of the fact that not only may tobacco prevent sleep temporarily, but that it may render it less deep, and consequently less refreshing. A grave responsibility attaches to those who lightly seek to relieve a symptom which is really a warning by recourse to a dangerous palliative. The inability to sleep is often merely the outcome of an unnatural mode of life, and if this be corrected the disability disappears of itself. Men who work late are commonly addicted to the tobacco habit. To them tobacco is not a relaxation after a day's work, but a nerve stimulant which enables them to accomplish tasks which would otherwise be difficult of accomplishment. When the mouth becomes dry, alcohol in some form or other is resorted to as a fillip to enable the smoker to tolerate still another cigar or two. Under these circumstances tobacco acts as a cerebral irritant and interferes with the vaso-motor centers of the brain to such an extent that the vessels are unable to adjust themselves forthwith to the condition required for healthy and untroubled sleep. Discretion in tobacco use would save many from this distressing condition of chronic insomnia. Smoking early in the day should be discountenanced, and it is equally undesirable within an hour or so of retiring to rest. The best remedy for the tobacco habit, short of total abstention, is to take a short walk in the open air after the last pipe. Under no circumstances should drugs be used for this form of nocturnal restlessness.—*Pacific Medical Journal.*

FRENCH DRINK LEGISLATION. — The French law courts reassembled last week, and at one of them, the Cour de Cassation, Councillor Rau asked for some alterations in the law relating to drunkenness and alcoholism, the following being a summary of that gentleman's views: For drunkenness the term of imprisonment to be increased for those already convicted, the cumulation of penalties to apply to a second infraction. Lastly, drunkenness should become an aggravating circumstance for crimes and offenses against the public, especially homicide and injuries through imprudence. It was desirable that the public ministry should make larger use of the rights conferred on it by the law of 1889, and bring about the fall of the paternal power against drunkenness when the interest of the family appeared to demand it. The work of justice would not be complete without further powers. It was necessary for the courts to obtain the right to order that, after the expiry of his sentence, the alcoholic should be detained for a determined period in special asylums. This sequestration would at least ensure the momentary cure of the drunkard, and would temporarily relieve society from the perils unceasingly presented by alcohol degenerates. M. Rau thought it was necessary to go further in that direction, and to authorize the placing in special asylums of alcoholics who had been acquitted or an ordinance of no case, whatever be the infraction of the law against drunkenness charged against them.

The *Protonuclein*, a new tissue tonic by the famous firm of *Reed & Carnrick* of New York, gives promise of being a valuable medicine in a variety of cases, that have so far been difficult to reach with drugs. Send for a sample and test it.

The *tissue phosphates* of *Wheeler's formula* is a rare combination of bitter tonics and mineral medicines, that are found very valuable in all cases of anæmia and debility.

The various preparations of *Maltine* have come into such practical prominence, that we have no hesitation in saying that they are literally indispensable in all general and special practice. In hospitals and asylums where the drug is administered more carefully and the results are more positive, *Maltine* takes a high rank as a tissue promoter and builder. The *Maltine* and *Coca Wine* has proved of great service in the first stages of the treatment of the alcoholic and opium cases, and other preparations of *Maltine* later have a great value.

The firm of *W. H. Schieffelin & Co. of New York city*, are publishing a small monthly called *Clinical Experts*, which contains many very valuable facts relating to the new coal tar preparations which are so useful in modern medicine.

Parke, Davis & Co. of Detroit, are the great pharmaceutical educators of the day. Their numerous pamphlets and brochures, sent free to the profession everywhere, are read with increasing interest.

Protonuclein is based on the fact that all living beings are possessed of some property which enables them to resist poisonous influences. The toxic germs may come from the food, the water, the air, and direct local contact. The poison-resisting property is therefore existent in the blood which circulates all over the body. The element of the blood which possesses this antitoxic property is the White Blood Corpuscle, or Leucocyte. Nuclein is the direct product of the Leucocyte. Animals possess this poison-resisting property in a far higher degree than man, being able to resist poisonous influences that would be fatal to the human organism. By preparing, therefore, Protonuclein from the lymphoid tissues of such animals when they are in the prime of their life and in perfect health, we get products which possess the antitoxic and tissue-building properties in the highest degree; far higher than the healthiest and strongest man possesses.

The *Acid Phosphate* of Hosford's preparation needs no commendation; a trial of it in various states of defective assimilation and growth is sufficient to prove its value.

While *Celerina* is not a specific for the neurasthenia from inebriety and opium addiction, it approaches very near to this in certain cases. Persons having large experience depend entirely on this drug for all forms of nerve exhaustions. In all such cases we recommend a trial of it. The advertisement of this drug in this number describes its place in practical medicine.

We have never seen any failures in the use of *Fellows' Hypophosphites*. As a nerve and brain tonic it has come into enormous popularity. For these conditions it cannot be excelled in the range of pharmacy. The trial of this drug is the best test of its real merits and value.

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