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T. D. CROTHERS, M.D., Editor,
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OCTOBER, 1898.

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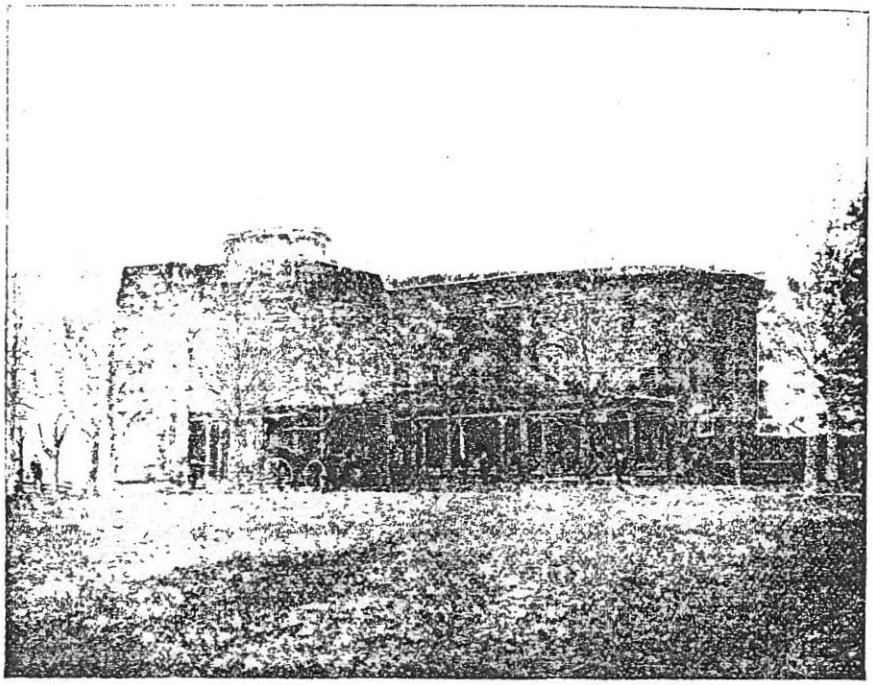

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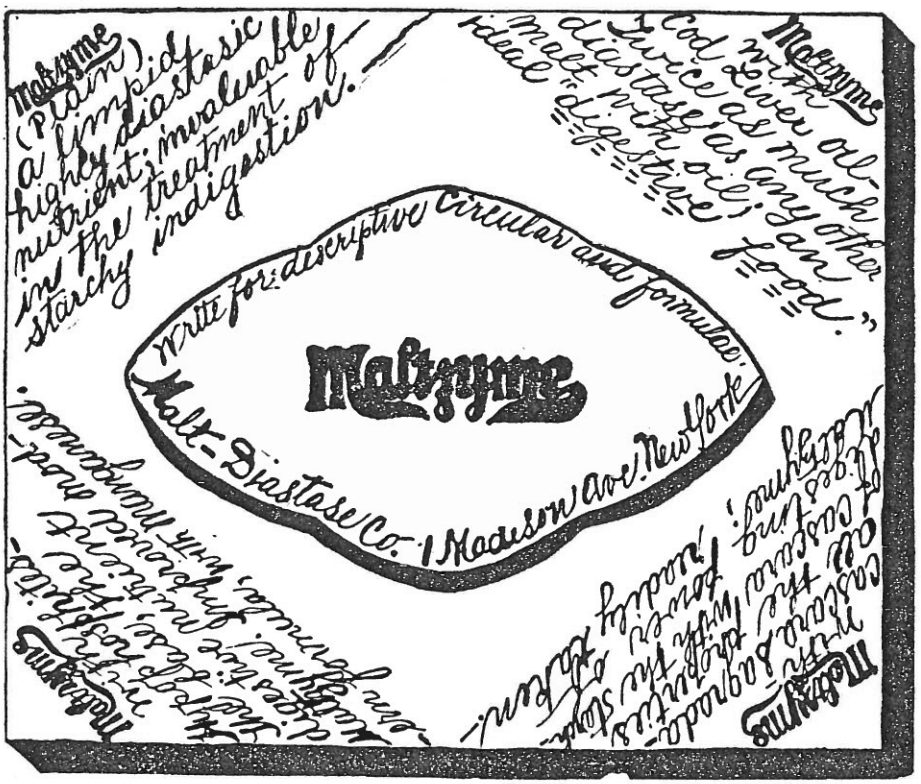
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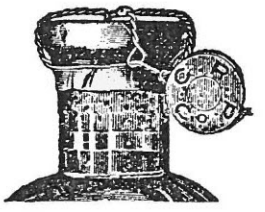

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QUARTERLY JOURNAL OF INEBRIETY.
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Vol. XX. OCTOBER, 1898. No. 4.

THE ABUSE AND DANGERS OF COCAINE.*

By W. Scheppegrell, M.D., New Orleans, La.

When cocaine was first brought to the attention of the medical world it was heralded as an unalloyed blessing to mankind, and one which would revolutionize surgical methods. In some respects this expectation has been realized. The extraordinary effects of cocaine in surgery, especially in the minor branch, have surpassed even the most sanguine hopes, and its application has become such a routine practice that we but little realize that fifteen years ago this drug was practically unknown. In many cases in which a general anesthetic and its attending danger would not be admissible, and in which the patient is unwilling or unable to tolerate the physical pain of a minor operation, this useful alkaloid allows the necessary surgical procedure to be carried out without pain or inconvenience, although not without a certain element of danger, as was claimed by those who first employed it.

In no part of medicine has cocaine been of more service than in the treatment of diseases of the upper respiratory pas-

* Read before the Orleans Paris Medical Society, May, 1898

sages. This is in a great sense due to its ease of application, as the mucous membrane absorbs the various solutions of this drug easily, an absorbability which is less in the throat than in the nose, but in each location sufficient to obviate the necessity of a submucous injection. Not the least value of cocaine in the nasal passages is the contractile effects on the erectile tissues, which enables the operator to inspect the field more thoroughly, whether for examination or for the necessary manipulation for operative procedures. Many pathologic conditions, no doubt, would escape observation but for this useful effect of cocaine.

While admitting, then, that cocaine has proved a great benefit to medicine and surgery, and that it has contributed not only to the comfort of the patient but also to the success of the physician by enabling him to operate more easily and thoroughly, it cannot, however, be said to be an unalloyed blessing. In fact, so fully have surgeons realized the evil effects which the indiscriminate use of cocaine has caused that many believe it has been productive of more harm than good. This was recently illustrated by the remarks of some of the speakers who expressed this opinion in a discussion before the American Laryngological, Rhinological, and Otological Society at its meeting at Washington during May, 1897. As these men have had unusual opportunities for noting the good and evil effects of cocaine, their opinion is certainly entitled to much consideration.

That the danger of the toxic effects of this alkaloid is not fully understood is demonstrated by the fact that in the large majority of cases in which the effects are serious or even fatal no drug to counteract its toxic effects has been at hand. These toxic effects are by no means rare, as is demonstrated by a study of the literature of this subject, and when it is realized that by far the greater number of fatal cases do not find their way into medical literature it can be more fully understood that the application of cocaine is not without its attending

danger. The knowledge of this should cause one to make the same preparations in administering cocaine as when a general anesthetic is used, as the difference of danger is but relative. The agents for this purpose which will be found most useful are nitrite of amyl, nitroglycerine, atropine, ammonia, and digitalis. The most rapid method of relief, and one most easily applied, is the horizontal position, and this should be resorted to at the first appearance of toxic symptoms.

The toxic effects vary according to the amount of cocaine used and the susceptibility or idiosyncrasy of the patient, the latter, as in the case of morphine, being the most serious consideration in the application of this drug, as it sometimes develops in patients in whom it is least expected. In all these cases the element of fear should be considered, with its depressing effects upon the heart and circulation, thus predisposing the patient to the toxic effects. The application of cocaine should, therefore, be tentative, this applying especially to hypodermatic injections in which the action of the drug cannot be controlled when once it has left the syringe. On this account, also, cocaine should never be used in the nasal passages in the form of a spray; it should be applied by means of a small pledget of cotton so that the administration can be discontinued at the appearance of the first toxic symptoms.

Among the symptoms due to cocaine poisoning are extreme pallor, profuse perspiration, unconsciousness; frequent, feeble, irregular and intermittent pulse; dizziness, nausea, in some cases great agitation, and occasionally loquacity; more rarely, blindness, deafness, lividity, muscular rigidity, a feeling of impending death, convulsive twitchings, paralysis, and convulsive or suspended respiration. The earliest symptoms should be carefully noted and counteracting measures at once instituted. When the symptoms are sufficiently urgent the administration of medicines by the stomach should not be relied upon, but the more rapid and efficacious method of hypodermatic injections at once resorted to. The majority of

symptoms disappear quickly or within a few hours after the application of the cocaine, but they are sometimes prolonged for several days. Among the latter may be noted obstinate headache, insomnia, hallucinations, numbness of the extremities, and prostration.

The writers who have recorded the evil effects of cocaine in their practice are sufficiently large in number, although probably small in proportion to those who have not reported their unfavorable cases. A case of chronic convulsions which lasted three hours in a ten-year-old child is reported by Jacoby, and in one case reported by Haenel the epileptiform convulsions lasted for five hours.

The literature of cocaine anesthesia demonstrates the fact that death has occurred from its administration in many instances. Whether this fatal result is due to the amount of cocaine administered, to a peculiar idiosyncrasy of the patient, to omission of proper antidotal or restorative measures, or to the lack of their prompt application, is naturally difficult to determine. Many cases, probably, are due to a combination of these causes. In a case reported by Abadie, death followed an injection of a 5-per-cent. solution of cocaine for an operation on the eyelid. There was loss of consciousness within ten minutes, the respiration stopped, and the face became cyanosed as if from asphyxia. There was partial resuscitation after great effort, but death followed the same evening.

The urethral injection of cocaine has been a fruitful source of fatal results. In a case reported by Sims, the patient was a man aged twenty-nine years, in whom a 20-per-cent. solution of cocaine was introduced into the urethra by means of a long-nozzled syringe which passed about four inches into the canal, the object being to perform an internal urethrotomy. Toxic symptoms at once developed, the muscles of the face twitching, the eyes staring, pupils dilated, frothing at the mouth, face much congested, respiration labored, and finally epileptiform convulsions. The respiratory function was labored,

the action of the heart became irregular and slow, and the entire surface of the body cyanosed. Death occurred twenty minutes after the first convulsion. At the autopsy the brain and lungs were found congested, the right side of the heart was empty, and the left filled with clots of blood. In this case the susceptibility of the patient was obviously aggravated by the large dose injected into the rapidly absorbing mucous membrane. An unrecorded case of a fatal issue from the injection of cocaine into the urethral canal occurred in this city about three years ago. Of five cases of cocaine poisoning reported by R. W. Haynes of Los Angeles, Cal., two had a fatal issue. One of the latter cases was due to the injection of a solution of cocaine into the urethra of a child to facilitate the passage of a sound. In an article on cocaine poisoning by J. B. Mattison, four fatal cases of recent date are referred to, all following the use of a 4-per-cent. solution of the drug. Two of these were also urethral cases, the dose in one being 1 grain, and in the other 1-3 of a grain. In the third case a 4-per-cent. solution was applied to a blistered surface, and in the fourth, a rectal case, 2-3 of a grain in two doses, with an interval of ten minutes, was used. In the third case the symptoms were excitement, convulsions, and death, all within one minute.

Rhinolaryngologic literature has not furnished its quota of the reports of fatal issues from the use of cocaine. Whether this is due to modesty or to the fact that the application of the drug in the upper respiratory passages may be more accurately controlled, it is difficult to state. The enormous extent to which cocaine has been used, and the fact that fatal issues from other causes have been reported as faithfully in this branch of medicine, would favor the latter explanation of the lack of mortality from cocaine in this region. Dentistry has not been so well favored in this respect, this being due to the fact that the gingival membrane has only a limited power of absorption, and the anesthetic effect of cocaine is usually obtained by the injection of the drug. A fatal case is reported in the

Zeitschrift f. Zahnheilkunde, Berlin, September 25, 1890. The patient, a woman aged twenty-nine years, was apparently healthy but quite nervous. The extraction of a tooth was painless and nothing abnormal was noted. The operator withdrew from the chair to obtain some water for the patient and on his return found her motionless. Physicians were summoned and artificial respiration practised, but without success. The quantity of cocaine injected was 1-3 of a grain. A useful moral in this case is that, if the dentist is not capable of treating a case of cocaine poisoning he should not administer the drug except in the presence of a competent physician.

In one case reported by R. W. Haynes, death occurred from the injection of a solution of 4 grains of the drug into the gums for the extraction of a tooth. In addition to these fatal results, the records of dentistry show many cases in which the toxic effects of cocaine have been exhibited without, however, being followed by a fatal result. Grassman reports a case which is remarkable for the fact that the solution was not injected, but simply applied to the gums, the effects developing after five minutes, when no more than $\frac{3}{4}$ of a grain had been absorbed. L. H. Broughton reports a case in which 3 minims of a 20-per-cent. solution were placed in the cavity of a tooth, the application being followed by irregular and slow respiration, retarded pulse, and total unconsciousness. The patient recovered under the use of strychnine, which the author believes to be antidotal for cocaine poisoning. In a case reported by Von Isoo, $1\frac{1}{4}$ grains were injected into the gums of a man of strong physique. The toxic symptoms which developed were of a severe character, palpitation, vertigo, and syncope, the effects not disappearing for several days. George Bock reports a case of unconsciousness, blindness, and other toxic symptoms which followed the submucous injection of cocaine into the gums.

Experiments on animals have shown that, in acute poisoning, the mode of death is that of asphyxiation, this being cor-

roborated both by observation of the animals during life and by *post mortem* examination of the bodies. An interesting observation shown by these investigations is the effect of cocaine upon the bodily temperature. The majority of experimenters who have tried this drug find that when injected intravenously into the jugular vein of dogs it produces a marked rise of the bodily heat. Langlois and Richet also found that the variation of this bodily temperature by artificial means specially influences the power of the drug over the nervous system, and that animals whose temperature is raised by a warm bath before the dose is given rapidly become convulsed and die, the increased temperature of the body by the drug over and above that already produced artificially aiding in the production of a fatal issue. They have noted that cooling of the body prevents such a termination. These authors have also shown that the convulsions following the injection of cocaine into the animal economy are identical with those of cortical epilepsy, and claim that it is in all probability true, as a result of the discovery, that stimulation of the motor region of the cortex produces more marked effects than ordinarily occur under such circumstances.

While a close investigation of otolaryngologic literature has failed to furnish me with an instance of a fatal issue from the use of cocaine, reports of the toxic symptoms are by no means rare, and, judging from the extensive — I had almost said reckless — manner in which this drug has been used this occurrence must have been by no means infrequent. A number of authors have called attention to the toxic effects of cocaine, among whom may be mentioned H. Richards, D. B. Delevan, J. W. Gleitsmann, and R. O. Cotter. McN. Whistler has twice seen vertigo and threatening syncope after applying to the nasal cavities a solution of cocaine stronger than 4 per cent., but Schellenberg, of Wiesbaden, reports the case of a patient in whom a 2-per-cent. solution of cocaine used in the

nasal cavities previous to cauterization, was sufficient to develop severe toxic symptoms.

It would be well to state in this connection that too much importance should not be attached to the strength only of the solution, the principal item being the amount of the alkaloid employed. The application of a 5-per-cent. solution is not necessarily less dangerous than one of 20-per-cent. strength unless the amount used is specified. One dram of the former would contain 3 grains of the drug, whereas 5 minims of the latter contains but 1 grain, which would be less likely to develop toxic symptoms than the former. This point is emphasized for the reason that surprise is frequently expressed at the dangerous effects produced by a weak solution, the quantity of the solution used not being taken into consideration. A case of serious collapse from the use of cocaine after an operation on an accessory cavity is reported by Baden of Denmark, and F. Fox gives an instance in which spraying of the throat for fifteen minutes with a 2-per-cent. solution of cocaine produced weakness of the lower limbs, staggering, depression, and finally unconsciousness, lasting for several hours. The amount of cocaine that could have been absorbed by even this weak solution, when continued for fifteen minutes, is quite sufficient to explain the toxic effects produced. The application of a 4-per-cent. solution in a case of glossitis, which was followed by the most threatening symptoms, is reported by W. Richert. Recovery took place under restoratives, but a second application produced the same effects. Gourand refers to a case in which a 4-per-cent. solution was applied to the tonsil of a young man, and Fischer, of Saaz, reports the case of an actor suffering from chronic pharyngitis in which the application of a 4½-per-cent. solution was used, both being followed by violent toxic symptoms.

In this regard it would be proper to state that the toxic effects of cocaine in the pharyngeal or oral cavities do not develop as readily from simple applications as in the mucous membrane of the nostrils, owing to the far greater power of

absorption of the Schneiderian membrane. This is so rapid that cocaine symptoms may be produced from its simple local application almost as quickly as when injected hypodermatically into other parts of the body. The pharynx and tongue possess this absorbability to a much less degree, and the application requires more perseverence, not only on account of the lack of absorption, but also owing to the fact that the solution is quickly diluted by the saliva which is secreted. A somewhat remarkable case is reported by Castex in which the application of a 20-per-cent. solution of cocaine to the nostril was followed by severe local symptoms, the patient two days later ejecting from the naris a membrane analogous to one formed in fibrinous rhinitis. This circumstance might have been considered only in the light of a coincidence had not a previous application of cocaine produced a similar result.

A number of substitutes for cocaine have recently been suggested, such as eucain "A" and "B," holocain, etc., the advantage claimed for each of these drugs being its less toxic character. The limits of this article will not permit me to discuss the relative merits of these drugs. They have not come into general use and have not been applied in a sufficiently large number of cases to enable one to form a just valuation of their merits. This circumstance alone should be sufficient to prevent one from speaking too strongly of the absence of danger in using them, as recently has been done on several occasions. The method of Schleich in applying cocaine is an important modification and is now very extensively used. The small amount of the drug in the formulæ of this method minimizes its toxic effects and it should be given the preference whenever applicable.

In addition to the toxic symptoms which may arise from the application of cocaine one must consider a more remote effect, but one which is far-spread in its evil, and which now offers a serious menace to society. I refer to the development of the cocaine habit. I regret to state that this habit follows

more frequently from its application in the nose and throat than in any other branch of medicine, and in the majority of cases it results from the ill-advised prescription of the physician. In acute coryza, in which it is so often used, cocaine temporarily relieves the turgescence of the tissues, the sneezing, and the irritability, and when once this dangerous agent has been placed in the hands of the patient, it is frequently a *facilis descensus*. The patient who applies this drug, and frequently the physician who prescribes it, little realizes that this beneficial effect is soon followed by dilatation of the cavernous tissue, due to paralysis of the vasomotor nerves, and that its continued use causes chronic congestion of the tissues which requires the cocaine to be applied more and more frequently until even this remedy fails. That this effect frequently develops is shown not only by medical literature but also by the fact that many physicians use this as a routine measure not only for their patients but even for themselves. Hay-fever is another pathologic condition which encourages the abuse of this drug, and it frequently lays the foundation of a chronic nervous affection of the patient. A number of such cases have come under my observation and many have been recorded. It is to be regretted that the application of cocaine in these affections has been recommended, and even in text-books on rhinolaryngology. Thus I find a well-known author who recommends a 4-per-cent. solution of cocaine in acute rhinitis and acute pharyngitis, and another, an aurist, who recommends a 10-per-cent. cocaine spray (!) in acute coryza.

The development of the cocaine habit in this manner is an easy process, and the results are not only as dangerous as those of the morphine habit but are claimed by some to be even more rapid. Among these effects is a rapidly developing marasmus characteristic of this form of intoxication. The psychologic symptoms are quite marked, consisting of apprehension, delusions, and hallucinations, which sometimes resemble those de-

veloping in chronic alcoholism. There is insomnia, loss of appetite, and frequently complete impotence. The severity of these symptoms indicates that the substitution of cocaine for the morphine habit is an exchange of no benefit to the patient, and the withdrawal of the former is sometimes followed by more severe reaction than in chronic morphinism. Among those who have called attention to the evil effects of cocaine in this particular are Lennox Browne, J. W. Stickler, J. H. Woodward, Seifort, Obersteiner, and Loewenberg. The latter records two cases of young women who suffered from serious toxic symptoms, as insomnia, visual and auditory hallucination, attacks of mania and melancholia, anorexia, and gastralgic pains. The origin of the habit was the use of a snuff powder which contained cocaine. Instead of using three or four pinches per day these patients took the powder in its entirety, the writer estimating that 1½ grams (23 grains) were used daily. In a case reported by A. P. Luff, the patient used a 5-per-cent. solution of cocaine in the nostrils on account of attacks of coryza. The remedy was found to be so pleasant that the patient became addicted to its use and continued it for three years. At this time he was completely unfit for work and suffered from dyspepsia, chronic constipation, and palpitation. A similar case is reported by Finkelnburg, in which a woman developed the cocaine habit from using a snuff consisting of cocaine and starch (5 to 100). The symptoms present were excitability, absent-mindedness, insomnia, hallucinations, dilatation of the pupils, and a disposition to cardialgia. An interesting case is reported by Maurel in which a lawyer became a slave to cocaine inhalations, this having been prescribed three years before for persistent asthma. The faculties had apparently become heightened and more headwork was done, but symptoms of brain degeneration, with unsteadiness of purpose and will-paresis had developed, the patient all the while believing himself to be improved.

Physicians, who suffer so frequently from chronic mor-

phinism, are not exempt in regard to the cocaine habit. The same facility of its use which is so often responsible for the development of the morphine habit also applies here, and unless the evil effects of the use of this drug are fully understood the number of cocaine habitués will soon be greater than those suffering from morphinism. Two cases in physicians are reported by Zenner, one of whom suffered from the cocaine habit alone and the other from mixed morphine and cocaine. In the first case the object of the cocaine was to relieve fatigue due to work, but the physician soon developed an irresistible craving for the drug and abandoned himself entirely to its toxic influence. He lost his practice, squandered his property, and was brought to the brink of ruin. After four attempts at abstinence within two years he finally succeeded, but still remains an attendant at the asylum where he was treated. In the second case cocaine was used as a substitute for morphine. The delusions and hallucinations characteristic of cocaine delirium developed to a marked extent in this case. At one period the patient used 60 grains of cocaine hypodermatically per day. Ineffectual attempts had been made to discontinue its use, but he finally died from tetanus after injury from stepping on a fork. A case of mixed addiction — morphine and cocaine—is also reported by Laury, the habit for the latter drug having been acquired by its use as a substitute for the former. The effects were of the most disastrous character, and Laury regards cocaine as a toxic agent far more formidable than morphine on account of the rapidity and intensity with which the sensory, motor, and intellectual derangements develop under its use.

Investigations on animals have shown that in chronic cases of cocaine intoxication there is a marked hyperemic condition of the central nervous system which presents a contrast to the other organs which are anemic. Albuminoid degeneration is especially marked in the ganglionic cells of the spinal cord and the nerve-cells of the heart ganglia; it is present also, but to a

less marked degree, in the muscular fibers of the heart, in the ganglionic cells of the medulla oblongata, and in the hepatic cells. In these last three is found an accumulation of glycogen. In chronic poisoning the degenerative processes are found to have advanced further in the cells of the spinal cord and medulla, minute cavities, atrophy, and hyaline degeneration being noted. In the heart there is fatty degeneration of the muscular tissue; in its nerve ganglia there is fatty degeneration, minute cavities and simple atrophy; and in the liver, atrophy of the hepatic cells is present. The vascular system is most affected in the spinal cord, there being cellular proliferation and hyaline degeneration of the coats. In the heart and liver an atrophic condition of the tissues is found, also a swelling of the endothelium of the capillaries of the cardiac ganglia.

In the majority of cases in which the cocaine habit is established a prescription of the physician is responsible for the evils which result. When such a remedy is placed in the hands of a patient for an ordinary coryza, hay-fever, and many other conditions in which there is transient or only apparent benefit from its use, the habit is easily contracted, and many druggists, unfortunately, are prepared to supply all of the deadly drug that the patient may demand. In view of these considerations, the rule has a substantial foundation that cocaine should never, under any circumstances, be prescribed for the patient's use, and above all, for the nasal cavities, where the application is made with such facility and from which many of the most severe cases have resulted.

A peculiar phase of the cocaine habit which has developed in New Orleans and in a number of other cities in the South is the contraction of this habit by the negroes. The extent to which this has spread can be easily verified by druggists and in police circles. It is not used in the manner generally prescribed, but a few crystals of the drug are snuffed into the nostrils, not on account of its contractile effects on the nasal

mucosa, as is usually the origin of this habit in the Caucasian, as the nasal passages of the negro are normally quite patulous, but on account of its exhilarating effects. The physical and mental wrecks which soon result from this vicious habit attest to its pernicious effects.

While admitting the danger and evil results of the abuse of this drug, we should not, on the other hand, go to the extreme in condemning it in its entirety, as has recently been done on several occasions. That this should be the case, however, is not unnatural, being the return swing of the pendulum of the early enthusiasm with regard to it. What is needed is that one should have a proper realization not only of the benefit but also of the danger of its application. The medical profession should be made thoroughly acquainted with the complications which may arise from the use of cocaine, and the evil of placing such an agent in the hands of a patient. The druggist should be compelled to restrict the sale of this as well as of other toxic drugs to the prescription of the physician. As stated before, however, cocaine should never be placed in the hands of the patient under any circumstances, as the habit is so easily acquired. In this manner we may retain the use of a valuable drug, and, by exercising proper care, eliminate its evil effects. — *Medical News.*

THE FIRST QUARTER. This is the title of a volume of short poems by Mrs. Dr. Ruth Ward Kahn, of Leadville, Col. The topics are of Home, Friendship, and Pastoral Scenes, presented in a minor key, in rich poetic dress, with a charming freshness of expression and style. They are dedicated to her husband, Dr. Kahn, an eminent physician of Colorado. This little work is full of promise of larger and better things. The authoress will be heard from in the higher ranges of poetry and song in the future. This work is published by The Editors' Publishing Co., of Cincinnati, Ohio.

COCAINE-INEBRIETY.

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

Superintendent Walnut Lodge Hospital, etc.

The use of cocaine for its effects has increased to such an extent that the *British Medical Journal* calls it the third great scourge of the world, alcohol and opium being the first and second. In this country the increase is apparent from the records of the custom-house. The imports of cocaine in New York from Germany alone last year being valued at $100,000. The estimates of the value of leaves and cocaine at all other ports exceed over $300,000. Some idea of the rapid increase can be had in the fact that in 1894 the value of imported leaves at New York was $14,284, and in 1897 it was $54,122 — an enormous increase beyond all the legitimate requirements of medicine. The reduction in the price of cocaine from $5.00 and $6.00 an ounce to $2.00 has no doubt increased its popularity and sale. Cocaine can be obtained without question in nearly all states and cities of the country, few, if any, restrictions being imposed upon its sale. Its use is confined to dentists in operations on the mouth, and local surgery, and cases in which anesthesia is required in local areas.

Inquiry indicates that its strictly medical use has not increased very rapidly, owing to its variable effects and the want of knowledge of its action on the nerves and cells. Hence it is clear that the increased demand represents its illegitimate use. This is sustained by the increased frequency of cocaine cases in hospitals, asylums and courts of law. These cases are so numerous that cocaine-inebriety has become a

veritable disease which can be traced and studied the same as any other insanity.

Some general facts can be stated as true in most cases: The cocaine-takers are usually past 30, and most of them have taken alcohol or opium and other drugs for their effects before cocaine was used. Very few persons become cocaine-takers without some previous addiction to drugs of some kind. Many cases of invalids who use bitters and secret drugs for some real or fancied trouble find a panacea in cocaine, and soon become addicted to its use. A much larger proportion of professional men are victims in proportion to other classes. A number of persons begin its use for the relief of diseases of the throat and catarrhal affections; others use it for the depression and nervousness following the addiction to spirits, and to cover up the effects. A few cases have been noted in which neuralgia of the nerves of the teeth and mouth has been relieved by its use and it was continued afterwards. I have never seen a case which could be traced to cocaine used for a surgical operation. A physician's prescription containing cocaine has in some cases been followed by such marked relief as to demand its continuous use. A prescription of cocaine for catarrh became very popular in a village in Connecticut; at one time nearly 100 persons were using it. Then its contents became known and the use was forbidden. At least four of these persons became habitués. The persons who used it were employed in a factory where catarrh from dust was common. Persons of the tramp and low criminal classes who use this drug are increasing in many of the cities. The cheapness and ease with which the drug can be obtained, and the relief of pain and discomfort which follows its use makes it very popular among this class. The exhilaration and satisfaction with quiet, dreamy sleep, which follows its use, is much sought after. Later, when the means of procuring the drug becomes exhausted, they become petty thieves and criminals in their efforts to get it. In the station-house

and jails they manifest symptoms of great exhaustion and extreme nervousness, for which opium may be sparingly used. The sentence is usually not long enough to be followed by any full restoration, and when discharged, the drug is taken up again. Later they receive a longer sentence and usually die in prison. They are the deliriously excited prisoners, not combative, but talkative, full of delusions, of exaltation with fear and dread of imaginary objects. The real cause of these conditions is usually unknown and the diagnosis of alcoholism or opium is given.

Patients come to the general practitioner with a history of alcoholic drinking in a mild form, who are strangely delirious, with unusual hallucinations, which vary widely and unlike anything laid down in the books. Large doses of opium and bromides are given with good results. These cases are always obscure in the history of the use of alcohol, and they appear as anomalous, but are in reality due to concealed cocaine addiction. The following case is an example:

B., a club-man of wealth and prominence, known to drink wine at the table, and occasionally to excess, became deliriously exhilarated, boasting of his strength of both body and mind. Later he showed great depression, with hallucinations of the skin, various insects and animals seeming to run up and down his body. His pupils were widely dilated, and his body was covered with a clammy sweat. The diagnosis was alcoholism. The second attack was preceded by similar symptoms, only varying with a short cataleptic condition and no marked delusions, only extreme talkativeness. He was placed under my care, and the real cause, cocaine, discovered.

Another case under medical care for two years, supposed to be due to alcohol, although manifesting many dreamy exhilarations, with delusions of satisfaction and strength, finally ended with discovery of the same cause. The peculiarity of cocaine is, that it produces apparently nothing at first but a slight degree of exaltation and sense of comfort, and agreeable

mental and bodily activity. There is no mental confusion, and the only symptom is good humor and general satisfaction. The hypnotic effects, when they appear, are not prominent, and there is no headache, nausea, or confusion the next day. After a time the mental exaltation merges into slight hallucinations and delusions. The senses seem to be very acute, and thought flows with great rapidity, and impressions of the fear of danger begin — not sharply defined, as in the delirium from alcohol, but vague and confused in form and object. Later, these increase and take on some form peculiar to the case. Thus, in one instance, there were fears of contamination and disease, with skin hallucinations; or fears of intrigues and losses from others; or, again, sudden intense delirium of love, hate, revenge, suspicious credulity, assertiveness, or indecisiveness of thought. All this is associated with marked physical changes of the skin, eyes, heart, and digestion, with profuse sweating, and attacks of dyspnea, and often with tonic and clonic convulsions, and great feebleness. These general symptoms may vary according to the case and complications with morphine and alcohol, or other drugs. But the peculiar mental exaltation and delusion of strength are marked in all cases. A noted lawyer became very diffusive in his conversation and pleas to the jury, going on without point or conclusion, almost indefinitely. He expressed himself clearly, yet there was no end to his ideas and conclusions. This mental peculiarity was due to cocaine, which he was secretly using.

Another man, who was previously burdened with care and continuous worriment, became suddenly happy and self-satisfied with the surroundings and himself. He looked down upon all his former troubles and appeared indifferent and calm when he had been agitated before. Later he was found to be using cocaine. A teacher of medicine will occasionally lose all sense of proportion in his lectures and spend the hour on some insignificant part of the subject, or digress to another

topic, never realizing this change. He is a cocaine-taker and this mental change is a clear symptom. This teacher will at times use cocaine before his lecture, and after a time a certain exalted diffusiveness of language becomes apparent. As in other cases of narcotic addiction, the personal consciousness of his condition is lost, and he cannot realize that he is changed in manner and expression of thought. He seems to himself to be at his best, and possess the fullest control of his faculties with increased capacity for all mental and muscular activity. Later, when he has reached chronic stages, the most imbecile efforts will be made to conceal his condition. Foolish denials and ingenious efforts to explain his present state as due to other causes are common. His neglected personal appearance is very apparent, and this, with the extreme emotional changes from quiet satisfaction and happiness to restlessness with dread and anguish, are almost pathognomonic symptoms. These cases become suicidal from morphine, chloroform, gas, or anything that will produce sudden oblivion. Often acute inflammatory affections terminate life. Dementia with confusional insanity occur, and the case is buried in an insane asylum. Of the real causes cocaine is not mentioned, and alcohol, morphine, and general dissipation are most frequently put down as the causes.

Although considerable literature has appeared concerning cocaine, its physiological action is practically unknown. As an analgesic, it is uniform in its action, and this is due to the suspension of the physiologic functions of the sensory cells which it comes in contact with. Beyond this, it is an excitant of the cerebro-spinal axis, later it has a peculiar action on the encephalon, manifest in a wide range of psychical phenomena. Beyond this a great variety of widely variable symptoms appear. In some cases all the intellectual faculties are excited to the highest degree. In others a profound lowering of the senses and functional activities occur. Morphine-takers can use large quantities of cocaine without any bad symptoms.

Alcoholics are also able to bear large doses without danger. Not unfrequently the excitement caused by cocaine goes on to convulsions and death. Sometimes its action is localized to one part of the cerebro-spinal axis and then to another. In some case well-marked cerebral anemia appears and for a time is alarming, but soon passes away. Few cases of death are recorded from an overdose, as they are comparatively rare, and the poisonous states which follow usually give way to appropriate remedies. Small doses frequently given are more readily absorbed than large doses. Habitués always use weak solutions, the effects being more pleasing with less excitation. The morphine and alcoholic inebriates very soon acquire a certain tolerance to large doses taken at once. The cocaine-user takes large quantities but in small doses frequently repeated. He becomes frightened at the effects of large doses, and when he cannot get the effects from small (to him safe) doses, he resorts to alcohol, morphine, or chloral. In many cases memories of the delusions and hallucinations are so vivid and distressing that other narcotics are used to prevent their recurrence. In other cases the recollection is very confused and vague, and strong suspicions fill the mind that the real condition is grossly exaggerated by the friends for some deterring effect. In common with opium and alcoholics, there is moral paralysis, untruthfulness, and low cunning in order to conceal and explain the condition by other than the real causes. The prognosis is always doubtful when the addiction has continued any length of time. The temporary removal of the drug and restoration of the case occurs in nearly all cases, but unless the most radical changes of life and living are made, and the patient gives unusual care to his health, and to the avoidance of every source of exhaustion of nerve and brain, and every condition of peril to his health, the danger of relapse is very prominent. The treatment must be pursued on general principles. Isolation and removal of all exciting causes and building up of the brain and nervous system comprise the

general principles. In every case certain special localized means are essential to meet the various conditions present. The sudden removal of the drug is the first step, with sharp elimination through the skin, kidneys, and bowels. The continuous activity of the skin from hot air, sweating and baths, is essential, and this should be kept up for a long time. Anemia or hyperemia, with insomnia, require special medication, usually foods and tonics are sufficient. Narcotics are dangerous and are seldom of any value. Iron compounds for a brief time work well. Infusion of cinchona bark is very valuable, and can be used for a long time. Arsenic appears to be the best of all the mineral tonics, and acids are also excellent. The hydrochloric acid and phosphates are the best, soda and magnesia are very useful in the salt or combined in some natural water. Strychnine is uncertain and cannot be used in many cases, nux vomica may be used in small doses with good results.

Among foods, meats are to be used sparingly at first; as the case improves their use may be increased. A diet of eggs, milk and grains with fruits is best. The patient should remain in bed or reclining at full length most of the time during active treatment. Muscular exercise by massage for an hour a day should be given. If this is not practicable, walking in the open air with an attendant or a few moments' exercise with ropes and pulleys will aid in reducing the muscular nervousness.

Exercise and massage depend for their value largely on the adaptability of the case to bear it. In a brain-worker less exercise or massage is required than in a muscle-worker, or one who is out in the open air much of the time. In an over-fed, plethoric person, exercise is better borne and followed by greater relief than in spare ones. Most cases should remain in bed the first week of treatment and then begin to sit up and take mild exercise. Daily baths should be continued with regularity and care. Persistent watchfulness over all acts of

the patient should be kept up for six or eight weeks, then a rigid course of living and diet should be arranged, and its importance insisted upon, for a long period to come. All these cases should be under medical care and control for a long time before full recovery can be expected.

THE POWER OF RESISTANCE IN THE RABBIT SOBER AND THE RABBIT DRUNK.

Dr. Thomas, of Strasburg, published some years ago the results of giving rabbits alcohol and then inoculating them with comma bacilli. He found that the quantity required to kill an alcoholic rabbit was one-sixth of that necessary to finish a *sober* rabbit. In what manner the bactericidal resistance of the blood was lessened naturally led Dr. Thomas to undertake some experiments to determine the action of narcotics upon the constituents of the blood. These he has lately published in the *Archiv für Experimentelle Pathologie* of March 17, 1898.

In acute alcoholic intoxication the alkalescence of the blood was reduced in some cases one-half. It seems therefore, that during alcohol narcosis there is an acid which supplants to a greater or lesser extent the CO_2. The author believes it to be a volatile fatty acid; its exact nature he could not determine. In some cases the red blood-corpuscles were diminished, but this was not a constant factor. After subcutaneous injections of ether, morphine, and chloroform the amount of oxygen in the blood was lessened, but the CO_2 and alkalescence remained very little unchanged. After inhalation of ether the CO_2 was increased, the oxygen lessened, and the alkalescence not changed; while the number of red blood-corpuscles was apparently doubled. The explanation is that the supply of air was shut off by the inhalation mask and the arterial blood became venous and thickened in character. — *Medical Age.*

LAVAGE OF THE ORGANISM IN ACUTE COCAINE POISONING.

Experimental Researches of Dr. Carlo Bozza, of the University of Naples.

A new general method of cure for all poisonings can be found in lavage of the organism, as proposed by Sanquirico. The latter — starting from the known canon of the pathology of the blood, "that the organism in normal conditions is endowed with a regulating power so quick and certain as to tend always, in qualitative and quantitative changes of the blood, to resume its original physiological condition" by means of the wonderful harmonious mechanism of hæmatopoiesis and secretion—endeavored to utilize the fact of the ready elimination of neutral liquids injected into the blood, with the object of freeing it mechanically from heterogeneous substances which might injure it.

This process, consequently, has nothing to do with the experiments of Landerer, who introduced into animals poisoned by chloral, etc., from whom a definite quantity of blood had been taken by blood-letting, an equal quantity of solution of chloride of sodium. The principal aim of Landerer was that of making the heart more active and also that of having a more rapid reformation of the blood.

Lavage of the organism, as I have practised it in my experiments, rests on the known fact that the vascular tree has the property of allowing itself to be distended, without experiencing any local or general change, by liquids injected in considerable quantities; and it proposes to quickly eliminate from the organism poisonous substances introduced in fatal quan-

tities, by means of the secretory hyper-activity induced by the increased arterial pressure.

From what we have said one can infer that the advantages to be derived from lavage of the organism must, without doubt, be ascribed:

1. To the greater dilution undergone in the blood by the poisonous substance, which therefore reaches, in a smaller quantity, the anatomical element, upon which it exerts its elective action.

2. To the more rapid and certain elimination of the poison produced (*a*) by the gradual increase of the blood pressure, the mass of the blood plasm being increased by the addition of the sodium solution; (*b*) by the greater fluidity of the blood which, (Cohnheim) while it facilitates renal filtration, permits the heart to overcome more easily the resistance of the vessel walls.

3. To the lessened absorption of the substance administered, on account of the increase of the intravascular pressure, since, as we know, the fullness of the circulatory system is an obstacle to absorption.

It seems evident, therefore, that lavage of the organism, resting specially on the strength of the cardiac contractions, and upon perfect renal functions, but also on the sweat secretion, can be assisted, whenever possible, by the administration of digitalis and pilocarpine.

Sanquirico, in a series of experiments extended over many years, tried with varying results lavage of the organism in many poisonings, by strychnine, alcohol, chloral, nitrate of aconitine, urethane, caffeine.

Continuing such experiments, I have tried to find how far lavage of the organism can avail against acute cocaine poisoning, which is met with not very rarely since this alkaloid has been used as an anæsthetic in minor surgery.

As a neutral liquid I have used a physiological solution of sodium chloride, which has the advantage of having no solvent action on the red corpuscles, and hence does not produce

hæmoglobinuria. For instrument, I have not been able to use the common syringes, because, having at times to introduce large quantities of liquid, I should have to make too many punctures. This would be more dangerous when compelled to make intravenous injections. I have used, therefore, Rogers' apparatus for intravenous injections, because it permits the gradual and regular entry of the liquid into the vein at a known pressure, without any danger of the entrance of air. The needle and all the apparatus were diligently sterilized and the liquid filtered and sterilized. I made these experiments with dogs, which were more available than other animals for my purpose. I have been able to prove that young and lively dogs, in whom consequently the cerebrospinal system is more easily excitable, are more susceptible to the toxic action of cocaine.

Starting from these data I began to try the effect of lavage as caused by abundant hypodermoclysis of artificial serum in an animal poison by the minimum fatal dose of cocaine, and was able to see that by lavage, not only did the symptoms of poisoning become less severe, but also that the state of stupefaction which was wont to remain in the animals after the convulsive stage and which preceded the period of depression and death, was eliminated.

(Then follows a series of six experiments with different kinds of dogs, a record of their condition after the hypodermic injection of varying doses of cocaine, also of their condition at different periods after the injection of the sodium solution. I simply give one of these experiments in this translation.

Experiment 1. — Young and lively bitch, with red hair. Weight, 6 kilos.

2.15 p. m. Hypodermic injection of 18 centigr. of cocaine.

2.40 p. m. Up to this time the animal has remained crouching on the ground. It rises suddenly and shows rest-

lessness. Hypodermic injection of 100 grammes of sodium solution; after which there is less restlessness. Mydriasis.

3.15 p. m. The typical agitation of cocaine poisoning is now seen. The animal jumps about and executes circular gyrations. Injection of 300 grammes of sodium solution, making the animal quieter.

4 p. m. After a period of quiet the animal again becomes agitated. I make an intraperitoneal injection of 200 grammes of sodium solution, since the extreme compactness of the subcutaneous cellular tissue makes absorption so slow.

The animal survived. Altogether, 600 grammes of sodium solution were injected.)

From these experiments I can make the following deductions:

(1) While the minimum fatal dose of cocaine muriate administered hypodermically is 0.025 gr. per kgr., one can inject, of the same drug, without fatal result—

(*a*) Gr. 0.03, if we follow the said injection with hypodermoclysis;

(*b*) and 0.035 gr. per kgr. if we follow the said injection with lavage of the organism by the injection of the physiological solution of sodium chloride.

(2) While the minimum fatal dose of cocaine muriate administered fasting by the alimentary canal is 3½ centigr. per kgr., one can, with lavage of the organism, administer as much as 5½ centigr. per kgr. without fatal result.

The maximum limit of tolerability could be much greater if the toxic substance were given in broken doses, as Sanquirico did, rather than in a single dose; but I refrained from experiments by that method, because poisoning by cocaine, whether accidental or with criminal or suicidal intent, rarely takes place in broken doses. — *Translated for The Canadian Practitioner, from Giornale Internaz, delle Scienze Medicne, February, 1898, by Dr. Harley Smith.*

SHOULD ALCOHOL BE USED BY MINISTERS AND OTHER HARD WORKERS.*

By German Sims Woodhead, M.D.

Director of Research Laboratories of Royal College of Physicians and Surgeons—President of the British Medical Temperance Association.

When you paid me the compliment of asking me to contribute a paper on the use of alcohol, especially on the medical aspects of the question, in connection with its bearing upon ministers and other hard workers in Christian spheres of usefulness, and upon those who suffer from brain fag and wear and tear, I at once came to the conclusion, from the wording of your invitation, that you wished me to set forth such views as I may hold as fairly and dispassionately, but also as *forcibly*, as possible.

Since your invitation was sent and received, we have had brought before us one of the most striking object lessons ever furnished on the estimation in which alcohol is held by observant and thoughtful men. You are most of you aware that the Sirdar, Sir Herbert Kitchener, and General Gatacre, in their advance up the Nile, have strictly forbidden the supply of alcoholic liquors to any of the troops under their command. We learn that they took this step on two grounds. First, on the ground that, from long experience, they were convinced that the physical condition of the troops would, under these conditions, be enormously improved, and the men would have much greater staying power, while their dash, determination, and steadiness would also be increased. The second ground

* Being a paper prepared for, and read at, the Annual Members' Meeting of the Baptist Total Abstinence Association, on April 27, 1898.

appears to have been that the mental and moral stamina of the troops would be preserved in a far greater degree than could possibly be the case if alcohol was served out. The result has been that the health, spirits, and conduct of the troops have been the admiration of all those who have had any dealings with them, and this experiment on a large scale has been an unqualified success.

Hard work and excitement, it has been proved, can, even under most unfavorable conditions, be borne far better by men to whom no alcohol is served out than by men of whose rations alcohol forms a part. Does not such an experiment suggest the thought that as temporal armies, to carry out their fighting to best advantage, must discontinue the use of alcohol, and much more is it necessary for those who are engaged in the greater fight to carry on their work without having recourse to alcohol? The very qualities of the good soldier are those required by a minister of the Gospel, and I may here, with your permission, mention some of these qualities, and then give a short account of the effect that the consumption of even small quantities of alcohol will have upon them, because, after all, we must look to this side of the question in the first instance, and then consider the medical aspect of the question as an addendum.

Who that has been a minister, or who has had ministers among his friends, does not know that you, of all men, are called upon to make great and long-continued physical and mental efforts? What men are called upon more suddenly to make short spurts, if I may so say, of additional effort; to weigh carefully and balance evidence rapidly; to judge quickly but soundly? Who have to collect and sift evidence more carefully, and often under most disadvantageous conditions? Acute and rapid perception, well-considered judgment, rapid action, long-sustained effort, intellectual acuteness, physical stamina, moral perception, and spiritual force and activity, are the essential qualifications of every minister of the gospel, who

is to do the work of his Master — that you know far better than I can even attempt to state.

But I have something to say on the subject of the retention of these powers, and of alcohol as an agent which may bring about their deterioration. Let us take, first, the physical basis of our frame, without which it would be impossible to carry on work. All physical effort is made through the contraction of our muscles, which are stimulated to contract by a delicate nervous apparatus consisting of the nerves — which we may look upon as telegraph wires — and the brain, which may be looked upon as a kind of central battery, in which force is generated.

A healthy man, with well aerated blood, taking good nourishing food, and giving every part of his body a certain amount of rest, is able to accomplish a definite amount of work, the maximum being attained when the work can be done at regular intervals, and in a definite period. No amount of alcohol, however given, can increase the amount of work done in that same period without giving rise to very serious disturbances in some part or other of the body; indeed, the amount of work is never increased, as any temporary excitement is invariably followed by depression of such nature, that the increase of work supposed to be done during the period of excitation is far more than counterbalanced by the diminution in the amount of work done during the period of depression.

After careful examination of the whole question, physiologists — and among physiologists I include those who maintain that alcohol may be useful, as well as those who hold that it is harmful — have come to the conclusion that the principal action of alcohol is to blunt sensation, and to remove what we may call the power of inhibition by blunting the higher centers in the brain.

An illustration I once heard given by Professor Charteris, of Edinburgh, will perhaps convey my meaning better than any long description. He said he was told that the use of

danger. The knowledge of this should cause one to make the same preparations in administering cocaine as when a general anesthetic is used, as the difference of danger is but relative. The agents for this purpose which will be found most useful are nitrite of amyl, nitroglycerine, atropine, ammonia, and digitalis. The most rapid method of relief, and one most easily applied, is the horizontal position, and this should be resorted to at the first appearance of toxic symptoms.

The toxic effects vary according to the amount of cocaine used and the susceptibility or idiosyncrasy of the patient, the latter, as in the case of morphine, being the most serious consideration in the application of this drug, as it sometimes develops in patients in whom it is least expected. In all these cases the element of fear should be considered, with its depressing effects upon the heart and circulation, thus predisposing the patient to the toxic effects. The application of cocaine should, therefore, be tentative, this applying especially to hypodermatic injections in which the action of the drug cannot be controlled when once it has left the syringe. On this account, also, cocaine should never be used in the nasal passages in the form of a spray; it should be applied by means of a small pledget of cotton so that the administration can be discontinued at the appearance of the first toxic symptoms.

Among the symptoms due to cocaine poisoning are extreme pallor, profuse perspiration, unconsciousness; frequent, feeble, irregular and intermittent pulse; dizziness, nausea, in some cases great agitation, and occasionally loquacity; more rarely, blindness, deafness, lividity, muscular rigidity, a feeling of impending death, convulsive twitchings, paralysis, and convulsive or suspended respiration. The earliest symptoms should be carefully noted and counteracting measures at once instituted. When the symptoms are sufficiently urgent the administration of medicines by the stomach should not be relied upon, but the more rapid and efficacious method of hypodermatic injections at once resorted to. The majority of

alcohol was conducive to sociability and good fellowship. For a time he believed that this was the case, but on coming to observe the matter more carefully he found that the sociability was of a very spurious character. As the evening wore on, as he was making one of his observations, he noted that under the influence of alcohol the number of talkers gradually increased, but that the number of listeners diminished in the same proportion, until eventually the "conversation" consisted of noisy iteration and reiteration, nobody listening — or listening very intermittently — to anything that was going on, and this in a company of men, every one of whom would have considered himself insulted had it been suggested that he was under the influence of alcohol. In this illustration, or rather example, the fact is brought out that alcohol dulls the senses, for here we have a roomful of men talking excitedly, yet scarcely one of them hearing anything that is going on — each one of them has had his power of receiving impressions from without considerably dulled or blunted. An explosion or any loud sound would still be heard, but sounds which at the beginning of the evening would be promptly responded to at the end make little or no impression.

It is a matter of common knowledge, however, that the blunting of sensibility by alcohol may go on to such a point that a man under the deep influence of alcohol may become insensible to the loudest noises and even to the most active stimulation of the sensory nerves; and you may run pins into a drunken man, and deep wounds may be made into his flesh without producing any pain. This fact, indeed, was taken advantage of by surgeons in bygone days, who, before performing operations which were likely to be attended with great pain, often put their patients deeply under the influence of alcohol in order to diminish or do away with the pain of the operation. Dr. Charteris' natural experiment affords evidence of further changes brought about by the action of alcohol. Voices are raised, owing to the fact that the inhibitory centers

of the brain are becoming gradually weakened, as the result of which the talker has lost control of himself, of his voice, and of his ideas: he not only raises his voice, but he repeats, and repeats the same statement. The idea that was in his brain during the time that he could think consecutively remains there still: it has assumed undue proportions in the uncontrolled brain, and the talker, no doubt, is under the impression that he is giving evidence of his brilliant conversational powers. So generally have the older ideas on conviviality and sociability, and the relation of one to the other, been accepted, that it is only comparatively recently that these "brilliant conversationalists" have had it brought home to them, in some cases very forcibly, that not only had they no grounds for their self-congratulation, but that there has been some reason for the suspicion which now-a-days crops up in their minds, that on the very occasions when they have been congratulating themselves on their conversational powers they were simply making egregious asses of themselves.

Now let us consider the relation of these two special actions of alcohol (taking them as two, although they are really both manifestations of a single kind of action) in relation to the question: Is alcohol of use to the fagged and exhausted pastor in restoring his energies, or in enabling him to carry on his ministerial work? My opinion, and I only advance this opinion for what it is worth — though I must make the proviso that I have made a fairly careful and comprehensive study of the subject — is that the benefits arising from the use of alcohol are so small, and the injury to the individual so great, that leaving out of account the question of expediency and example, ministers, like all other men who are engaged in active work of any kind, can do that work better as total abstainers than they can taking even small quantities of alcohol. In looking at and weighing this question it should be carefully borne in mind that subjective phenomena and sensations are not to be relied upon.

As an example of the ill effects of relying on the feeling of well-being which is induced by the consumption of even small quantities of alcohol, I may draw your attention to what takes place in the case of a man who takes a glass of whisky — say before he goes out from a warm room into the cold night air. He goes out experiencing a glow of warmth, which makes him believe that the spirit that he has taken is, as he terms it, "keeping out the cold." What the spirit is really doing is diminishing sensibility, and so deadening sensation, probably in the nerve centers, or in the nerves themselves, so that the cold is not felt, and therefore precautions are not taken to prevent the loss of heat from the surface of the body. Secondly, the inhibitory action of which we have spoken is removed from the blood vessels which convey the blood to the surface, and these vessels, having lost their guiding reins, as it were, do not react properly under the stimulus of the cold; they remain dilated, and allow of the passage of large quantities of blood to the rapidly-cooling surface, and in this way the whole temperature of the body may be exceedingly rapidly brought down, and chills, colds, and all their attendant evil results, only too frequently ensue. Indeed, given the same conditions in two sets of people, one taking alcohol and the other not, and the difference as regards their susceptibility to chills and colds is most striking, while, as we know, the difference in susceptibility to frost-bite on the one hand, and sunstroke and heat apoplexy on the other, between two such sets of people, is now recognized as being very great indeed. As Dr. Ridge says, "The feelings are no guide at all as to the real effect of alcohol."

There may be a subjective feeling of warmth following its use, but the thermometer gives indications that these feelings are not to be relied upon, as the consumption of even small doses of alcohol invariably leaves the surface temperature, after a very short period, cooler than before the alcohol was given. Dr. Ridge goes on to say, "The feeling of muscular

strength is increased, but the dynamometer proves that muscular contractions are weaker. People imagine that they can do things more quickly, that they are brisker and sharper, but exact measurement proves that they are slower and less acute. Men believe that they are wise and brighter, but their sayings are more automatic and apt to be profane. To quote Dr. Lauder Brunton, 'It produces progressive paralysis of the judgment,' and this begins with the first glass. Men say and do, even after a single glass of drink, what they would not say or do without it, and therefore it clearly affects the brain and diminishes self-control."

It would be possible to elaborate to any extent on the text in these pithy sentences; but I shall merely point out that the old idea, that prolonged physical exertion of a severe character could not be made without the help of alcoholic stimulants, has been exploded by the accounts of the experience of the work done by gangs of navvies, by marching companies of soldiers in times of peace, by a whole army on campaign in trying climates, and by travelers and explorers in all parts of the world. Even the trained athlete, the professional footballer, or the man who is to engage in feats of strength or skill which requires steadiness and accurate power of co-ordination, invariably looks upon abstinence from alcoholic liquors, or from anything but exceedingly small quantities, as essential for the maintenance of his strength and skill for any lengthened period.

What is necessary for the maintenance of the health and perfect condition of the muscles and lower section of the brain and nervous system is of still greater importance where the higher brain centers are involved.

One can readily understand that the animal parts of man, which are first developed, and which are those essential to the continuation of life and movement, should be more stable and less easily affected by poisonous substances (especially those

that have a narcotic effect) than are the more highly developed of man's functions and attributes.

Reasoning in this way we should expect that the most highly specialized characteristics are first impaired, and that the spiritual faculty, if I may so term it, first becomes blunted by the use of alcohol. Following this in rapid succession there is blunting of the moral sense; a slight, though distinctly perceptible, interference with the intellectual faculties, which leads to what we might call blurring of the reasoning power; then follows a distinct diminution in the power of rapidity and accuracy of perception. At none of these stages would a man admit that he was under the influence of alcohol; but these powers are just as assuredly under its influence as are the muscles which can no longer act co-ordinately to enable a man to walk straight, or to perform any manual action requiring dexterity and precision. The finer movements are first lost, and then the coarser movements necessary for locomotion. If the process of poisoning be continued as already mentioned, there comes a time at which there is complete loss of sensation, and we have a breathing body in which blood is circulating, but from which all the higher attributes of even the animal kingdom have been driven out, and from beginning to end the process has been one of blunting or paralysis. It is for this reason that the feelings and opinions of anyone under the influence of alcohol are in no way to be trusted, and the same distrust should be extended to the alcoholic judgment and perception whether moral or intellectual.

So evident are these points, and so fully have they been proved, that I cannot understand how anyone can, as a reasonable individual, make excuses for taking alcohol except on two grounds: the first of these excuses, which is the honest one, is that a man has been brought up to take it, and continues to take it because he likes it; if he acknowledges this, and is prepared to take the consequences, we may have our own opinion as to the policy of such a course, but we can, at any rate, re-

spect the honesty of the excuse. The second is that the doctor has ordered it.

Now, although there may be differences of opinion as to the advisability of giving alcohol so freely as is done at present, there can be no doubt that certain physicians look upon alcohol as a useful medicine. That being the case, as you place yourself in the hands of your doctor, if he orders alcohol, you are under an obligation to take it; but I would ask every man to make two stipulations with his doctor before carrying out his advice. The first of these being that no other drug, no variety of food, and no other method of treatment could, in that doctor's opnion, be relied upon in the particular case to produce the same effect as alcohol. The second stipulation should be that the alcohol, in whatever form prescribed, should be given, and its effects watched, as in the case of the use of any other drug in the pharmacopœia. I venture to say that if these stipulations were always made and carried out, the use of alcohol as a medicine would not be one-thousandth part as great as it is even now, great as has been the revolution in this respect during the last twenty or thirty years.

It would be ludicrous, were it not so pitiable, to see a thin, anæmic woman, who has taken stout for twenty years, in order that she might put on flesh, relying more and more on the use of this beverage as she gets thinner and thinner; to hear a patient in middle life telling you that she has taken claret since she was married to cure headaches that are now of daily occurrence; or an asthmatic patient, who is steadily getting worse, assuring you that glasses of whisky, which are becoming more frequent as years roll on, are the only remedy that afford him any permanent relief. I venture to say that no other drug, or method of treatment, would be continued for the same length of time had it failed so dismally to bring about the desired result.

What, then, is the action of alcohol? I think I can put the answer to this question in a few words. It weighs down

the safety valve. The result of that is, perhaps in the first instance, that a very short spurt at high pressure may be made. We know what happens in the case of a boiler when the safety valve is weighted — the engine may be driven at a high speed for a short space of time. If the boiler be very new and strong, and the loading of the valve be not excessive, the strain on the boiler may not be evident, but every engineer knows that the life of that boiler is shortened. If the boiler be not so new, and has undergone some wear and tear, we get slight springing of the plates, and an escape of steam, and in order to keep up the pressure constant " firing-up " is required; the springing and leakage as time goes on become more and more apparent. The effect in weak, aged, or badly-constructed boilers of weighting the safety-valve is still more disastrous, being usually followed by an explosion.

I would have every man bear in mind that pain, fatigue, and hunger are all of them nature's warnings that medicine, rest, or food, are urgently needed by our economy, and that the symptoms of disease are the mere outward manifestations of deeply-seated disease. Although, in the interest of a patient is is sometimes necessary to treat these symptoms, it is never justifiable to give alcohol for the purpose of deadening the pangs of hunger, or allowing the dulling of the sense of fatigue to take the place of much-needed rest, and anyone who does either of these is just as surely living in a fool's paradise as if he were sitting on the safety-valve of a rickety boiler, under the impression that because he is counteracting the functions of a safety-valve he is doing away with the necessity for its existence.

There are three or four special diseases from which those engaged in active pastoral and intellectual work most frequently suffer. The first of these is dyspepsia, the result of anxiety, of irregular meals, of physical exhaustion, and of prolonged mental effort; a condition in which the digestion goes on irregularly and slowly, and one for which alcohol is fre-

quently taken. Sir William Roberts has pointed out that the effect of alcohol is to weaken, or at any rate to retard, the process of digestion. That being the case it is surely obvious that its use in cases of slow and imperfect digestion can scarcely be recommended. A day in bed is a far more sure alleviator of dyspepsia than any amount of alcohol, and a few days of such treatment followed by a course of regular dieting, rest, and fresh air, will put a patient in a fair way of recovery when alcoholic treatment has utterly failed to produce any good results.

Closely associated with this condition is the clergyman's sore throat, which in most cases must be looked upon as a direct result of a dyspeptic and exhausted condition, though it must be borne in mind that in a few cases organic disease of the larynx or pharynx may be the cause of this condition. Here, also, alcohol is usually of no use, a fact that is coming to be more and more recognized by throat specialists. Brain fag and nervous exhaustion, with their attendant symptoms, are nature's protests, which should never be ignored; they can only be temporarily hidden; are never cured; and are usually intensified by the use of alcohol, for during the temporary dulling of sensation the patient is encouraged, by the feeling of well-being so obtained, to draw upon his already scanty resources, and to dissipate his small capital of nerve force, which should be carefully husbanded for the purpose of supplying the necessary stimulus that every patient requires for his digestive, locomotive, and circulatory apparatus, in order that nutrient materials may be taken in and utilized for the production of fresh tissues and renewed energy. One of the most dangerous phases of the use of alcohol is the production of this feeling of well-being in weakly, dyspeptic, irritable, nervous, or anæmic patients. In consequence of the temporary relief so obtained, the patient developes a craving for alcohol, which in many cases can end only in one way, and, as I felt compelled to tell an assembly of ladies a short time ago,

the very symptoms for the alleviation of which alcohol is usually taken are those, the presence of which renders it exceedingly desirable that alcohol should not be taken.

In heart disease, too, especially when fatty degenerative changes are taking place, alcohol should never be given in more than single doses at considerable intervals, and then only to tide the patient over temporary difficulties. Fatty degeneration is in many cases the direct result of the long-continued use of large doses of alcohol, and when once the process of degeneration has been set up, even small doses appear to exert further injurious effect upon the altered muscle.

One might enumerate a long series of degenerative changes in various organs which may be directly traced, in a large proportion of cases, to the use, or, as some prefer to call it, the abuse of alcohol; but it is only now coming to be recognized that tissues, weakened by whatever cause, are in most cases far more susceptible to this degeneration-producing action of alcohol than are the healthy tissues themselves, and that the higher the development and function of the tissue, the more readily are the functions and structure of the tissue impaired.

To sum up. It is now generally recognized that children should never take alcohol, which, according to the highest authorities, exerts an exceedingly deleterious action on rapidly-growing tissues, interfering with their nutrition, and preventing the development of their proper function. It is also acknowledged that healthy adults do not need alcohol at any time, or in any form; indeed, it has been proved that even healthy people taking alcohol have their power of resisting disease of various kinds very materially diminished in the process. Invalids, as I have already tried to insist, in most cases, receive no benefit, but actual harm, both directly and indirectly, physically and morally, from the use of this one-time panacea; while in old age, when the tissues are on the down grade, and are subject to various degenerations, alcohol, in most cases, merely accelerates the process of decay, though,

in some cases, its use encourages, by its deadening power, a man to over-exert himself, and to throw a strain upon his heart, or upon his blood-vessels such as they are not able to bear, with such disastrous results as have come within the range of the experience of most of us.

I have dealt with this question merely from the physical side, but, disastrous as is the use of alcohol to our physical well-being, the evil wrought by it here is as nothing compared to the moral and intellectual degradation brought about in minds and characters in which the original possibilities were of the very highest type. With that aspect of the question, I must leave you, who are more competent than I can possibly be, to deal.

ALCOHOLISM. — A case of acute alcoholism may at the same time be one of apoplexy. One suffering from an apoplectic attack may have the smell of liquor on his breath and yet not be intoxicated. The breathing in a case of acute alcoholism, while it may be deep and heavy, is not truly sterterous nor of the Cheyne-Stokes variety, and examination will not reveal paralysis of one side of the body. Consciousness may appear to be lost, but it is not absolute, and the patient can generally be aroused, at least for a moment, from his stupor. The pupils are usually equal and dilated. The temperature may be two or three degrees below normal, but it does not show the successive variations of true apoplexy. Southey has recommended the injection into the rectum of a pint and a half of cold water with a tablespoonful of salt dissolved in it, which, in his experience, once restored to consciousness a case of extreme drunkenness. — *Dr. Mill in Text-Book on Nervous Diseases.*

ACQUIRED INSANITY, IN ITS RELATION TO INTEMPERANCE IN ALCOHOL AND NARCOTICS.*

By Brigade Surgeon Lieut.-Colonel R. Pringle, M.D., London, England.

In selecting the above subject for this brief paper, I have been led to do so, owing to the terrible increase of insanity, which appears to have fallen like an epidemic on and around London. This increase cannot be due, to any appreciable extent, to cases becoming public now which a few years ago were privately treated. The period when this explanation would have been accepted is past now, and the cause of this increase must therefore be looked for elsewhere. I have used the word intemperance advisedly, because, where insanity is directly traceable to alcohol or narcotics, it is not caused by the temperate or moderate use of either of these stimulants — no, it is to the intemperate use of these stimulants that the condition I have termed as "acquired insanity" is due; but as this intemperate use of narcotics is a very small factor in the acquired insanity of this country, though very largely so in India, yet as it is with London and its vicinity we have now to deal, we may leave opium, bhang, and other similar narcotics out of the case for the present, and confine our attention and the discussion to acquired insanity in its relation to alcohol, and the discussion may best take the two following lines:

A. To what is it due ?

B. How can it be prevented ?

As regards *A*, the answer appears to me to lie in the fact of the liberty of the subject, being so supported by the civil power

* Read before the Society for the Study of Inebriety, London, July, 1898.

of this country, that it allows a man or a woman so to *continue* in this intemperate indulgence in alcohol, that, while he or she is rapidly reducing himself to the condition of a permanent burden, not as a rule on the family, but the state, as a patient for life in an asylum, with incurable acquired insanity, the family are thrown on the rates for their support, and all guardians who sit on relief committees know what this means. From this another question arises—Are these cases of acquired insanity increased to such an extent that they form a special point in this matter at present? I unhesitatingly answer to this — Yes! The modern mode of life is one of such excitement and anxiety, that alcohol is largely indulged in to drown care and induce oblivion, or else in the case of women to pick them up, after a hard day's work at home duties, or those of maternity, so that in the evening, instead of resting after a hard day's work, they are expected to be able for any additional excitement which may be suggested, and alcohol is had recourse to, to supply the whip to an exhausted system.

Intemperance in alcohol gradually assumes the mastery, and in these periods of excitement, cerebral symptoms and delusions appear, which often alter the whole character of the case, and bring it within the power of the law, unless with these delusions a suicidal tendency manifests itself, when a passing railway train affords the opportunity of self-destruction, just at the moment the desire acquires the mastery over the will. This liberty of the subject in the matter of habitual inebriates, who live and blight the existence of all around, and, it may be, endanger them, also enables them to exist on the borders of criminality, as an absolute nuisance to humanity; and until the public come to view this condition in its proper light, viz., as that in which men or women have, by their own free act and will, as the state credits them with both, when often they have neither, forfeited their claim to the proud heritage of an honorable citizen, "*Civis Romanus Sum*," and have placed themselves in the position of the

beasts which perish, such for instance as a bullock that, on its road to the shambles, driven mad by blows and fright, turns round on its tormentors and hastens its own end by goring or trampling to death those around. Until such a condition of inebriety is viewed as one of public nuisance, and treated accordingly, nothing will be done to check this tide of acquired insanity, which is surrounding London with a cordon not of *de santé*, but of insanity, and filling up all the available space, at a rate, if the truth were told, which compels the authorities to put a check on the admissions, and which turns this current of acquired insanity into the community, where it tends to lower the moral tone of the public, both of the old and young, by accustoming both to sounds and sights which would be prohibited in a menagerie of wild beasts.

There is a factor in the causes of this acquired insanity, which requires a passing notice, and that is the injurious effects produced by some of the substances used in the adulteration of the various preparations of alcohol; and an inquiry here can and should be applied to beer, etc., and the action not concentrated on the excessive introduction into the liquid of the harmless fluid known as common water, while there can be little doubt that the most questionable substances are added for various reasons, but whose presence, to satisfy the court, would involve an outlay in analysis, which would sure to be called in question by the auditor, when an excess of water can be accurately and *cheaply secured* for a conviction.

The question *B* is to a great extent answered in much that has been said before, and which may be summed up in the few words with which I will close. The question is: — How can this acquired insanity, requiring the costly treatment, too often for life, in asylums which may be described as monuments of the lavish expenditure of other people's money, be checked? Answer: — By the compulsory treatment, in its early stages of a disease, which, if left to itself, soon assumes the mastery, and, in doing so, too often ends in a condition of permanent

detention and burden to the state. Not by any means owing, in the majority of these cases to physical weakness, as the removal of the cause in the asylum treatment, and the favorable conditions for physical recuperation to be met with in all well-conducted asylums for the treatment of the insane, soon result in a physical condition, which should be used far more largely than it is now employed, in some way to repay to the public the terrible burden it is on the state, by suitable labor; but, and here lies much of the permanent detention of the case I allude to, some cerebral development of a suicidal or homicidal character, which, in a great majority of cases prevents the medical superintendent from dismissing the patient, owing to the constant fear that a return to the home surroundings, which developed these tendencies, will lead to their re-appearance, and awful consequences may result, when possibly the medical officer may be blamed for giving the case the liberty to resume this dangerous condition. Thus it is that these lunatics, with this acquired lunacy, too often are permanent, and a crop of similar cases gathering outside are left, as I have said, to be nuisances, and a source of danger, it may be, till an act occurs which robs them of their freedom, and it may be makes them prisoners for the Queen's pleasure. But how and when can we hope to see this compulsory treatment adopted in the early stage of those who are rapidly lapsing into this form of acquired insanity? Not until the public sentiment has undergone such a change that it will view inebriety as a condition of danger to the public health and morals, so great that it will take steps to stamp it out, if need, by segregation, which, as a commencement, will remove the cause of the condition, and this can be carried out as Her Majesty's total abstinence societies, known as prisons, have amply proved can be done, without the slightest risk to life or mind; indeed, with marked benefit to both.

THE INSANITIES OF INEBRIETY FROM THE LEGISLATIVE AND MEDICO-LEGAL STANDPOINT.*

By J. F. Sutherland, M.D.,
Deputy Commissioner in Lunacy for Scotland.

Inebriety may be reckoned a most potent factor for evil in our social organization, as evidenced by insanity, degeneracy, delinquency, disease, crime, poverty, domestic unhappiness, and social disorder, far reaching in their character. After heredity, and falling little short of it, it is the most powerful agent in the production of insanity and imbecility, accounting approximately and indirectly for from 20 to 25 per cent. of those who pass into asylums, and for a deal of insanity unknown to the local or central authorities. There can be little question that many a case of predisposition to insanity would have lain dormant were it not for the advent of inebriety, and that many of the nervous diseases incidental to the wear and tear of modern life might have been cured, alleviated, or remained *in statu quo*, but for the same cause. Some may think the estimate of 25 per cent. too high, but it would be much higher were I to include as insane those who are the victims of dipsomania, *mania a potu*, and delirium tremens, and possibly reach 30 per cent. One may gauge the victims of delirium tremens from the number who die from this disease. Last year the Registrar-General put the deaths at 41, and these presumably do not take cognizance of those who die of inter-current affections. Taking 25 as a common mul-

* Read before the British Medical Association meeting, July, 1898.

tiple, the number who had the disease and did not succumb must have been about 1,000; and there can be no doubt the number of dipsomaniacs in Scotland reaches at least four figures. In 1873 a bill, which miscarried, followed the Dalrymple report of 1872, and matters slumbered till 1875, when at the last meeting of the British Medical Association in this city, a resolution calling for urgent legislation was passed. We cannot but approve warmly of the bill of the Home Secretary dealing with the police inebriates, and expressing the hope that no time will be lost in the effort to secure much-needed legislation for the non-criminal inebriates, whose case and condition, although not productive of the same social disorder, is as clamant as the other, and productive relatively and absolutely of more widespread misery.

In 1878, Sir Charles Cameron, Bart, M.P., introduced a bill which, before its passage through Parliament, was shorn of its most valuable clause — the compulsory one. In the interval there has been great activity among sociologists, psychologists, and jurists, to bring about more rational methods of treatment, and to obtain the much-needed compulsion. The bill of this session, backed by the Home Secretary (Sir M. White Ridley), following on the reports of the English and Scottish Departmental Committees of 1892 and 1895, secures the former for the police or quasi-criminal inebriate, whose numbers in Scotland may be computed at 1,200. If I may venture from my knowledge of the problem in this and other countries, and the laws which have been enforced to meet it, to suggest one direction in which the bill may be improved and strengthened, it is this, that in addition to depriving the police inebriate of his liberty for two years, something should be done to protect him by a clause prohibiting the vendor of alcohol from knowingly supplying drink (1) to certified inebriates who are put under recognizances and not yet deprived of liberty; (2) to certified inebriates on probation; (3) to certified inebriates whether discharged on probation or not for a

period of three years thereafter. Provision would likewise require to be made making it an offense for an intermediary knowingly to do for the inebriate what he could not do for himself. Of course, it will be said such legislation would be difficult to apply. My answer to this is, that it works fairly well elsewhere, and the mere fact that there is such a law in existence would have a salutary effect, even though its success in large centers of population might not be striking or encouraging.

It could be worked in Scotland successfully; in 155 towns with a population under 10,000, the aggregate population of which is 768,000; in 625 villages, the aggregate population of which is 465,800; and in the rural districts, with a population of 928,500 — or, in all, a total population exceeding 2,000,000. I admit there would be considerable difficulties in making it to operate effectively in the 30 towns with populations exceeding 10,000, having an aggregate population of 1,863,300; and there is also to be borne in mind this, that three-fourths, at least, of the inebriates are to be found in the latter community, that is, in the great industrial centers. Such a proposal as I make is not new even in our laws. An analogue is to be found in the Habitual Criminals Act, Section X, which forbids the vendor of liquors supplying those to whom this act applies, a proportion of whom are addicted to inebriety.

Consider, for one moment, what are the prospects of many after two years of enforced abstinence, and you must be satisfied something in the direction indicated should be done. Some of them are coming back to contaminating environments, to abodes of wretchedness and squalor, with little or no hope, and with little or no future before them. It is not merely a question of lessened will power. They have, on discharge, to face a condition of things under which stronger and more favored persons might bend. The number (rough approximate) of the non-criminal inebriates in Scotland may

safely be estimated at 2,350, or 1 to 1,800 of the population. The criminal inebriates I put at 1,200. Compared with the lunacy of Scotland, it is about one-fourth. The distribution of insanity in Scotland is in striking contrast to that of inebriety, and this difference is accentuated when one reflects that while inebriety is a main factor in the production of insanity in industrial centres, it is one of practically no moment in the Highlands and Islands. There is, owing to the prevalence of insanity everywhere, more of uniformity in town and country in its distribution. There are differences in the insanity rate which can, on economic and other grounds, be explained away, more or less. But as indicated, the inebriety is confined to certain areas. The number of non-criminal inebriates is much greater than the other, but then they are drawn from a vastly larger section of the population.

My investigations into the problem, extending over many years, lead me to the conclusion that inebriety, whether criminal or non-criminal, is a disease or vice, or both; for the vice long indulged ultimately ends in disease, and is, in the main, like insomnia, neurasthenia, neuralgia, and hysteria, met with in large centers of population, and presumably in great measure due to unhygienic and uncomfortable surroundings, to be facilities for illicit sale, to vicious and contaminating environments, to customs and habits long practiced in certain strata of society, to vocations implying hard, unremitting, and it may be uncongenial toil; and to the worries, struggles, and disappointments incidental to all such communities.

Of the 2,300, something like 1,600, or 69 per cent. of the whole, will be found in the eight large cities and burghs with 42 per cent. of the population of Scotland, while 700, or 31 per cent., may be looked for in the small towns, villages, and rural districts with 58 per cent. of the population. The ratio in the former is 1 to 1,000, in the latter 1 to 3,200. The ratio of the Highland counties is 1 to 5,000 of population, of the Border counties 1 to 3,500, of the Aberdeen group on the

northeastern littoral 1 to 3,000, and for the central industrial counties 1 to 1,400. The towns in each county really govern the percentages, and thus it is that in several extensive districts of counties there is no inebriety except what is imported from England and from the south and west of Scotland.

For the benefit of the non-police inebriates, Lord Herschell three years ago introduced a bill into the House of Lords. The court, under the bill in England, was to be the high court and the county court, with the right of appeal from the latter to the high court: in Scotland, a judge of the high court of judiciary or the sheriff. A jury was not mentioned in the bill, and it was alleged that a door was being thrown open for what the French call *chantage*, which, I believe, is something not much different from blackmailing.

It is said that the habitual inebriate is violating no law of the land. True, but are you justified in allowing him to go on until he commits a crime of the first magnitude, which many of them do, and many more by the merest accident do not do? If the authorities or citizens know of an alleged lunatic threatening danger to the lieges, they do not, as a rule, wait until he commits a homicide before putting in force Section XV of the Lunacy Act of 1862.

In regard to this far-reaching question, to assume the *non possumus* and to say that it is beyond the wit of man to devise a scheme adequately safe-guarding the rights and liberty of the subject, and as adequately as many of our present civil and criminal statutes which break in upon individual liberty, is unworthy of our race and of our age. The liberty of the subject has, with a few, become a fetish. A law which will prevent and lessen the physical and moral degradation of the individual, the wreckage of family life, and, what is a disgrace both to the community and to the commonwealth, can in no reasonable sense be considered an invasion of liberty.

The bill of 1895 could have been amended to meet the most exacting of the advocates of the liberty of the subject.

The frame-work was sound. If a judge is not to be trusted, then for safety, by all means, concede a jury with a right of appeal. First of all, it is not proposed to deal with any but those whose drunkenness is notorious, whose life and conduct is an outrage to decency, offensive to society, costly to the state, and productive of much and untold domestic unhappiness. Analogues for legislation with modifications suitable to the case are to be found in our lunacy laws. If a lunatic is found "charged with an offense inferring danger to the lieges or offensive to public decency," relatives, neighbors, or the police may interpose with the result that the public prosecutor or inspector of poor intervenes and practically the lunatic has a public trial, for he is present in person and may be represented by an agent, and he may take part in the proceedings and examine the witnesses. Similarly, a justiciary judge and a jury, or a sheriff and a jury, or a judge, aided by expert assessors (this already finds a place in our judicial system) as the inebriate may elect, who would take evidence on oath, as the inebriate may elect, might hold a public or private inquiry, likewise as the inebriate might elect. The trial would only proceed if the public prosecutor, after taking precognitions from relatives, neighbors, medical men, the police and others, believed there was a *prima facie* case for interference. For all reasons the public prosecutor is the official to lay the case before a court, not least that no action would lie against him in the discharge of his duties. Or the inebriate might have the privilege of chancery lunatics in England. A petition would be served on the inebriate, and he or she would be given fourteen days to decide whether or not to demand a jury. If a lunatic does not seek a jury, the inquiry is held before the master in lunacy; if he does, the lords justices appoint a visitor to see whether he or she is capable of demanding a jury, and on that report a jury is conceded or refused.

It is difficult to see where the infringement of the liberty of the subject comes in. The present voluntary system of en-

tering retreats would continue, and the French system of *conseil de famille* might be introduced to our legislation as something midway between voluntary submission and compulsion. In the mode of trial suggested, there is not anything approaching the simple and uncomplicated procedure applied to ordinary lunatics who are not seen by the sheriff before committal on the strength of two medical certificates. But before the special procedure is put in force the inebriate would have the option of the voluntary entry or the *conseil de famille*, and he would have, if possessed of estate, to submit to the appointment of a curator (not a relative) in the case of "payday" drunkards to the sequestration of wages to the behoof of dependents. It must also be borne in mind that the final steps would not be taken until everything else has failed. Sometimes one hears, "What about the bread winner?" In many of the cases present to my mind — in most, in fact — his seclusion would be an untold blessing to the long-suffering family, upon which for years he has been a dead weight and an open, irritating sore, and none know the real state of affairs than profession.

The insanities of inebriety number seven:

(1) intoxication, (2) delirium tremens, (3) *mania a potu*, (4) dipsomania, (5) monomania of suspicion, (6) chronic alcoholism or dementia, (7) general paralysis. These do not include the imbecility and neuroses which are often the offspring of inebriety. The number who suffer from the last three may be estimated, as, as a rule, they find their way to asylums. Not so those from the first four, whose numbers, at least, reach to four figures. In regard to all the seven insanities, the law has all along looked upon all save delirium tremens, dipsomania, and intoxication — which is a transient and temporary insanity — as an excuse for criminal acts; and in later years two of the most eminent judges who have adorned the Scottish bench — the late Lord President Inglis and the late Lord Deas — put delirium tremens in the same category

as the other insanities. The position of dipsomania is not quite so satisfactory; but it may be taken from the ruling of Lord Young in 1893, when a dipsomaniac was tried for the neglect and starvation of her infant child, that it likewise would be a good answer to a charge as barring trial or excusing the offender.

But the criminal laws of this country — and in this respect our position is exceptional among civilized nations — is far astray in regard to its attitude towards the authors of homicide, assaults, etc., committed by persons in a state of intoxication; not so, however, the interpretation of it, for some judges in England and Scotland have seen their way to reduce the crime of murder to manslaughter or culpable homicide. But this is not the attitude of all, and so we would like to know where we stand in this matter. Are psychologists and legal and medical jurists in the ancient gallery with Coke, the great legist of the seventeenth century, who admitted the insanity (the *voluntarius daemon*, but considered it not only not an excuse but an aggravation; or with Hale, equally erudite, who termed the condition one of *dementia affectata*, which does not excuse unless the frenzy occasioned becomes fixed or habitual; or are we in the same boat with modern judges, who say that while it may not be an aggravation, it is not an excuse; or are we falling in line with enlightened lawyers and alienists, who look upon the intoxicated authors of crime as insane, and calling for detention in an asylum, or the intoxication as a factor in the case, reducing the crime to murder in the second degree, punishable by lengthened imprisonment ?

Intoxication is insanity, fleeting it may be, but from the disorder of the senses and faculties produces as perfect a picture of insanity as is to be met with in the wide and diversified range of lunacy. The condition is fully covered by the one criterion of responsibility known to our law — that laid down by the Bench of Judges in 1843. The civil law of this country has looked upon it as insanity, or something akin to

it, and as nullifying contracts, marriages, testamentary deeds, dispositions, etc. Why in reason should there be such a difference between the attitude of the civil and criminal laws ?

Except the homicides and assaults of homicidal maniacs, 95 per cent. of the homicides and assaults of our criminal calendars are committed by persons in a state of intoxication, and some such have forfeited their lives for their crimes.

Some judicial fallacies, if I may venture, with all respect, to say so, have grown round this question. The drinking is said to be voluntary, the act deliberate, and the death sentence a deterrent to drunkards and habitual drunkards and a protection to society. It is no more the latter than in the past times the " cutty stool " was to fornicators, the gallows to sheep stealers, and excommunication and burying of drunkards in the public highway to the drunkards of last century. Drunkenness and habitual drunkenness still go on apace. Is society free from blame in this matter? The drunkard is allowed by the laws to drink to excess — drunkenness *per se* is not an offense — and no hand lifted, although he is known to be a noxious and potentially dangerous subject in the community, until he commits a crime of the first magnitude. There is food for reflection here, for judges as well as society. Moreover, society would be protected by putting the inebriate criminal in a " safe place of custody," and not holding him responsible for an act of which he has, on regaining sobriety, either no real consciousness or the dimmest.

There is no evidence forthcoming in support of the theory that the gallows is a deterrent to drunkards. Assaults are as numerous as ever, and it is the merest accident many more of them do not terminate fatally. The violence used is not, indeed cannot be, measured.

With regard to the voluntary drinking and the deliberateness of the act, the evidence is all the other way. It may be asked, " Can a drunken man do a willful act ? " — whether at any stage of an habitual drunkard's bout the drinking was

voluntary, for that would imply the certainty of the absence of latent or patent mental or physical degeneration; whether recognized by the physician or not (the case for the physical basis of alcoholism has not yet been stated); or whether, in the case of the casual drunkard, admitting that the imbibing of a safe quantity was voluntary, the moment inhibition is sufficiently impaired, sooner in some than others, by a partial paralysis of the higher centers by the toxic agent, the drinking becomes involuntary, and the crime committed has nothing about it to suggest deliberation. The savage and brutal nature of such crimes is indicative not of premeditation, but rather of blind and furious mania.

My own feeling, in conclusion, is that the plea of insane at the time is a proper special defense, or, failing the acceptance of that, that the crime, after medical and other evidence has been led, should be reduced from murder to culpable homicide. This is all the more reasonable, having regard to the present state of the law, which ignores overt drunkenness and habitual drunkenness; and this other, that the defense of such persons indicted for grave crimes is often conducted without the aid of the specialist, and without any, or a moiety, of the resources at the back of the public prosecutor.

DISCUSSION.

Dr. George Wilson (Mavisbank, Polton, N. B.) highly appreciated the instructive paper, and was surprised that Dr. Sutherland, or some one else, had not made an occasion of this meeting to bring some pressure to bear upon Parliament. He hoped that Dr. Sutherland's recommendations would find some expression in legislation. He also thought that it ought to be emphasized publicly that the bill at present proposed dealt with the most incurable and most hopeless class of drunkards.

Dr. Ireland said he saw no reason why a man known to be an habitual drunkard, to waste his means and neglect his family, should not be treated as one who infringed the criminal law.

Dr. Templemen (Dundee) called attention to one point in

the medico-legal aspects of this question not specially mentioned by Dr. Sutherland. The paper was chiefly concerned with the plea of irresponsibility in cases of inebriety, but another point of great importance was the precautions which should be taken that inebriates who had been convicted of serious crimes, and who had been held to have been insane at the time the crime was committed, should only be liberated on parole, and that the state should lay upon some one the responsibility of notifying, as in the case of infectious diseases, to some one in authority whenever the accused again showed signs of indulging in excess, so that he might be dealt with before he committed any other serious crime.

Dr. Yellowlees (Glasgow) said that there were two classes of inebriates: 1. A class in which drunkenness was willful and deliberate indulgence leading to folly and crime. No one should question that such a drunkard should be punished, and the law provides punishment. 2. A very different class of inebriates in whom will power and self-control and conscience were all destroyed and the man's nervous system and whole nature were utterly deteriorated, so that he could not help drinking on every opportunity. Such cases needed seclusion, care, and treatment—not punishment—which would be cruel and useless. "He did it himself," may be objected, and might or might not be true; very likely it was, but if no disease which the patient brought upon himself was to be treated with skill and care there would be little use for medicine. The only essential thing was that this seclusion and care must be compulsory. Our legislation in this matter had been utterly futile for want of this, and by reason of our absurd reverence for what Dr. Sutherland had properly called a mere fetish — the liberty of the subject.

DEGENERACY: ITS SIGNS, CAUSES, AND RESULTS. Is the title of a work in the cotemporary science series by the well-known physician, Dr. E. S. Talbot, of Chicago, Ill. This is the first treatise that covers this subject with any degree of thoroughness which has appeared. It is the result of the author's studies extending over many years, and is practically one of the great works of the year. We will review it in next issue.

THE TREATMENT OF INEBRIATES.*

By A. M. Rosebrugh, M.D.

In this paper I desire to call attention to the treatment of pauper inebriates and to suggest an economical scheme for the treatment of the more hopeful class of these unfortunates.

In 1890-'91, the writer of this paper had the honor of acting on the Prison Reform Commission appointed by the Ontario government. One of the duties of this commission was to make inquiry as to the cause of crime in the community, the relation of intemperance to crime and the most approved methods of treating inebriates. In prosecuting this phase of the investigation, sheriffs and prison and jail officials were examined under oath as well as a number of Canadian and American gentlemen who were in a position to give an opinion as experts. Medical superintendents of lunatic asylums and jail surgeons gave evidence also. All agreed that intemperance is a most prolific cause of crime. A number placed intemperance second to that of parental neglect as a cause of crime. A number testified also that in their judgment, intemperance, directly and indirectly, is the chief cause of crime. A number testified also that at least in the case of chronic alcoholism, inebriety is a disease and should be treated accordingly. With regard to the general custom of treating inebriates as criminals by sending them to jail, all agreed that this treatment is neither deterrent nor reformatory, that it is unphilosophical and bad economy, and by a number it was characterized as being inhuman.

* Read before the Canadian Medical Association at Quebec, August 17, 1898.

After a most careful consideration of all the evidence and after submitting the proposition to a number of gentlemen qualified to give an opinion and by whom the proposition was endorsed, the commissioners made the following recommendation with regard to the treatment of inebriates in Ontario:—

"The commissioners recommend that the government, out of the funds derived from the fees of provincial licenses (which might be temporarily increased for that purpose), shall erect in the centers of population one or more industrial reformatories for inebriates. Every such reformatory should be near a city, and should have attached to it a sufficient area of good land for the employment of the inmates in farming and market gardening; it should also be furnished with means for employing the inmates in suitable industrial occupations.

"That to this reformatory be committed all habitual drunkards, that is to say, all who have been previously convicted of drunkenness three times within two years; such other persons addicted to the use of strong drink as in the opinion of the county judge may be reclaimed by timely restraint and judicious treatment; and those who may be compulsorily committed to an inebriate asylum under the provisions of the Inebriate Asylum Act. The first committal to this reformatory should be for a period not shorter than six months; the second for not less than one year, and the third for two years, less one day. That any inmate whose term of imprisonment exceeds six months may, after he has been detained for six months or more, be permitted to return home on parole if he has given satisfactory evidence of a sincere desire to live soberly and of strength of mind sufficient to enable him to keep his good resolution — such license to be granted on the recommendation of the superintendent, endorsed by the inspector of prisons, and approved by the provincial secretary; such license to be revoked if the conditions on which it is granted be not observed.

"That if the families of any inmates of a reformatory for inebriates be wholly dependent on them for support, a portion

of the proceeds of the earnings of such inmates be paid to their families; also that a portion of the net earnings of the inmates, after defraying cost of maintenance, shall be set aside to form a fund, out of which those whose general conduct has been good and who give evidence of being reformed, shall be assisted in their efforts to earn a living for a time after leaving the reformatory.

"That after a third commitment to an industrial reformatory for inebriates, a drunkard again convicted of drunkenness, be shall then be sentenced to the central prison for the full period authorized by law."

These recommendations have been endorsed by the Ontario Medical Association and by a number of other influential public bodies, but the Ontario government has persistently declined to give them practical effect. The Ontario government declines to take action on the following grounds: Firstly, the number of inebriates in the province is very large and the expense for buildings and maintenance would be very great; secondly, it would be impossible to provide such a large body of men with industrial employment, and thirdly, the temperance organizations are taking very little interest in the movement. On grounds of public policy, as well as on economic grounds, we believe the government is making a mistake. If only 33 1-3 per cent. of drunkards are reformed by reformatory treatment, and this is estimated by competent authorities as the minimum number, the expenditure would be more than justified. This attitude having been assumed, the question arose, firstly, should this attitude on the part of the government be accepted as a finality, and, secondly, cannot a less expensive scheme be devised which, although falling short of accomplishing all that could be expected of an industrial reformatory, might nevertheless be the means of rescuing a large number from drunkenness and a drunkard's grave.

Under these circumstances the Prisoners' Aid Association of Canada, in January last, asked me to visit inebriate hospi-

tals — to interview specialists and to formulate, as far as possible, a practical and economical scheme for the consideration of the government for the scientific treatment of pauper inebriates. As a preparation for executing this commission, I visited eight institutions devoted to the treatment of inebriety and interviewed a number of specialists, including the following, namely, — Dr. Lett, of Guelph; Dr. Crothers, of Hartford; Dr. L. D. Mason, of Brooklyn; Dr. Hutchison, of Foxboro, and Dr. Elsworth, of Boston. I also investigated the Boston Probation System as applied to the case of drunkards, at the same time making careful inquiry into the comparative merits of the different systems of treatment, whether in accord or out of accord with the generally accepted tenets of legitimate medicine.

In formulating this scheme I had in view, necessarily, the requirements of the Province of Ontario; but if the plan herein outlined for Ontario be a good one, there is no reason why it should not be adapted to the other provinces as well.

It is, in brief, as follows:—

1. The appointment by the provincial government of an inspector of inebriate institutions. This inspector should be a qualified medical practitioner who has made the medical treatment of inebriety a special study.

2. The inspector should organize in the city of Toronto a hospital for the medical treatment of pauper male inebriates of the more hopeful class, and in other cities of the province an inebriate department in the existing general hospitals, more especially for pauper male inebriates.

3. An industrial reformatory should be established on the farm colony plan for the custody of the more hopeless or incorrigible class of male drunkards, and where they should be detained on indeterminate sentences.

4. In the adoption of scientific medical treatment, the Norman Kerr-Crothers system or general plan of treatment is recommended. In the interests of science and good morals, proprietary remedies should not be used.

5. The adoption of the "probation system" and giving a helping hand to patients subsequent to treatment for inebriety.

6. In the case of habitual female drunkards my recommendation is that they be sent to the provincial reformatory for the full term of two years and that this be repeated in case of relapse. In case of the more hopeful class of female drunkards I recommend a few weeks' special treatment in any of the existing homes or refuges for females, followed up by subsequent judicious supervision. Arrangements to this end should be made by the government inspector, who should also inaugurate and have supervision of the "probation system."

In Ontario there is a per capita government grant of 30 cents a day to all hospital patients. In order to secure the co-operation of hospital trustees in the proposed plan it may be necessary to ask the government to increase the grant to say 35 or 40 cents a day for inebriate patients. The hospital accommodation, in some cases, may be too limited to admit of the reception of these cases. In that case, possibly the provincial government may be disposed to come to the aid of the trustees.

An essential feature of this scheme is the proposed utilization of the Massachusetts probation system in giving a helping hand to reformed inebriates subsequent to the hospital treatment. By giving the inebriate a helping hand, and more particularly by finding him employment, he is rendered a service quite as important as that of giving him medical treatment. Both are essential. The man will not seek employment or retain it when obtained for him so long as he has a craving for intoxicants, and, on the other hand, a reformed inebriate will not long remain reformed if he fail to secure remunerative employment.

In every city and large town in Ontario there is either a truancy officer or an agent of the Children's Aid Society, or both. What I would suggest is that the services of one of

these officers be secured to act as probation officer. I have no doubt, in most cases, this will not be difficult.

It is to be understood, of course, that this scheme is not suggested as a substitute for, or to take the place of, a government reformatory or farm colony for inebriates. That will still be necessary, and it would be complemental to the proposed hospital and probation system. The latter is suggested for the treatment of the more hopeful cases, while the former will be required for the prolonged detention of the less hopeful and incorrigible class.

Among the advantages that may be claimed for the hospital and probation system are, firstly, it may be inaugurated at any time without waiting for the erection of expensive buildings, and, secondly, in my judgment, maximum efficiency would be secured with minimum expense.

While advocating the utilization of existing hospitals in the treatment of inebriates, I am free to admit that in a city as large as Toronto much better results might be expected from the establishment of a special hospital.

My recommendations have not, as yet, been formally presented to the Ontario government, and I am not in a position to state what action may be taken with respect thereto. The attention of the inspector of hospitals, prisons, etc., has been called to the question, and I infer from what has passed between us that he is disposed to look upon the proposals most favorably, and I may add that at his suggestion, I am now about to correspond with hospital trustees to ascertain to what extent their co-operation can be counted upon.

As the carrying out of the proposed hospital treatment will naturally devolve upon the house surgeons, many of whom are recent graduates with limited experience, my proposition is that the special medical treatment of inebriate patients shall be under the direction and supervision of the government inspector to whom a detailed history of each case, with all relevant facts, shall be promptly forwarded on admission. This

does not refer to the preliminary treatment, which, in most chronic cases, might be entrusted to the house surgeons. By placing the special treatment under the control of a central authority, there will be unity of purpose, statistics can be collected, results compared and tabulated, and progress made.

As already stated, if this scheme promises to result in the successful treatment of inebriates in Ontario, it should be equally successful in each of the other provinces of the Dominion.

It is respectfully commended to the thoughtful consideration of the members of the Canadian Medical Association; and may I be allowed to suggest the propriety of appointing a committee early in the session to make a report on the whole question, if possible, before the close of the present meeting ?

The question of the treatment of inebriates was introduced into the Ontario Medical Association at the annual meeting held in June last, and was referred to a committee, but unfortunately too late to admit of a report being prepared before the close of the meeting.

I may add that Dr. Stephen Lett, of the "Homewood Retreat," Guelph, speaks of this scheme as follows:

"The general plan outlined is a good one and has my hearty endorsation; if care is exercised in carrying out the details, I am confident much good will result. Your fifth clause, providing for probation and a helping hand subsequent to treatment, is most valuable."

THE TREATMENT OF INEBRIETY IN RUSSIA.

The excellent results obtained in Russia during the last few years by the treatment of inebriates in special homes have been so striking that it is now generally admitted to be the only means in dealing efficaciously with patients of this kind. The number of special hospitals for inebriates is, therefore, rapidly increasing in that country. Hospitals are being erected in Moscow and in Kieff, and the government has recently made a grant of nearly £7,000 towards the erection of one in Kasan.

THE NEW ENGLISH INEBRIATE LAW OF 1898.

The government bill which has recently become law is "An Act to Provide for the Treatment of Habitual Inebriates." It deals only with those who have come into the hands of the police and are regarded as

CRIMINAL HABITUAL DRUNKARDS.

These (Secs. 1 and 2) are divided into two classes; the one includes those who have been convicted of grave offenses against the law, punishable with imprisonment or penal servitude; the other comprises such as have been convicted of mere petty offenses against the licensing or police acts.

The former and more grave offenders are dealt with (Sec. 1) after the following manner: We may suppose that some village pest, in the shape of a well-known habitual drunkard, sets fire to a rick of hay or steals a sheep. Being brought before a magistrate, he is in the ordinary course committed for trial. At the following sessions or assizes he is indicted for the offense charged against him, it being simply stated in the indictment that he is an habitual drunkard. If, on arraignment, he pleads guilty, or is found guilty by the jury, of incendiarism or sheep stealing, the jury will then be charged to inquire whether he is an habitual drunkard. Of course, if he admits that he is one, a jury need not again be sworn. The prisoner now stands convicted of a grave offense and is proved to be an habitual drunkard. What is to be done with him? Hitherto the only way of dealing with such a man has been to sentence him to a term of imprisonment or penal servitude, say, for one, two, or three years. "Serve him right, the drunken thief; good riddance to such a pest," might have said everyone in the village from publican to parson. The new act here comes in as the expression of an advancing sentiment in the country, and while leaving the criminal inebriate to be

duly punished, makes better provision for his reform. It does so by empowering the court, in addition to the sentence, "to order that he be detained for a term not exceeding three years in any state inebriate reformatory, or in any certified inebriate reformatory, the managers of which are willing to receive him." This detention may, moreover, be ordered in substitution for any other sentence, a provision which will enable the court to deal specially with an habitual drunkard who, although having committed a grave offense, cannot be treated as an habitual criminal. Thus the village is rid of its "drunken pest" for a term of years, knowing that in the meantime something is being done not only to punish him for his crime but to cure him of what was in all probability its cause, inebriety.

Section 2 of the act deals with habitual drunkards who have committed petty offenses against the licensing or police acts, such as "drunk," "drunk and disorderly," "drunk when driving," "drunk and refusing to quit," etc., etc., a list of which is given in the first schedule. Any person committing such an offense who within the twelve months preceding has been convicted at least three times, is liable "to be detained for a term not exceeding three years in any certified inebriate reformatory, the managers of which are willing to receive him." It is worthy of note that he is not, under this section of the act, sent to a state inebriate reformatory to be in the company of felons, but where he will be detained not so much as a punishment as for the purpose of being cured. The act thus enables a magistrate to deal effectually with those unfortunate persons whose faces, alas! are only too familiar in the police-court. If poor Jane Cakebread, some twenty years ago, before drink had made her a lunatic, could have been dealt with under such a section of such an act, she might have lived and died a very different woman.

Sections 3 and 4 make provision for the establishment and regulation of

STATE INEBRIATE REFORMATORIES,

the whole expense of which, as regards the acquirement of buildings, management, and maintenance of inmates, are defrayed out of moneys provided by Parliament.

Sections 5 to 11 deal with

CERTIFIED INEBRIATE REFORMATORIES,

to be in some respects of a similar character to the inebriate institutions already in existence, such as the Dalrymple Home at Rickmansworth, to which we presume patients may be sent under the act.

Inebriate reformatories can be established and maintained under the act by the local authorities of any county or borough, or two or more councils may combine for that purpose (Sec. 9), for which purpose they are also empowered to borrow money.

They may also be established by private persons, and will be certified as inebriate reformatories, provided the conditions under which the certificates are granted and held are complied with (Sec. 5). Patients may then be sent to them for detention under the act, the expenses of their detention being paid by the state, or by the local authorities, or partly by each (Secs. 8 and 9).

Under certain regulations inmates may be transferred from one inebriate reformatory to another, or from a state inebriate reformatory to a certified one, and in special cases from a certified inebriate reformatory to a state inebriate reformatory (Sec. 6).

Any person escaping from a certified inebriate reformatory can be apprehended without warrant and brought back by one of its officers, who while engaged in that duty is invested with the powers and privileges of a constable (Sec. 11).

Sections 12 to 19 refer to the

AMENDMENT OF HABITUAL DRUNKARDS' ACT, 1879,

but only in a few unimportant particulars, the chief being the

extension of a license to a "period not exceeding two years instead of a period not exceeding thirteen months" (Sec. 14). In respect to voluntary patients also, the period is two years instead of twelve months. One justice, moreover, is substituted for two justices as the attesting authority to the signature of an applicant (Sec. 15).

Other sections of the act refer to its application to Scotland and Ireland.

The act comes into operation on the 1st of January next, and there will then be twenty or thirty thousand patients waiting to be operated upon, who during the present year have been convicted of some drunken offense not less than three times. It will be for temperance reformers to see these patients are not neglected, in attending to which they will, of course, be greatly helped by all connected with the "trade." — *Temperance Record.*

At a recent meeting of the Mississippi Valley Medical Association it was stated that an examination of 150 male employes in a large tobacco factory, all of whom used tobacco, either by smoking or chewing, revealed impairment of vision in every case. In forty-five the visual activity was much diminished, in thirty cases the impairment being serious; the men mistaking red for brown or black, and green for blue or orange. Many of them were also unable to distinguish the white spot in the center of a black card.—*Medical Times.*

A saloonkeeper in England advertised his beer as liquid bread. A member of the English Parliament bought a quart and paid a chemist fifteen dollars to examine it. Two per cent., about a thimbleful, was really food. Five per cent. was alcohol, and the remaining 93 per cent. water. He was arrested under the food act.— *From the Popular Science News, New York.*

THE MORPHINE HABIT.

By William F. Waugh, A.M., M.D., Chicago.

Fellow of the Chicago Academy of Medicine.

When I was a student at Jefferson, Dr. Keen one day took me to see a case at St. Mary's. It was a woman with lupus exedeus. The left half of the face was gone. The nose, eye, mouth, and all the tissues back to the ear were lost in a horrible cavity. The sight was a nightmare, which haunted me for many a day. A similar impression was made upon me many years subsequently, when I first witnessed the closing scenes of an opium wrecked life. No words of mine can portray that spectacle, but the recollection even now brings a lump in my throat. All sensations of pleasure, or even comfort, from the drug had been lost, and it was now merely the means of keeping the man alive. His shrunken frame, scarred by abscesses, the nightmare that made sleep a terror, the convulsions, spasms of the glottis or diaphragm, the intense pain of neurotic angina, and withal the profound remorse of a soul still alive and actually sensible in the wasted body, three-fourths dead. Fortunately few opium-users survive to reach this stage, intercurrent disease carries them off, or accidents or intentional taking of an over-dose spares them these closing scenes. Thus it happens that of the numerous opium-takers, I have met scarcely any who have witnessed this final stage of the disease. But once seen it is never to be forgotten, and many a time when a patient is weakly complaining of the pangs of withdrawal, the recollection of that incomparably greater agony we are rescuing him from comes up to forbid the desired relief.

What are the causes of this habit? Many contract it

unconsciously, in seeking relief from rheumatism, neuralgia, dysmenorrhea, and such painful disorders; curiosity, remorse, grief, and overwork contribute each its quota. From the vast army of the degenerates the majority of the morphinists is recruited. When in the relentless struggle for existence the weakest is beaten back, the unfittest still survives, and too often seeks in the magic drug a temporary sustainer of the powers or a consolation for defeat. A large proportion of the cases which apply for relief are physicians, nurses, or druggists, men who are accustomed to handle the drug and know its uses and dangers. I have long ceased to look on the opium-using doctor as deserving contempt; too often he is a martyr to his professional duties. Many have told me that their first use of the drug occurred when, worn out by an unusual round of work, after days of visiting and nights of obstetrical service, perhaps suffering with neuralgia, influenza, or dysentery, they have been suddenly called to meet one of the gravest emergencies of a doctor's life—a railroad accident for instance — when there is an imperious demand that the doctor must be at his post; when he *must* come, sick or well. An eight hypo. fixes him up, and he finds his brain clear, his hand steady, fatigue is gone, and he does the very best work of his life. The lesson is soon repeated, and before he is aware of it the "shot" has become habitual.

Is the disease curable? There is a singular discrepancy in the replies to this question, as given by the illustrious men who have given their lives to the study of drug habits and whose reputations are world wide, and the comparatively unknown individuals, most of them not doctors, who advertise for victims. Broadly speaking, the greater the writer's reputation and experience, the more skeptical he is in regard to a cure. Eylenmeyer and Regnier are very doubtful, while the distinguished veterinarian who advertises his ability to cure the worst case in fifteen minutes is quite confident. If a man really wants to be cured, if he has no incurable organic disease

like cancer or diabetis back of the habit, if his circumstances are such that he can and will break away from environment that first induced the desire, he can be cured, unless the drug has been taken so long that the bodily functions have been set to the morphine key, so to speak, and the tissue metabolism cannot go on without it. I would add also my conviction that a confirmed cocainist is incurable. The morphinist is truthful and trustworthy within reasonable limits; the cocainist is soulless; the moral principle in him is dead; there is nothing on which to base a cure. Dr. Bannister believes that capillary stasis on the face, the dusky flush sometimes seen on old cases, is an evidence of such a degree of cerebral degeneration as to render the case incurable. I would, however, decline to accept this, unless we add: except by confinement in an asylum for at least a year.

I draw the line also at home treatment. This I decline to have anything to do with, considering it dangerous, cruel, and inefficient; dangerous, in that all symptoms manifested are apt to be referred to the withdrawal of the drug, when they may be due to underlying or intercurrent disease; cruel, in that the patient is compelled to suffer much needless agony from which he would be relieved if one had the proper means and skill to use them; inefficient, in that it always fails, except in very easy cases. And the willingness to leave home and business and devote one's self exclusively to the cure, I take to be the one only proof that the patient really wants to be cured. Dr. Woodbury says many men think they want to be cured, but they don't.

When the treatment is determined upon, the first step is the examination. Strip the patient to the skin and go carefully over the body, recording every deviation from normality, however slight. Test each organ: the liver, heart, kidneys, bowels, skin, and nervous system. Then clear out the bowels thoroughly, by drastics and flushing the colon. Institute treatment for every ailment discovered.

The doses of morphine are to be reduced as rapidly as possible. If the patient be young and healthy, with sound organs and unimpaired strength, if he has not taken the drug over a year, and not over three grains a day, stop it at once. In every case reduce as quickly as the symptoms will allow, disregarding pains, but watching for collapse or heart failure. The first evidence of withdrawal are sneezing and yawning, followed by aching knees, burning patches of skin, restlessness, uneasiness, insomnia, irregularity of the heart, and a hyperaesthesia of the nerves, general or local. Relieved of the benumbing drug, the nerves react tumultuously, and with exaggerated sensibility. Despondency, hallucinations, sometimes delirium, present themselves. At one stage the patient is pretty apt to want to go home; and very specious reasoning is presented to excuse his wish to get off where he can get a dose. The tendency to self-deception is remarkable. Much of the suffering is suggestive; patients work themselves into a perfect frenzy sometimes, when the reduction has not yet begun. On the other hand, if he thinks he is still taking full doses, he may be cut down to one-tenth before any uneasiness is seen.

What is the true cause of these symptoms? I have the honor of presenting the only intelligible explanation as yet given of the phenomena of habit. Why does one become enabled by habit to take a dose that would surely kill him at first? Because he gets used to it, which means nothing at all. I believe that the body really secretes an antagonist; just as hard work developes callous on the hand. As the dose of morphine grows larger, the cells secrete a ptomaine, which antidotes the drug, and renders it not fatal. And as this secretion becomes habitual, it does not necessarily cease the moment the morphine is stopped, but goes on; and then we have symptoms of poisoning from the ptomaine, and these are what we call withdrawal symptoms. Sometimes these closely resemble atropine poisoning, at others muscarine or strychnine pre-

dominates. As we know that ptomaines acting like atropine and muscarine have been recovered from the fæces, this hypothesis is not without support. And further, it is to some extent confirmed by the results of intestinal antiseptics. During the past year, since this explanation occurred to me, all our cases have been treated with full doses of the sulfocarbolates; and now we have so far reduced the suffering that our patients never pass a night without some hours' sleep, and never miss a meal. And surely, this being the case, they have little reason to complain of suffering, especially in view of what they escape.

Heart weakness must be carefully watched for, and treated by sparteine hypodermically, and morphine. Hot baths, rest in bed, any means of putting in the time and diverting the patient's attention, from himself, hypnotism, electricity, massage, and many other agents aid in relieving the suffering and reducing it to a minimum. The patient must be encouraged to make as much of the fight himself as he can, for the consciousness that one has acted the manly part is a good thing; it helps to keep a man straight. As soon as the crisis is over, cold baths assist in the same; and when on a cold winter's day a man will step into a tub of icy water, and lie down to cover his whole body and head, I think you will agree with me that he has a very creditable amount of will power. Curiously enough, after the cold plunge, when he has been well rubbed down, had a cup of capsicum tea and been wrapped up warmly in bed, the sensation is that of having had a big dose of morphine. I have had men who never had taken a cold bath before, take seven in a day, in order to get this sensation. With reaction comes a wolfish appetite, and a delightful sensation of being born again; casting off the dross and impurities of the previous life. But as in convalescence from fevers, this sensation is delusive, and the first attempt at work reveals the true weakness of body and mind. The patient ought to have six months' rest, travel and recreation, before taking up the

duties of life again; and whenever it is possible to adopt an occupation that does not involve handling drugs it should be done.

Not infrequently, when the morphine veil is lifted, some underlying disease is discovered; diabetes, nephritis, phthisis, among the number. These should be carefully watched for and treated. Sometimes they require a return to the drug, as in one of my cases, when albumenuria set in and continued till the use of morphine was resumed.

Relapse occurs soon, if the patient, barely over the drug, goes back to do the work without its help he was hardly able to do with it. It is sheer folly. Otherwise, most cases relapse in the seventh month. The tissue metabolism does not go on perfectly without the accustomed drug, and there is a gradual accumulation of toxine in the cells. About this time the temperature falls below normal, the respiration is labored, the face cyanotic, the urine scanty, and the excretion of urinary solids defective. Unless the patient is most skillfully treated then, he will surely relapse.

I will conclude by referring briefly to some large promises made by the advertising gentry. One guarantees a cure at home, without detention from business; another cures in two weeks or in 48 hours; another cures without any suffering. The testimony of the men whose reputation is world wide is unanimously to the effect that these things cannot be done, except in cases so light as hardly to deserve the name. But I am not averse to learning, even from a quack; and I have investigated all these methods as far as possible. I find that the meaning attached to the word "cure," is the real secret. One man came to me "cured" of morphine, but asking help to rid him of "anodyne," he was buying from the man who had cured him. His urine responded at once to the tests for morphine. At some places they cure morphine by substituting whisky, codein, cannabis indica or chloral — casting out satan by Beelzebub. One man stupifies his patient with

chloral, keeps him so for ten days, then allows him to wake, and sends him home, telling him he is cured, having had no opiate for ten days. When he gets home, the withdrawal symptoms begin and the whole fight is before him. But one of the men investigated actually knew so little of the subject, that he really believed that when the morphine was eliminated from the body, the patient was cured. This, in the face of the fact that that is just when the trouble begins.

In conclusion, I would say that a man is only cured when he is totally void of opium and all other narcotics, and is capable of returning home and pursuing his avocation without the aid of any drug whatsoever.—*Peoria Medical Journal.*

EFFECT OF COFFEE-DRINKING ON THE EYES.

Snaitkin, according to the *Medical Review*, says that the Moors are inveterate coffee-drinkers, especially the merchants who sit at their bazaars and drink continually during the day. It has been noticed that almost invariably when these coffee-drinkers reach the age of forty or forty-five their eyesight begins to fail, and by the time they get to be fifty years old they become blind. One is forcibly impressed by the number of blind men seen about the streets of the city of Fez, the capital of Morocco. It is invariably attributed to the excessive use of coffee.— *New York Medical Times.*

All inebriates have moral aberration and moral obliquity, and in many cases but little intellectual failure, although sense defects may be prominent. The capacity to realize the nature and character of ethical relations is always seriously impaired. It is impossible to use spirits for any length of time to excess and be of sound mind and body.

SOME POINTS IN THE DIAGNOSIS OF MORPHIA ADDICTION.

By Stephen Lett, M.D., M.C.P. & S. Ont.

Medical Superintendent of the Homewood Retreat, Guelph, Ont.

The far-reaching and important factor of being able to make an absolute diagnosis in cases of suspected morphia addiction is of such moment that any possible light on the subject should receive publication. The malady is frequently a secret one — known only to the unfortunate habitué, who uses every possible means to keep the fact hidden from nearest friends and relatives, as well as the medical adviser, until dire necessity compels an acknowledgment of that which has been so long withheld at the cost of exquisite physical and mental torture and ruin to the general health. The importance of a correct diagnosis is further manifest in many medico-legal cases; errors have led to serious results — inflicting injustice, undeserved penalties, and even sacrifice of life, when a correct diagnosis would have averted these catastrophes.

I am pleased to find that Dr. Mattison, medical director of the Brooklyn Home for Habitués, has, in the Quarterly Journal of Inebriety, Vol. XX, No. 2, page 203, directed attention to this matter, and ably presents the subject, as witnessed by myself and others engaged in the special line of treating cases of narcotic addiction. Dr. Mattison, in the same article, points out the way to a diagnosis in the followng words: —

"The detection of morphiñism in women need never be difficult. We have infallible means to decide it. Two tests

place the diagnosis beyond doubt. One is urinary analysis; the other, enforced abstinence. The latter is the better. The former is best made by the Bartley process — Dr. E. H. Bartley, Professor of Chemistry, L. I. College Hospital. There are other methods, but they are complex. This is simple and sure. It is: Make suspected urine alkaline with carbonate of soda. To this add one-fourth its volume of chloroform or amylic alcohol. Shake well, allow to settle, draw off the chloroform and add a small amount of iodic acid. If morphia be present a violet tinge will be noted. The other test suggests itself. Forced abstinence from morphia for forty-eight hours will surely give rise to reflex symptoms due to opiate need, and settle habitual taking beyond dispute."

I was of Dr. Mattison's opinion until recent experience proved to me that the means of diagnosis above suggested are open to grave errors which might lead to most serious results. Doubtless there are many cases in which a correct diagnosis may be made by one or other or both the tests he has so advantageously published. Yet there are instances where they will prove to be fallacious.

Take the physiological test of enforced abstinence for forty-eight hours. It is not always possible to have the suspected person placed in such a position, surrounded by the proper safeguards, and have the necessary espionage exercised to prevent the possibility of clandestine morphia-taking. Supposing, however, this supervision possible, the patient might have been addicted to some other drug — cocaine, phosphorus, paraldehyde, chloral, etc., or even alcohol; the sudden and protracted deprivation of the accustomed drug would be followed by a train of symptoms so closely allied to those consequent upon the sudden withdrawal of morphia that it would require a very acute diagnostician to make a diagnosis that could not be called in question.

By means of the science of chemistry there is at our command a surer and better method. Urine can always be ob-

tained from the suspected person, and a proper analysis of it will reveal the presence or absence of morphia. The Bartley mode of testing the urine, as set forth by Dr. Mattison, is open to error, for not only have I proved that the iodic acid and chloroform reaction test can be obtained with some urines in which I have absolute certainty no morphia exists, as evidenced by the source from which it was obtained, as well as by chemical analysis hereafter described, but also have had negative results by the Bartley test with urine voided by a patient known to be taking two and three-quarters of a grain morphia sulph. in twenty-four hours that, unless very critically examined, it was impossible to say any reaction had taken place, and yet a sample of this latter urine treated by the method hereinafter described unmistakably reacted to the iodic acid and chloroform test.

Upon these facts we are forced to the conclusion that some urines contain a substance or substances which, unless separated before the final test is made, will give a reaction the same as morphia; and that in some persons taking below three grains of morphia in twenty-four hours the Bartley test is not reliable.

The urines which, I am absolutely sure, contained no morphia, gave with the Bartley test a very positive reaction, and beyond a slight excess of uric acid in my own case, the persons from whom other specimens were obtained are in perfect health. I may further add that the uric acid separated from my urine when acidulated with hydrochloric acid, the uric acid collected in a filter and well washed, gave the reaction with iodic acid and chloroform. The question whether this is entirely due to the uric acid or some adherent substance has, as yet, not been determined, this, together with the isolation of any other substance causing the reaction is reserved for further investigation now in progress.

The method I recommend for the detection of morphia in the urine is as follows:

Collect about twenty ounces (less will do) of the suspected

urine. If it has not an acid reaction acidulate with dilute hydrochloric acid until it reddens blue litmus. Concentrate to about three ounces and let stand in a cool place for twelve hours, then filter. To the filtrate add sufficient carbonate of sodium to render it alkaline and let it stand for twelve hours, then filter and collect the precipitate, wash this with distilled water made slightly alkaline by carbonate of sodium and dry. Digest the dried precipitate with pure alcohol at a gentle heat and filter, evaporate the filtrate to dryness, dissolve the residue with dilute sulphuric acid, and test for morphia by the iodic acid or other well-known tests for morphia salts.

By the above method I have succeeded in obtaining morphia sulphate from the urines of persons taking very minute amounts of the drug, and have been able to identify the crystals by means of the microscope, when the Bartley test failed. — *Canada Lancet.*

THE CAUSES OF INEBRIETY AMONG WOMEN.

In giving evidence before the Liquor Commission, Dr. Lawson Tait drew a marked distinction between drunkards of the two sexes, and said that a drunken woman required special treatment. Almost without exception, he had been able to trace the cases of female drunkenness to physical or mental suffering. Female drunkards occurred, he said, in all classes of society, even in the highest, and in analyzing a set of 108 cases, he found they fell into two groups — (1) a small one of twelve persons, having an average age of 26, and (2) a large one of ninety-six, with an average age of 48 — and he drew the conclusion that the suffering due to the change of life was the cause of the second group, and that when the period was passed the tendency ceased. He thought also that in the first group the drunkenness was due to physical suffering, and that when the cause was removed the drunkenness diminished. . . . Without doubt the proper thing is to remove the cause of the craving. We must not, however, be too sure that a habit will be stopped by the removal of the cause of its beginning. The removal of the temptation to its continuance is likely also to be of use.

Abstracts and Reviews.

MEDICATED WINES.

By Frederic C. Coley, M.D.,

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I have been very glad to have seen more than once of late in the *British Medical Journal* protests against the general use of certain fluids largely advertised under the name of medicated wines. There are two classes of such preparations which I think it is not only our duty to avoid recommending, but against which we should warn our readers with the greatest earnestness, and be prepared to explain our reasons for so doing.

The first class to which I allude are called coca wines, compounds which consist of a wine of considerable alcoholic strength (generally, I believe, claiming to be either port or sherry), with the soluble parts of coca, or else a salt of cocaine dissolved therein. Coca and its chief alkaloid, cocaine, are drugs which possess some power of removing the sense of fatigue, just as analgesics remove the consciousness of pain. But they no more remove the physical condition of muscles and nerve centers of which the sense of pain gives us warning than a dose of morphine, which relieves the pain of toothache, removes the offending tooth, or even arrests the caries in it. The truth of this will be obvious to anyone who remembers enough of physiology to know what fatigue really means. A

muscle which is tired out is different chemically from the same muscle in its more normal condition, when it is ready to respond vigorously to ordinary stimuli. It has lost something and is besides overcharged (poisoned, in fact) with the products of its own activity, and it can only be restored by a fresh supply of the material which it requires, and the carrying away of the poisonous waste products. Fatigue of nerve centers is, no doubt, strictly analogous to fatigue of muscles.

It is practically impossible for us by voluntary exertion to reach the degree of absolute fatigue which the physiologist produces by electric stimulation of a nerve-muscle preparation. The sense of fatigue becomes so intense that voluntary effort cannot overcome it, just as no man can produce asphyxia by simply holding his breath, because the *besoin de respirer* becomes irresistible; but it is quite possible for a narcotic to so dull the sensory part of the respiratory reflex mechanism as to permit asphyxia to take place.

The sense of fatigue and the *besoin de respirer* are both Nature's danger signals. Drugs which hide such signals from us are a more than doubtful benefit. If it were possible for us to suppose that a fraction of a grain of cocaine could afford to exhausted nerve centers and muscles the nutriment which they require for their restoration, and at the same time eliminate the poisonous waste products, then it would be reasonable to prescribe the drug for use by all who are overworked, and perhaps suffering from the malnutrition consequent upon "nervous dyspepsia," as well as mere want of rest.

In this go-ahead century it is no wonder that many are but too ready to experiment with a drug which professes to be able to remove fatigue, and to enable a man to go on working when, without its aid, weariness had become unendurable. Cocaine claims all this; and it is most dangerous just because, for a time, it seems able to keep its promise. That is how victims to cocainism are made. Let us be honest with our

overworked patients, who want us to help them with drugs: let us tell them that rest is the only safe remedy for weariness.

To combine such a drug as coca, or cocaine, with an alcoholic stimulant is to multiply the dangers of cocainism by those of alcoholism. It would be impossible to find terms sufficiently severe in which to condemn the recklessness of those who promiscuously recommend such a compound for all who are overworked or debilitated. One firm actually has the assurance to advertise a preparation of this kind as a remedy for dipsomania. Truly, this is casting out devils by Beelzebub with a vengeance. Invoking Beelzebub for such a purpose has never been a success. And I suspect that any form of coca wine will make a great many more dipsomaniacs than it will cure.

It is, in my judgment, more than doubtful whether any medical man is justified in prescribing coca, or cocaine, in the form of wine, even when he believes that the drug is indicated on satisfactory grounds. Such a form is excessively likely to lead to the abuse of the drug. If the prescription has a real or apparent success, the patient is likely to recommend it promiscously to acquaintances, with disastrous results only too probable.

There is another combination which, though utterly absurd from a therapeutical point of view, is not in itself quite so dangerous as coca wine. It will probably do a larger amount of mischief, however, because more people take it. I refer to the various preparations, so largely advertised, which profess to be compounded of port wine, extract of malt, and extract of meat. To the medically uneducated public this doubtless seems a most promising combination: extract of meat for food, extract of malt to aid digestion, port wine to make blood. Surely, the very thing to strengthen all who are weak, and to hasten the restoration of convalescents. Unfortunately, what the advertisements say — that this stuff is largely prescribed by medical men — is not wholly untrue.

I do not suppose that any physician of anything like front rank would make such a mistake. But busy general practitioners may be excused if they prove to be a bit oblivious of physiology, and so become attracted by a formula which is more plausible than sound. In the first place, we all know that extract of meat is not food at all. Dogs fed on extract of meat only die rather more quickly than dogs which are not fed at all — which result is only what might have been anticipated. Extract of meat, from the manner of its production, cannot contain an appreciable quantity of proteid material. It consists mainly of creatin and creatinin and salts. These are, it is needless to say, incapable of acting as food. Extract of meat, and similar preparations, have their uses, however. Made into "beef tea" their meaty flavor often enables patients to take a quantity of bread, which would otherwise be refused: or lentil flour or some such matter may be added. In this way, though not food itself, extract of meat becomes a most useful aid to feeding. Persons who are unable to take tea or coffee at supper for fear of insomnia, or cocoa for fear of biliousness, may find some preparations of the meat extract type very useful. Extract of meat is, besides, a harmless stimulant, especially when taken (as it always ought to be) hot. It should be needless to add that to combine extract of meat with port wine is simply to ignore its real use. The only intelligible basis for such an invention must be the wholly erroneous notion that extract of meat is a food.

Extract of malt is useful by itself. But when I prescribe it I like to know both the quality and the quantity of the preparation which my patient will receive.

As to the "port wine," the medical man appears to me strangely innocent and confiding who supposes that he has recommended a good investment when he has told a patient to buy port wine, complicated with an unknown quantity of beef extract and malt extract. Port wine is, at the best, a fluid about the composition of which it is difficult under any

circumstances to pronounce with confidence. But when its flavor is confused with that of beef extract and malt extract, the most experienced connoisseur might well decline to venture so much as a guess about such a complicated problem. And when the difference between cost to vendor and cost to purchaser has to provide for a huge expense in advertising, and lavish free distribution of samples, and over all this to furnish large dividends — under these circumstances the antecedent probability in favor of a high quality of genuine wine is not such as to banish skepticism. — *British Medical Journal.*

INFLUENCE OF COLD BATHS IN DELIRIUM TREMENS.

Lettule (*Centralbl. für Ges. Ther.*) recommends as a sedative in delirium tremens a cold bath of 65° F., the patient being immersed in the water to his shoulders, while water of the same temperature is poured over his head. In a severe case in which large doses of morphine subcutaneously and chloral by the mouth had failed to give sleep in two days and death was expected, a bath of the temperature of 65° F., increased in the first three minutes cyonosis and excitement. In six minutes the aspect of the patient completely changed. His excitement disappeared, he seemed to awake from a dream, asked where he was, drank eagerly two glasses of warm wine, and wanted to sleep. He was placed in bed and immediately fell asleep. The following day, on account of recurring excitement, it was necessary to repeat the bath four times. There was no further delirium and the patient recovered. In a second case it was necessary to leave the patient twelve minutes in the bath, when as suddenly as before there was quiet, thirst, and a desire for sleep, followed by complete recovery in two or three weeks.

TREATMENT OF THE MORPHINE HABIT.

Dr. Cassidy, the distinguished editor of the *Canadian Journal of Medicine and Surgery*, gives the following editorial in a late number of his journal:

"Dr. Paul Sollier, in *La Presse Medicale*, gives some very instructive views on his method of treating patients, who have for many years been addicted to the use of morphine. When regularly injected in a continued manner, morphine causes, after a considerable time, a more or less important diminution of the activity of the nervous system, and a very marked slowing of the processes of glandular secretion. When morphine is rapidly withdrawn, there is frequently a resumption of the glandular functions; but this does not happen immediately in all the organs at the same time, the different phenomena appearing one after the other. Most frequently perspiration and sneezing open the scene, accompanied with yawning. Then diarrhœa appears — at first ordinary fæces, then pure bile, afterwards loose motions, half bilious, half fæcal in character; mucous vomiting (gastric juice), then bile, where there is any, appears after the diarrhœa has started and stops before it. Spermatorrhœa appears afterwards, then salivation and muscular cramps. Each glandular apparatus begins operations in its turn, without any determined order in this succession of phenomena, which varies with each person and depends on the different degrees to which the different organs of the body are impregnated with morphine. The mechanism by which the system rids itself of morphine appears to be an epithelial and endothelial desquamation of the impregnated mucous membranes. These processes may be renewed during six or eight weeks after abrupt withdrawal of the drug, and when complete correspond to a *restitutio ad integrum* of the affected organs. Assuming that these premises are correct, it follows that the stronger the reaction of the organism the more abundant will be the desquamation at first, and the more rapidly will organic regeneration be brought about, the more

quickly will the system renew itself in its elements, the more favorable will be the course of convalescence, the more completely will health be restored, and consequently all the more will the chances of a relapse be lessened. Just as in the infectious diseases, in which the return to health is more perfect, when the disease has pursued a more acute course, on the condition, of course, that the organism is in a suitable condition to react against the infection.

" Hence the object that one ought to propose to one's self in treating a patient with morphine habit is to favor as much as possible the elimination of the altered glandular elements, to provoke the appearance of each secretion, if slow in appearing, or if it slackens its work when begun or stops too soon. To meet these indications it suffices to excite glandular activity by every known method, while at the same time lessening the quantity of morphine. Purgatives, diuretics, and diaphoretics ought to be used concurrently. Under the influence of these medicines, and the rapid diminution of the quantity of morphine, the resumption of glandular activity begins before complete removal of the drug is enforced. The effort of the organism at this time is therefore less intense, the emunctories being already prepared. Hence it results that the heart is not forced to perform excessive work, and the pain provoked by the reaction of the organism, striving to free itself of its altered elements, is reduced as much as possible.

" Dr. Sollier since using this method has not observed even in patients with diseased hearts any signs of heart failure or syncope, and still less has he been confronted with the collapse which frightens so many morphine-takers when trying to get cured, and physicians who have not had any experience in such cases. When the morphine-taker is thus prepared for weaning, not only is there no serious accident to dread, but it is useless to give him any heart tonic, such as sparteine or caffeine, for heart failure need not be apprehended. When, on the other hand, weaning from morphine is begun without hav-

ing taken previous precautions to prepare for glandular elimination, one is exposed to what may be called a false elimination of morphine.

"Dr. Sollier explains as follows: Weaning from morphine should not be confounded with elimination of the drug from the system. Weaning may be put in force, but elimination may not follow. Should this occur, convalescence does not take place, or else comes on in a slow, torpid manner, and besides even fatal results may happen. To illustrate this point, two cases are selected from several others, which we give in Sollier's own words: 'I was summoned one day to see a physician, a morphine-taker for several years, who was finally obliged to give up his habit in order to continue his practice. Not wishing to go to a hospital he had undertaken to treat himself at home, and naturally adopted the slow method. He lessened the quantity of morphine for six weeks in a progressive manner, until he was taking from a third to half a grain of morphine a day. But he was extremely weak; he was constipated the whole time, and had lost appetite and sleep; was nervous, and his heart was irregular in action; he suffered from a general atony, and the bodily functions, instead of resuming their offices owing to a reduction in the quantity of morphine, were slower than ever. Threatened syncope appeared, when he wished to stop the morphine entirely. After having treated him in the manner described above, I prepared him for weaning. Everything passed without an accident. After eight or ten days the patient began to regain his appetite and enjoy a little sleep, and I thought he was out of danger. But at this juncture the heart, exhausted by six weeks of slow suppression, exhibited the phenomena of myocarditis, which caused death in three days. Nothing in his organic condition justified such a result, which was simply the outcome of exhaustion produced by the long struggle of the heart and of the organism to bring on elimination, which did not occur. In spite of what may be said to

the contrary, slow discontinuance of morphine is more exposed to accident and more dangerous than abrupt stopping of the drug.

"'In the second case the results were happier and the demonstration still more conclusive. The patient was also a physician, a morphine-taker for twenty-five years, and sixty-three years old. Obliged to suspend his lectures and his occupation on account of weakness, many of his colleagues advised him to stop the use of morphine at once. He made the effort at his own house. But total stoppage of elimination occurred: constipation was obstinate, and pains of a hyperæsthetic character all over the body prevented sleep or rest. Appetite was abolished, and alimentation became more and more impossible. To get rest injections of chloral were given, but without results. After a month the condition of the patient was unchanged, emaciation was very marked, and weakness was notable. It was concluded to call in my services for fear of a rapidly fatal issue. I easily discovered, that if the patient was weaned from morphine he was by no means eliminating the drug. I began, therefore, the same as if weaning had just been commenced, and proceeded to excite the functions of all the glandular organs of the body. Everything happened just the same as if we were dealing with a morphine-taker, who had begun treatment the day before. After ten days he got up. Appetite returned, and, after two months and a half, he was able to resume his work, having gained twenty-six pounds in weight, recovering his appetite, sleep, and strength.'

"Dr. Sollier is opposed to the use of other hypnotics when treating a morphine-taker, and does not, therefore, use napelline or phosphate of codeine. Adjuvants, such as sparteine and caffeine, are sometimes used if the heart is weak. Antipyrine and bromide of potassium are used when there is a tendency to cerebral congestion. He is totally opposed to the use of sulfonal, bromidia, chloral, etc., and thinks that sulfonal is the most dangerous drug in this category.

"The rational treatment of morphinomania, according to Sollier, consists in provoking and favoring as much as possible, the secretions of all the glands, in depriving the patient of the drug as soon as possible, in avoiding subsequent interference except to keep up elimination, and observing the patient through all the period necessary for glandular regeneration."

"Dr. Davis has been investigating the subject in the alcoholic wards of Bellevue Hospital with the ophthalmoscope, and has brought out some interesting facts. In every one of the sixteen cases examined the blood vessels of the retina were found to be abnormal. Instead of being pale and almost invisible, as in their ordinary condition, they were dark, almost black, with congested blood. The blood vessels of the retina, which are so small and semi-transparent in perfect health that they are projected into the field of vision, and their movements seem like the twisting of snakes. Of course, with a brain half paralyzed or partially excited, the active circulatory condition of the fundus of the eye may assume to the diseased imagination almost any form."

"It is said that 94 per cent. of visual hallucinations in delirium tremens consist of snakes or worms, in one form or another."

WOOD SPIRIT IN PHARMACEUTICAL PREPARATIONS.

A reader inquires of the editor of the *Chicago Medical Standard* if wood spirit or methyl alcohol may safely be employed in the manufacture of medicinal products. The reply must be that from present knowledge of its properties such use of wood spirit is unwarranted. This product has, however, reached in one brand such a state of refinement that it is doubt-

less being used to some extent, the incentive being in the fact that its cost is less than one-half that of grain alcohol. Prof. W. A. Puckner, of the Chicago College of Pharmacy, in a recent article (*Western Druggist*, December, 1897) quotes Pohl as finding that the administration of methyl alcohol to animals causes narcosis which is frequently followed by persistent comatose intoxication, a condition not brought on by ethyl alcohol. He also finds that methyl alcohol is quite largely changed to formic acid before complete elimination and that it reaches its maximum three to four days after the administration of the alcohol.

Contradicting the results of Pohl, Schlossberger, experimenting with pure methyl, ethyl, and amyl alcohol, finds:

(1) The effects of methyl and propyl alcohol are very similar to those of ethyl alcohol, producing intoxication in small, and coma in large doses, and that the amyl is scarcely more potent than the methyl compound.

(2) Like ethyl, so methyl and propyl alcohols are rapidly decomposed in the blood.

(3) The action of the three alcohols upon the mucuous membrane was found to be alike.

(4) Whether methyl and amyl alcohol yield and introduce into the circulatory system formic and valerianic acids — Bouchardat and Sandras believe to have shown that traces of acetic acid occur in the blood of animals fed with food soaked in ethyl alcohol — could not be definitely proven. Valerianic acid was never found, the traces of formic acid noted were too minute to produce deleterious effects. Similarly Dujardin-Beaumetz and Audige, and quite recently Picaud have demonstrated that the effect of the monatomic normal alcohols is the same in quality, differing only in degree or quantity, and that the toxicity increases with an increase in their molecular weight.

Prof. Puckner concludes as follows:

"From the above it would seem that the toxic effects of methyl alcohol, if not the same, would rather be less than

those of ethyl alcohol. To verify this, a quantity of pure methyl alcohol was prepared according to the method of Woehler, and of this doses of 30 cc. were taken by me two or three times a day, the effects noted being such as would be caused by an equal or smaller quantity of grain-alcohol. Thus, at 7 P. M., when 30 cc. were taken, the pulse was 78, temperature 98.8; at 7.20 P. M., pulse 86, temperature 98.8; at 7.40, pulse 76, temperature 98.6.

"While we may thus conclude that the effects of pure methyl alcohol will correspond to those produced by its homologue, nevertheless it is quite possible that impure wood-alcohol contains some highly toxic constituent, thus explaining the poisonous properties commonly ascribed to wood-alcohol. As impurities of wood-alcohol, Kraemer and Grodzi mention little; aldehyd, dimethyl-acetal, allyl alcohol, 0.1 per cent.; acetone, methyl-ethyl-keton, and higher acetones. The only constituent present in sufficient amount to be poisonous would seem to be acetone, and since methyl alcohol comparatively free from this is now in the market, it is presumably also free from the poisonous properties ascribed to wood-alcohol. Supporting this proposition, I have experienced no unpleasant effects from doses of 30 cc. of a commercial methyl alcohol, containing about 0.5 per cent. of acetone, when taken internally. Further doses of 15 cc., taken at intervals of thirty minutes, until six doses, or a total of 90 cc., had been taken, left the temperature of the body normal, at first somewhat accelerating, later slightly depressing the pulse — i. e., producing the characteristic effects of ethyl alcohol.

"In view of the foregoing, it seems probable that the physiological effects of pure alcohol, as well as the purified, nearly acetone-free brands now sold, will in moderate doses correspond to those produced by ethyl alcohol in quality, and, if not less, will not exceed the same in quantity or degree.

"I do not favor or recommend, however, the introduction of methyl alcohol as a solvent or menstrum in pharmaceutical

preparations until extended experiments have shown the desirability of such an innovation. It is safe to predict that methyl alcohol will eventually be given a place with the solvents used in pharmacy, just as its utility is recognized in the arts and in chemical industries, but it would be futile to propose its use wherever ethyl alcohol is now employed, when its solvent properties, as is well known, differ so widely from those of ordinary alcohol."

OFFICE TREATMENT OF HEMORRHOIDS, FISTULÆ, ETC., WITHOUT OPERATION. By Chas. B. Kelsey, A.M., M.D. New York: E. R. Pelton, 19 E. 16th Street. 1898.

This little volume contains three sections devoted to the following topics: The Cure of Hemorrhoids, Fistula, Fissure, and Other Affections of the Rectum by Office Treatment without Operation; On the Relation between Diseases of the Rectum and Other Diseases in Both Sexes, but Especially in Women; On the Abuse of the Operation of Colostomy, or the Formation of an Artificial Anus. The book is not very clearly written, although Dr. Kelsey has previously shown himself master of a very lucid style. The procedures advocated are described with precision, and the work is helpful and very useful to the general physician.

The *Scientific American*, of New York city, is always welcomed in every home, and the fireside of thinking men, who would know of the rapid advances along the lines of science.

THE TEMPERANCE QUESTION FROM A BIOLOGICAL STANDPOINT. By G. Archdall Reid, M.B., of Suthsea, England.

Is an attempt to explain the drink question, from a so-called biological point of view. However one may differ as to the conclusions, it is clear the author is not familiar with

all the facts, and his generalizations are narrow and fail to recognize the studies of our association, and the many new truths of the drink problem.

The *Homiletic Review* has always attracted much attention among scholars for its broad, liberal treatment of religious and ethical topics. While its style is literary, its subjects are treated very clearly and along lines of every-day thought. We have always urged this as work for the table of thinking men, and one of the few magazines that would be read. Send to Funk & Wagnalls, New York city, for a copy.

The value of *Appleton's Popular Science Monthly* is most appreciated by its constant readers. Every issue contains papers of absorbing interest to medical and all scientific men. In both October and November numbers are papers by physicians, professors, and leaders of science. Some of them are new and very original discussions of topics that are startling in practical applications to every-day life.

MONKS AND THEIR DECLINE. By Rev. George Zurcher, pastor of St. Joseph's Church, Buffalo, N. Y.

This little brochure is a very interesting historical review of the Monks and their habits of living, down to the present. The object appears to be to show that the Monks have steadily declined in every way, and do not represent the modern Catholic Church. In this country the Benedictine Monks at Beatty, Pa., have persisted in brewing beer for years against the protests of the church, and under a special permission from the Pope. This has been the cause of much bitter controversy, and the author, Dr. Zurcher, shows that the Monks have not kept up with times in matters of total abstinence and earnest living.

This little work has many very interesting facts, which are new to general readers. Send to the author for a copy.

Editorial.

CAN MODERATE DRINKERS BE CALLED INEBRIATES?

The term "moderate drinker" is so widely interpreted by different persons that unless the exact meaning is given much confusion will follow.

Usually, this term describes persons who use spirits regularly or otherwise with no apparent effect on their appearance or conduct. The use of spirits at meals regularly, and at other times during the day, is not uncommon among active workers. These are called examples of the moderate use of spirits. Many persons who use spirits in this way are considered temperate and of sound mind and body. This opinion is founded on a very superficial knowledge of the person and his acts. While it is possible for certain persons to use spirits daily for a very long time, and not seem to be impaired or changed by the use, it is evident that they are exceptions; and a closer acquaintance and study would reveal degenerations and changes not suspected.

Thus, in one case where an active banker had used spirits for nearly thirty years, nearly every day, at his death strong evidence of his enfeebled mind was clear in his will, and the property left.

A second case is that of a lawyer of more than average ability, who drank for twenty years in so-called moderation and was found at his death to have been a defaulter and receiver of stolen goods.

A third case of a farmer who died at seventy, after thirty years of constant drinking in moderation, without exciting the least suspicion of mental change, was found to have had concealed delusions and to have been a maniac for years.

In a careful inquiry of many persons, I have never found an example of a moderate drinking man who was not more or less unsound in both mind and body. In many instances the psychical and physical injuries from spirits may be concealed and covered by automatic conduct of the person and the uniform surroundings and conditions of life; but it exists in some form or other.

It can be stated positively that the steady use of spirits, even in so-called moderation, is always followed by states of mental degeneration; also that no man can be of sound mind and body when using spirits steadily.

This fact has recently been emphasized by some startling disasters which were traceable to the enfeebled brains of persons who were so-called moderate drinkers. It would seem that the term "inebriates" would better describe their real condition.

An engineer, old, tried, and capable, in commercial language, but who used spirits regularly in small quantities every day, failed to see a danger signal and to slow up his train at a dangerous point. As a result: an accident, ten lives lost, many wounded, the engineer killed. This was his afternoon run, after he had used the usual amount of spirits at dinner. He was called a temperate man; no one had seen him under the influence of spirits; and yet, unaccountably, he had run by a danger signal at high speed into a train ahead, which he could have seen, naturally, in time to prevent an accident. He was an inebriate and his mind failed at an unexpected moment.

A captain of an ocean steamer, with the helm in his hand, ran into a ship and sank in mid-ocean without an effort to save himself or his passengers. He seemed to become an imbecile at once and lose all reason and judgment. He was a moderate drinker, and for years had been considered capable, wise, and efficient. No one ever suspected he had drank to his injury. On this last voyage he used spirits as usual, and seemed in no way different. He was an inebriate unrecognized, because his

conduct was uniform, and gave no external evidence of change; and yet he persisted in using spirits regularly.

A bank president, of irreproachable character, suddenly became a defaulter, ran away, and finally was sentenced to prison. The act was extraordinary in its imbecility and stupidity, and was unaccountable. He was a moderate drinker of many years' duration, never using spirits except at stated times, and never appeared to be under the influence or to be injured by it in his conduct.

In the civil war, a general ordered a charge which was fatally repulsed, and followed this with an imbecile order of retreat which, by an accident, was only saved from becoming a disastrous rout. He was replaced and this act was explained as due to other causes to conceal the real facts. He was a moderate drinker, never intoxicated, but using spirits every day, and also a man of experience and ability. He died of apoplexy a few years after, and was literally an inebriate.

These instances are illustrative, and by no means uncommon. The conclusions point to moderate drinking as an exceedingly uncertain condition, always associated with mental feebleness and states of insanity. The constant use of spirits may be followed by more positive brain injury than the occasional excessive use, and in all instances is more perilous because concealed.

Among active brain-workers the steady use of spirits, even in small quantities, is found by experience to be followed by more disastrous results in acts and conduct, than in the periodical drinker. The farmer or business man who uses spirits regularly and dies after a reasonably long life, not manifesting any particular mental changes, is an exception to the rule. Accidental circumstances in their physical organization and surroundings have prevented a recognition of their weakness. Uniform surroundings and automatic conditions of life and living often conceal it, but change this and the real condition of the moderate drinker will appear.

To call all moderate users of spirits inebriates would seem to be an extreme statement, and yet a careful study of the best of these cases reveals many startling facts of both physical and mental disease. The continuous use of alcohol is beyond all question poisonous, not in any narrow or limited way, but in the continuous palsy and derangement of nutrition and nerve force.

Practically, the continuous drinker is more generally diseased and more difficult to restore than the excessive and periodic user of spirits. It would seem to be a mere matter of degree between the moderate and the excessive drinker, with the very uncertain factor of being unable to determine the extent of the degeneration in the moderate drinker.

The experiences of many persons confirm the statement that no moderate use of spirits is compatible with health or mental soundness, and moderate drinkers may be called in many cases veritable inebriates.

INEBRIETY IN THE LATE WAR.

A great variety of evidence seems to be accumulating from many reliable sources, which shows that much of the sickness and mortality in the late war is due and traceable to the free use of spirits in camp and in the field.

Instances are given of regiments whose sickness and mortality rates were double that of others living in the same general conditions. Some regiments in the field suffered severely from fevers, with greater mortality, and seemed less able to resist the hardships of the campaign. One of the prominent causes, very clear in some instances, were the drinking customs of the men. In such cases canteens had been liberally furnished, officers and men drank at all times and places whenever they could procure spirits. When in the field they found Spanish liquors and used them freely. It is asserted by a leading medical director that every regiment that had a canteen

doubled its sickness and mortality rates, both in the field and in camp. Another eminent medical man in the field writes: "The sickness and mortality of returned soldiers could be traced in many instances to previous beer and spirit drinking. The men who used alcohol in any form suffered most from fevers with a very large mortality." The same experience was repeated, viz., that moderate or excessive users of spirits are the most unfit to bear strains and drains, suffer most from disease, have less vitality, and die sooner than others.

Some statistics are being collected to show the fatality following the use of beer and spirits in camp and field, which will add a new illustration to the constantly recurring experience in both civil and military life. Several competent observers have described instances of most serious mistakes by officers under the influence of spirits; blunders and failures, from which grave consequences followed, were traceable to men who were drinking at the time. An officer who should have carried out an order, drank brandy to give him strength, neglected the duty, went to sleep, and, when called in question, claimed illness from malaria. Another officer plead sunstroke and exhaustion by the heat, for neglect of duty, and many similar excuses only covered up the mental disability due directly to alcohol.

The common charges of incompetency, now so frequently mentioned, are said to be due to spirits in many instances. The natural unfitness was farther intensified by the anaesthesia of spirits.

Another curious phase of the alcoholized mentality of the war is the bitter criticism by both officers and men, of acts and events, the men complaining of ill treatment, and the officers of bad management, and the press exaggerating these charges to the degree of criminality. Two instances are related where the bitter critics were steady drinkers, whose integrity was worthless, and yet they obtained the public attention and credence by very serious stories.

It is to be expected in all large bodies of men, that some inebriates and disreputables will complicate and embarrass the natural work to be accomplished, but the intelligence of the present demands that these influences should be in the minority, and that the authorities should protect men in the camp and field from every dangerous influence. Alcohol, and the delusions of its power, should be recognized to be a source of danger of as great a magnitude as the bacterial poisons of typhoid and malaria. If railroads and large corporations, employing many men, make total abstinence a necessary qualification, how can armies be expected to do effective work on any other basis?

There can be no doubt that, above all criticism and all question, the influence of alcohol has been prominent in many ways in the failures and mistakes of the conduct of the war. Beyond this, and more apparent and traceable, alcohol has been more prominent, both directly and indirectly, in the sickness and mortality which has followed the troops in both camp and field.

THE STATE CARE OF PAUPER INEBRIATES.

The number of pauper inebriates in this country is increasing, and the greatest confusion prevails in the methods of care and control. Punishment by fine and imprisonment makes them more helpless, and finally the almshouse is the last and most expensive form of treatment.

The inebriate who drinks constantly at every opportunity, either in moderation or excess, according to circumstances, is demented and forfeits all right to personal liberty. He is dangerous to the peace and good order of the community, and should come under restraint. If he holds property, a guardian should be appointed to care for it, and prevent him from wasting it and becoming a charge on the community. He should be declared in court an incompetent and placed under the restraint of a guardian to regulate his life and conduct. If

without property, he should be legally restrained in a state or county workhouse hospital, where he would be forced to live normally and have industrial training, with rewards and obligations, and be permitted to leave on parole and to show his capacity to abstain from spirits. Where no industrial hospital exists, such persons should be boarded out with farmers and others, who would be responsible for their care and control, the court requiring a bond and exercising supervising care over the case. Practically, it should be the same system as in Belgium and Scotland, where mild lunatics and paupers are boarded out with farmers in the country. Where the inebriety is periodical, with distinct free intervals, the court should recognize the insanity of the attack, and restraint in hospitals be provided until the attack is over. If the person has property the same legal control by the court and guardian should be provided.

These cases, both pauper and those able to pay, should be under legal control, have a central residence, and not be allowed to become tramps wandering about. Workhouse or industrial hospitals should be formed in every county or large city, and paupers of this class should be housed and made self-supporting, while undergoing care and treatment. Forcible restraint and control, with healthy labor in the best sanitary surroundings, would permanently restore a certain number of these cases, and, by isolating them from the community, remove sources of loss and contagion that are and should be preventable. The tramp inebriate should be declared a lunatic, dangerous to the community, and be kept in isolation and forced to live rationally. The pauper inebriates who live around saloons and low centers of large cities, should come under legal restraint as dangerous, both personally and hygienically. They are both criminals and lunatics, scattering disease and forming centers of contagion and peril to life, health, and the good order of the community. The inebriate pauper, either as a tramp or a fixed product in the community,

is more dangerous than any lunatic because of the unknown element, and concealed power for injury to the community. The inebriate who has pauperized his family, destroying all means of support, and incapacitated himself, is the most culpable, and should be under legal care at once. Industrial hospitals, where these persons can be forced to be self-supporting, are realities awaiting development. The present irrational, expensive methods of treatment are only sustained by delusive theories, and are opposed by experience and all scientific study. A great revolution must follow along these lines, and the tramp problem will be solved by isolating the inebriate.

AUTO-INTOXICATION IN INEBRIETY.

Experience shows that the most successful treatment of acute and chronic inebriety depends on elimination of the waste products of the body. Delirium subsides in many instances after profuse sweating and a free catharsis. Abstinence and a change of diet check the drink craze. The food cure, the water cure, and mineral salts and acids, all have been found useful in stopping the desire for drink. In these and other instances the most reasonable explanation is the removal of poisons formed in the body and introduced by alcohol.

The subsidence of the acute symptoms by elimination seems strong evidence of the presence of toxic compounds, which are thrown off by these means. Recently chemists have discovered that albumoses and peptones formed during normal digestion are often poisonous; also that certain extracts from animal tissues have a coagulatory effect on the blood, and they have verified the presence in living tissues and in the dead, of alkaloidal bodies of toxic nature. Martin has shown that the poison of diphtheria is a product of our bodies under the stimulus of a peculiar bacillus. A number of equally startling facts seem to support the claims of auto-intoxication in melancholy paralysis, and forms of insanity.

Clinical therapeutics also gives strong support to this view. The poisonous conditions which follow from the use of alcohol are undisputed, and the probability that toxine in the system produce states of exhaustion, for which alcohol is found to be a grateful narcotic, is very reasonable. Evidently degeneration and perversion of function comes from the presence of some toxic agent unknown, and this hypothesis seems the best in our present state of knowledge. There is a strong probability that these toxines in the body are more dangerous to the inebriate than the contagion to use alcohol from without.

A man who drank continuously whenever exposed, after free elimination by baths and through the bowels, with correction of nutrition, had no desire for spirits. Neglect of these means for a short time caused a return of the drink symptom. Beer-drinkers are most markedly benefited by the elimination treatment, and, reasoning from analogy, the assumption is sustained that such persons are poisoned from sources both within and without.

It may be assumed that these auto-poisonings are present in all cases of inebriety, and that the treatment given should always be based on this assumption. An extended examination of the excretions of the inebriate would reveal the toxines present. This should be done daily, covering the period of alcohol-taking and abstinence from its use.

PRACTICAL EXPERIMENT.

John Cabot, a merchant, thirty-four years of age, with a family, began to frequent saloons and to neglect his business. It was evident that he would soon be a pauper and his family must soon be supported by the town. He was declared in court an habitual drunkard and a guardian appointed over his property. He was placed under the care of a physician in the country, and six months later returned home restored.

For two years he continued his business under guardianship, then this was removed, and four years later he was prosperous, and a sober, most reputable citizen.

In a neighboring town, a prosperous farmer fell heir to a large property. Soon after he began to frequent horse races and drink in fast company. He lost largely and drank to greater excess. My advice to take his property out of his hands was considered harsh and unreasonable. Four years of entreaty and persuasion by his wife and friends to stop drinking finally ended in total bankruptcy. Later on, he was arrested as an accomplice in crime, sent to prison, and died. His family were literally pauperized and scattered, dependent on their friends and the community for support.

These two cases illustrate the practical, common-sense view of treatment, and the stupid, delusive theory of the self-treatment by the inebriate.

Six years ago I testified in court that a man was an inebriate lunatic and irresponsible. The judge decided otherwise, and my opinion was severely condemned. This man continued drinking and lost his property, and is now a paretic in an almshouse. His family are scattered and pauperized.

THE INTERNATIONAL CONGRESS AT PARIS IN APRIL, 1899.

Eighteen years ago the leading temperance men on the continent met at Brussels and organized an International Temperance Congress. The members were largely medical men, teachers, and government officials, with a few philanthropists and clergymen. The leading questions discussed at this congress were: the best means of obtaining distilled liquors which contained pure alcohols, the physical action of pure artificial alcohol; also the best methods of preventing the use of poisons in mixed drinks. A committee of scientists and physicians presented an elaborate report on this subject at the next con-

gress, two years later. The third congress was held in Antwerp in 1885, and the questions of the effects of wine and distilled spirits were discussed. In 1887 a very large congress of members from all the continental countries met at Zurich, and the nutritive value of wine and spirits was discussed. The next congress was held at Christiania in 1890, and the saloons and education of the people were discussed. The next meeting at Hague condemned moderate drinking. Two years later, at Basle, a still larger meeting took up advanced ground on prohibition and total abstinence as sanitary and scientific questions. At Brussels, in 1897, this congress brought out a large number of the medical men and teachers of Europe. The dangers from the use of alcohol, and the perils from and the remedies for inebriety were the leading subjects. The condemnation of alcohol, except as an anesthetic by leading medical men and teachers, was very prominent. France was shown, from statistics, to be the most drunken country in Europe; more spirits were consumed per head and the assertion was made "that France was rapidly becoming a nation of inebriates."

This congress and its reports have roused a grand interest, in all the scientific and sanitary centers, and the problems connected with it are subjects attracting a great deal of attention.

A preliminary program for the next congress at Paris in 1899 has been issued. Dr. Lagrand, the president, is an eminent specialist, superintendent of the government insane asylum, and author of "Mental Medicine." The last congress comprised four hundred delegates and was in session three days. The coming congress will be much larger and will be divided into four sections. The first will discuss educational methods, temperance teachings in schools, and various moral causes of prevention. The second section will take up the social and economic question of the drink evil: its medicinal and hygienic aspect, the action of alcohol on the body, and its influence in sickness and mortality. The third section

will study asylums for inebriates and their medical cure, and treatment by drugs and hygienic means, and other measures. The fourth section will be devoted to preventive means and efforts to increase habits of total abstinence, the formation of temperance restaurants, and the work of societies to help on the growth of total abstinence. It is quite clear that this program will bring out many new facts and advance the subject materially.

EDITORIAL NOTES.

Dr. Rosebrugh's paper on the treatment of inebriates suggests a very practical plan for the immediate care and treatment of acute inebriates. An alcoholic ward, in city and local hospitals, where restraint and medicine can be used, would show to the public the practical nature of such efforts, in the cure and prevention of a certain number of cases. This would be a simple, inexpensive way of proving the value of medical treatment, and would soon create a demand for a farm hospital. We commend this plan to our Canada friends as the beginning of a most practical work.

It is certainly encouraging to hear the greatest criminologist of the day give it as his opinion that "the world is not going down hill. No, mankind is getting better rather than worse." Such is the conviction of Prof. Cesare Lombroso, the illustrious Italian who has made criminology a life-study. His wonderful prophetic knowledge of criminals and his strength of character are illustrated by the position he took in 1879, in the case of the crazy cook, Passanante, who attempted the life of King Humbert in Naples. Lombroso held that the assassin was driven to his deed by the suggestions of a diseased imagination.

"'Kill him!' cried the multitude. 'Away with him to punishment!' echoed the authorities. 'No!' said Lombroso, 'send him to an insane asylum, for he is mad.' Instantly there arose a storm of denunciation against the man

who dared suggest that the assailant of the king should escape punishment. Experts, so called, were not lacking to testify that Passanante was perfectly sane and completely responsible for his acts. Lombroso was aroused. With perfect coolness and unanswerable logic he pointed out the errors of the experts, insisted that the criminal was not responsible for his act, and that he ought to be corrected, not punished. Passanante, he said, was suffering from a particular form of insanity known as the '*folie de persecution*.' But no one would listen to him. All over Italy he was violently attacked, denounced as an enemy of mankind, ridiculed, laughed at, and cried down. They sent Passanante to a dungeon. Thirteen years later, when the storm had blown over, a commission of alienists examined the prisoner, found that Lombroso was right, pronounced Passanante a lunatic, and sent him where he should have gone in the first place, to an asylum."

ALCOHOLISM IN CHILDREN.—Dr. Combe, of Lausanne (*Annal. de Méd. et Chirurg. Infant.*), summarizes as follows: (1) A wet nurse who is accustomed to drinking wine may continue the same to moderation during the period of nursing. (2) A wet nurse who has not been in the habit of indulging in alcoholics must not receive any during the entire course of the nursing period. (3) An alcoholic mother must not nurse her child. (4) Nervous children and those who are suffering from an organic nervous disease must refrain absolutely from alcoholic drinks. (5) Very young children must never receive any alcoholic drinks, except in cases of acute diseases in which alcohol is indicated. (6) Total abstinence should be insisted upon until at least the sixth year. From the sixth to the twelfth years children may occasionally drink a small quantity of very diluted wine. (7) Total abstinence is indicated in the case of older children who are wayward, lazy, and weak in memory. (8) Hereditary alcoholism favors idiocy, epilepsy, and insanity.

Clinical Notes and Comments.

ALCOHOL AND NARCOTICS — HABITS OF APPLICANTS FOR LIFE INSURANCE.

By L. D. White, M.D., Uxbridge, Mass.

In considering a man's habits there are many things to be thought of besides his answers to your questions. No examiner should content himself with the applicant's story without taking some means to satisfy one of its truthfulness, particularly if the patient be a stranger to the physician. While we are not infallible, we should take all proper means to avoid error in this very important part of our report. We can quite readily detect the chronic alcoholic by complexion or general appearances, but the beginning drinker may so carefully conceal his condition as to entirely hide his secret vice. For this reason we should very carefully inquire of some uninterested person, and ascertain concerning the associates and places frequented by the applicant. It is a very good rule to consider a man as an average morally with his associates, particularly if they be a little off color. Of all perilous risks the moderate drinker is the most dangerous, for the simple reason that no drinker was ever moderate for any great length of time. Most applicants ask for insurance as a safeguard for a family when married life is still young. In these cases, where the patient is between 20 and 35 years of age, we have that period of life where a habit is most liable to become permanent. The young man in his "teens" may reform, while the old man may be restrained by a matured judgment; but the man of 25 or 30 is generally just feeling the extra strain and worry of

increased care and business responsibility, and takes a stimulant to enable him to grapple with the heavy drain upon his system which will never be less. As the care grows, so will the habit. Avoid all indefinite statements with reference to the amount of stimulant taken, and especially its character. The man who tells us of a glass of beer occasionally will own to a glass of whisky semi-occasionally, if closely questioned. Much may be learned by ascertaining how the habit first began. If he was brought up to do it, "because father did it," then you can expect to find a physical organization inherited from a drunken parent. If he drinks because "the boys all do," then you will suspect venereal disease contracted because "the boys all do, and the girls, too." Then we have to remember that venereal disease, especially syphilis, is fanned into a flame by alcohol. In the matter of tobacco, there is much importance in ascertaining the kind used and the method of using it. The finer the quality of the weed, the more marked the effect upon the nervous system. Two 50-cent Havana's will stimulate the heart action more than a dozen "three for five's." It is generally believed that chewing is worse than smoking, and the pipe worse than the cigar. The cigarette is deadly from the large number used, as well as from the habit of swallowing the smoke.

With opium, chloral, and cocaine the physician should rarely be deceived. The typical appearance of these habitués is too well known to need description. If a man has used a narcotic as a habit for any length of time, and even then reformed, he still remains a dangerous risk. Statistics show that over 70 per cent. return. While opium is injurious and in all ways a curse to the patient, it is not as rapidly deleterious as chloral and cocaine. Their course is steadily downward, until the nervous system is a complete wreck. Narcotics should be carefully looked for whenever the applicant has at some time recovered from a long and painful illness, and more especially if he has been under the care of one of those good

old family physicians, who do so love to relieve the patient's distress without taking pains to search for the real cause of the malady. Right here, permit me to digress enough to say to our younger brothers, that in the use of opiates in the relief of pain one rule should always be kept in mind:

Do not disclose the form of narcotic used and do not leave the patient after continuous use of an opiate until you know that it has not been used for several days after the indication for its use has disappeared. — *Atlantic Medical Weekly.*

The following selection from the excellent address of Dr. Harvey, President of the Virginia State Medical Society, at their last annual meeting, is a most timely caution:

"Our prisons, asylums and homes are filled with the victims of the careless and indiscriminate use by the medical profession of those twin demons, alcohol and opium, which, save tuberculosis, are doing more to debase and destroy the human race than all the other diseases together. I most earnestly beseech you, young men, who are just starting out in life, to stay your hand in the use of these agents in your own persons, and in your daily work, and to beware of the seductive needle, and the cup that inebriates. Make it an invariable rule, never to prescribe alcohol nor one of the solinaceus or narcotic drugs, if you can possibly avoid it. The use of alcohol and opium debases the minds and morals of habitués, predisposes especially to Bright's disease and insanity, and lays the foundation in the offspring for the majority of the neuroses and degenerations of modern civilized life. The physical fatigue of long working hours, loss of sleep, mental strain, worry and hunger, invite the tired physician, especially, to their seductive use. To totally abstain from them is always business, and very often character, and even life itself. I feel free to speak to you on this subject very earnestly, my younger brothers, for, having prescribed alcohol for over thirty years, I am familiar with its tendencies and its dangers."

CATALOGUE CASE No. 58. CHRONIC ULCERATIVE GASTRITIS.

Sarah M——, Hartford, Conn.: American; age 30; admitted July 4, 1898. Had suffered with chronic gastritis for five years, under various treatments, including digestive ferments, and washing of stomach, without any continuing relief. July 5th, I washed out her stomach with a plain salt solution, and from the washings took some of the mucus and gave it a careful microscopic examination. I found much desquamated epithelium, with red and white blood cells. From this I decided that there must be some points of ulceration, and determined to employ an exclusive bovinine treatment. Consequently, patient was put on a teaspoonful of bovinine in boiled milk, preceded by a tablespoonful of lime water, every two hours. The first dose was vomited; the second caused some disturbance, but was retained; the third was retained, without any inconvenience, and patient said it seemed to give her great ease. In twenty-four hours the bovinine was increased to a tablespoonful every three hours, in a wineglass of milk; still preceded by the lime water. This was continued to the 25th, bowels being kept in condition by the use of elixir purgans. On the 25th, patient said she was entirely free from pain, and very anxious to try solid food, having lived on nothing but bovinine and milk since treatment began. Decided to try a light general diet, and ordered nurse to have some beef finely chopped and broiled, and served with a little dry toast, milk, and bovinine. She ate every bit, and suffered no bad result, and in five hours was hungry again. But I allowed this only once a day, not wishing to bring about a possible check to the uninterrupted and complete cure that was advancing so happily. From the 25th on, the bovinine was increased to a wineglassful in a glass of milk, every three hours, and this seemed to remove the craving for other food, the appetite being appeased. However, I still allowed the chopped beef and toast once a day. August 8, 1898, case was dis-

charged cured, with a gain of three and three-quarter pounds in weight, and feeling perfectly well, as she expressed it.

Unquestionably, the most active cause of rheumatism, as well as of migraine, sick-headache, Bright's disease, neurasthenia, and a number of other kindred diseases, is the general use of flesh food, tea and coffee, and alcoholic liquors. As regards remedies, there are no medicinal agents which are of any permanent value in the treatment of chronic rheumatism. The disease can be remedied only by regimen, — that is, by diet and training. A simple dietary, consisting of fruits, grains, and nuts, and particularly the free use of fruits, must be placed in the first rank among the radical curative measures. Water, if taken in abundance, is also a means of washing out the accumulated poisons.

An individual afflicted with rheumatism in any form should live, so far as possible, an out-of-door life, taking daily a sufficient amount of exercise to induce vigorous perspiration. A cool morning sponge bath, followed by vigorous rubbing, and a moist pack to the joints most seriously affected, at night, are measures which are worthy of a faithful trial. Every person who is suffering from this disease should give the matter immediate attention, as it is a malady which is progressive, and is one of the most potent causes of premature old age and general physical deterioration. American nervousness is probably more often due to uric acid, or to the poisons which it represents, than to any other one cause. — *J. H. Kellogg, M.D., in Good Health.*

THE INEBRIATES ACT, 1898.

The government, among other proofs of their activity desiring to secure a trial under favorable conditions of the Inebriates Act, which is to come into operation on January 1, 1899, have appointed a departmental committee to advise

the home secretary on the regulations for state and certified inebriate reformatories, to be established under the act. The members of the committee are Mr. P. W. Byrne, who was formerly private secretary to Sir Matthew Ridley; Dr. Donaldson, commissioner of prisons; and Dr. Brayn, medical superintendent of Broadmoor Criminal Asylum. The secretary is Mr. G. A. Aitken, of the Home Office. It is to be hoped that the borough and county councils will be up and doing in the exercise of their powers, singly or in combination, to establish and maintain certified inebriate reformatories, in order that judges and juries may be able to have reformatories to which to send habitual drunkards who, in terms of the act, may be remitted on a fourth conviction for petty offenses complicated with drunkenness. Philanthropy, it is also hoped, will come to the aid of the certified inebriates' reformatories, which can be founded partly from public moneys and partly from voluntary effort. To the British Medical Association is due, in considerable degree, the enactment of the act, and credit belongs to the government for introducing and carrying the measure. Failure to provide ample reformatory accommodation would be a national disgrace. The eighteenth report of the inspector of retreats is of special interest at the present moment. Dr. Hoffman reports only one death during the year 1897. The number of patients had gradually increased from 130 in 1895 to 166 in 1896, and to 183 in 1897. The inspector cites extracts from reports by the licensees of the Dalrymple Home, Street Court, Tower House, Royal Victoria Home, Kingswood Park, and St. Veronica retreats, all of whom strongly express an opinion in favor of the power of compulsory reception and curative detention. A regular annual citation of similar recommendations by those officials who have had considerable experience in directing retreats must increase the volume of public opinion in favor of compulsion. There can be no doubt that in substitution of the attestation of a voluntary request for reception and detention in a retreat by one justice only, an amendment to take effect next New Year's Day, will, with other amendments, greatly increase the value of the original Inebriates Act of 1879.

Prof. Kräpelin described the results of his recent research in regard to the effect of alcohol, at the annual meeting of the German Society against the abuse of alcohol. His conclusions explain the peculiar phenomenon noted by Exner in 1773, that when a person under the influence of alcohol is ordered to perform a certain movement, determined beforehand, following a certain external stimulus, he thinks that he performs it easily and promptly, while scientific measurement of the time elapsing between the stimulus and the movement proves a considerable delay in the response. Kräpelin finds: 1, that the perception of impressions received by the senses is much retarded by the influence of alcohol; even a small amount, ¼-½ liter beer, will suffice for this; 2, the combination of ideas is much slower; processes of thought are altered; speech becomes more and more prominent; "thought spreads out in a level"; 3, the voluntary movements occur much more easily and rapidly. This explains the contradiction between the objective record and the subjective impression in Exner's tests; the movement occurred more readily and rapidly, but time had elapsed before the stimulus was perceived. Observation in everyday life shows the correctness of these scientific data. The effect of alcohol on the psyche lasts more than twenty-four hours, often several days. Leixner accused the medical profession of the responsibility for the spread of the use of alcohol, and others observed that there is more adulteration and fraud in the so-called tonics and invigorating alcoholic beverages sold than in any other class of goods. Much amusement was caused by the arraignment of several members of the congress for having imbibed a few "tenths" of beer with their lunch, which led to a clearer statement of the purpose of the congress: to combat the *abuse* of alcoholic drinks, although Kräpelin's research has converted him to "total abstinence." — *From Report in Deutsche Med. Woch., September 15th.*

The *Maltsyne* is coming into favor wherever used, and will, no doubt, lead all the other preparations of malt, leaving them far in the rear. The combination with hypophosphites of iron and manganese is found to be very valuable in nervous dyspepsia.

Fellows' Hypophosphites have come into the old-time saddle-bags of the country physician. It is carried about with quinine and calomel as of equal value and necessity.

Horsford's Acid Phosphates goes to all countries of the world. Wherever civilization and commerce finds a foothold it is called for and is used.

It is a significant fact that in the great dark belt of consumption in New England, Wheeler's Tissue Phosphates are most used and sold by all druggists.

How frequently you hear the expression "The record of years," but it is a very indefinite expression. It may mean two, ten, or twenty years. *Pond's Extract* has the record of fifty years behind it, and, like virtuous old age, looks back on a well-spent life. Few, indeed, of the productions of those early days have survived. Improvement being the order of the day, old ideas and goods are relegated to back seats, in the ordinary course of events. How perfect, indeed, then must *Pond's Extract* be, to continue, as it does, the prime factor of the family medicine chest!

We take great pleasure in calling attention to *Arsenaruro* and *Hydraruro*, standard preparations by Charles Roame Parke & Co., of New York city. They are simply new and more palatable forms of drugs which have been recognized for centuries as the most valuable remedies known to science.

Geo. W. Samuel, M.D., Nashville, Tenn., says: "I had a case of a man who had been drinking heavily for several days.

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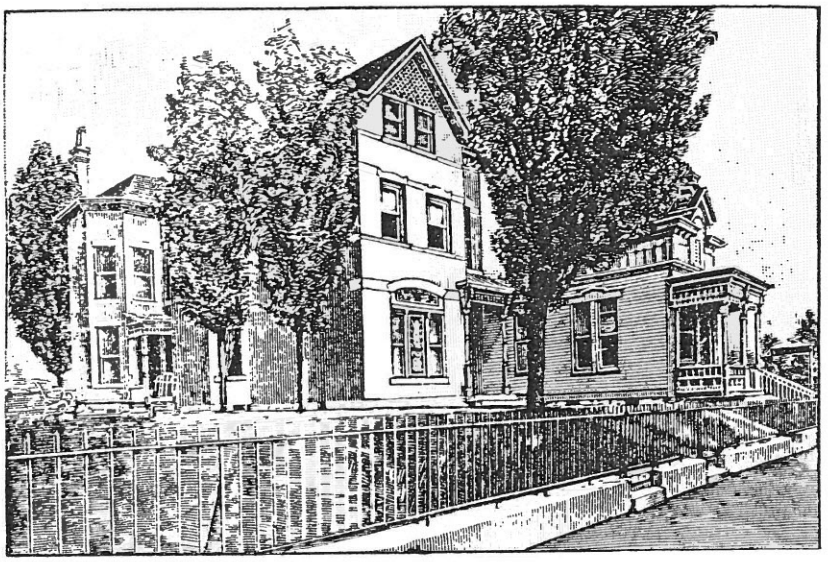

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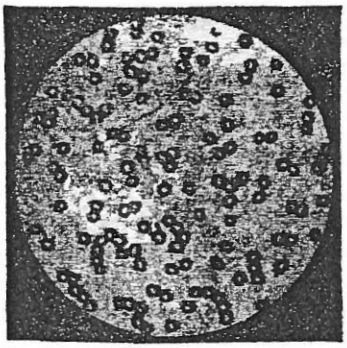

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