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INDEX, VOL. XIX, 1897.

A.

	PAGE.
Association, First Meeting, its Members,	I
Asylum for Inebriates in California,	70
Alcoholism in Children,	88
Alcoholism in the Growth of Children,	100
Alcohol when given to Children,	103
Alcoholic Intoxication in a Child,	123
Alcoholism and its Treatment,	162
Alcohol increased Expenditures,	195
Asylum for Inebriates,	206
Alcoholism as a Disease,	253
Alcohol on the Nervous System,	287
Art to Increase the Drink Impulse,	318
Abbott, Dr. A. C.,	384
Alcohol, Opium, and other Narcotics,	420

B.

Bovine in Inebriety,	89
Beverage or Medicine,	96
Bradner, Dr. N. Roe,	270
Brush, Dr. E. N.,	289
Burrall, Dr. T. A.,	303
Bell, Clark, Esq.,	369

C.

Crothers, Dr. T. D., 19, 79-87, 203-213, 301, 315-324, 374, 416,	418, 420, 425, 427, 428
Cocainists, Confessions of,	54
Coffee, Toxic Effects of Large Amounts,	62
Cigarettes,	69
Cocaine Poisoning,	91
Compulsory Curative of Inebriates,	111
Cocaine Poisoning, Symptoms, Magnan,	161
Chlorodyne, Beware of,	197
Congress at Brussels,	210
Clay Inebriates,	212
Charlatan Efforts to Cure Inebriety,	270
Complete Blindness due to Overdose of Jamaica Ginger,	344
Case of Dementia and Alcoholic Mania,	374
Conclusions of Papers Presented at International Congress,	389

	PAGE.
D.	
Degeneration from Toxic Drugs,	65
Delirium Tremens, Responsibility of,	72
Davis, Dr. N. S.,	82, 162
Disease of Personality in Inebriety,	86
Dalrymple Home,	282
Dangers of Alcohol,	296
Drink and Insanity,	300
Degeneration Race in Inebriety,	301
Diet in the Treatment of Inebriety,	427
E.	
Epilepsy, Alcoholic,	236
Ellsworth, Dr. V. A.,	278
H.	
Huntly, Dr. W.,	30
Historical Address on the Journal of Inebriety,	19
Heredity,	97
Herter, Dr. C. A.,	123
Hutchinson, Dr. M.,	184
Hypnotic Suggestion in Inebriety,	187
Howard, Dr. W. S.,	236
Home for Inebriates, First,	278
Hall, Dr. H. J.,	306
How far is Inebriety Influenced by Stringent Times,	399
Hasheesh (Cannabis Indica) Inebriety,	402
I.	
Inebriety from Inheritance,	68
Inebriety, Disease of Personality,	86
Inebriety Cured by Bovine,	89
Inebriety, is it Inherited,	92
Insanity and Inebriety,	95
Inebriates, Compulsory Curative Treatment,	111
Inebriates, Prison Treatment,	142
Inebriates, Moral Types and Characteristics,	152
Inebriate Paupers,	169
Inebriate Asylums — Foxboro,	185
Inebriety, Cure by Hypnotic Suggestion,	187
Inebriates, Homes in England,	191
Inebriety, New Law relating to it,	198
Inebriety in Infancy,	208
Inebriety from Snuff,	211

Index.

V

	PAGE.
Influences of the Seasons on Inebriety,	315
Insanity and Inebriety,	318
Inebriate Mobs and Agitators,	320
Inebriety and the Penal Law,	329
Inebriety among Young Men,	380
Influence of Acute Alcoholism on Rabbits,	384
Inebriate Heredity in Crime,	410
Inebriate Delusions,	416
International Anti-alcoholic Congress,	425

J.

Judicial Evolution as to Criminal Responsibility,	369
---	-----

K.

Kerr, Dr. Norman,	72, 111
-----------------------------	---------

L.

Law relating to Inebriates,	198
Lett, Dr. Stephen,	264

M.

Mason, Dr. L. D.,	1, 169
Morphinomanics, Civil Capacity,	102
Moral Characteristics and Types of Inebriates,	153
Mason, Dr. Osgood,	187, 219
Morphine Habit, its Treatment,	226
McPhedran, Dr. Alexander,	242
McMichael, Dr. George H.,	253, 380
Morphine Habit,	311
Mistakes in Diagnosis of Inebriety,	412
Moral Palsy,	428

N.

Nicotine, Effects of,	132
Neuritis, Peripheral,	242
Nicotine,	287
Neurology,	413

O.

Opium Addiction, is it a Disease,	30
Organic Memories,	81
Opium Poisoning and Pons Apoplexy,	96
Opium in India,	354

	PAGE.
P.	
Prison Treatment of Inebriates,	142
Pitcairn, Dr. J. J.,	142
Palmer, Dr. C. F.,	152
Phenomena in Intoxication,	203
Psychology, New School,	209
Procedure with Inebriates,	298
Phase of Inebriety,	322
Pitcairn, J. J.,	329
Pathology and Treatment of Chronic Alcoholism,	393
Phenomena of Mescal Intoxication,	404
Pathogenesis of Delirium Tremens,	409
R.	
Rugh, Dr. J. T.,	62
Report for Asylum of Inebriates,	70
Reformed Men as Asylum Managers,	79
Robertson, Dr. J. W.,	226
Rudolf, Dr. R. D.,	354
S.	
Searcey, Dr. J. T.,	65
Syphilis and Paresis,	98
Seaver, Dr. J. W.,	132
Shattuck, Dr. Geo. L.,	198
Sunstroke in Inebriates,	207
Stimulants, Vaso-motor,	214
Suggestion as Remedy in Inebriety,	219
Stimulants, Danger from Nerve,	241
Suggestion in the Treatment of Inebriety,	303
Study of Effects of Alcohol in Schools,	418
T.	
Tuberculosis and Cardiac Alcoholism,	44
Tussey, Dr. A. Edgar,	44
Tea Cigarettes,	69
Tobacco, Rare Effect,	93
Treatment of Inebriates in Austria,	99
Tobacco and its Influence,	102
Tobacco and the Eyesight,	225
Treatment of Inebriety in Russia,	235
Treatment of Inebriates,	306
Thomson, Dr. A. G.,	344
W.	
Walnut Lodge Hospital Report,	179
Why Do Men Drink,	264

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INEBRIETY AND THE PENAL LAW IN EUROPE
AND THE UNITED STATES.*

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From the earliest times drunkenness has been regarded as exhibiting a greater or less degree of moral turpitude according to the special point of view of the individual observer, and the drunkard has been made the subject of special laws and regulations with all peoples. In this paper I propose to review the present state of the penal laws among the principal civilized nations, with regard not only to simple intoxication, but also as the degree of responsibility attaching to acts committed while in that state.

It will be found that the attitude of most communities towards drunkenness presents certain marked features of resemblance. The public drunkard is usually regarded as a public nuisance, which is sought to be abated by fine or imprisonment, or, perhaps, by both together. Again, although the habitual drunkard is of universal incidence, his existence has hitherto been almost entirely ignored. That this is the case is evident from the condition of the statute books and codes of

* Read before the English Society for the Study of Inebriety—July, 1897.

all countries, which, with the exception of Austria, and, in a modified degree, Germany, prescribe few or no adequate means of dealing with him, save the now discredited plan of imprisonments. In these two countries it is true a method exists for dealing with habitual drunkenness when it has occasioned prodigality or insanity. But then it is too late to save either the drunkard, his fortune, or his family. At best, the procedure is very cumbersome, and does not admit of the drunkard being placed under restraint while there is still hope of his reformation.

This comparative impotence of the law is, no doubt, due in many instances to a blind worship of so-called "liberty." It is a survival of the times when no special disgrace attached to intoxication, and when to get drunk was considered as natural an action as going to bed. That is to say, if the art and literature of the eighteenth century may be taken as trustworthy guides to the manners and customs of our forefathers.

I have been often struck, for instance, with the enormous extent to which drunkenness figures in Hogarth's works. It is true that the artist depicted a horrible scene of sordid dissipation in his "Gin Lane." But this work largely depends for its effect upon the squalid lives and surroundings of the men and women seen there. In the "Rake's Progress," too, other causes are apparently considered to be the reason of the hero's ruin, the drunkenness being regarded as quite a necessary event of everyday life. In fact, these pictures are in no sense of the word an attack upon drunkenness in the abstract, and it is very doubtful if even such a keen observer as Hogarth ever quite realized what an appallingly drunken set of people were those among whom he lived.

To look further afield, the habit of drinking in Germany appears until quite recently to have been associated with the very nationality of the people who raised tipping to the level of a fine art, if not of a science. They drank on every possible occasion and on the slenderest pretext, and the man who abstained was regarded among all classes as a simpleton.

Poet after poet sang the joys of imbibition, and Luther (himself an instinctive sensualist) was the author of an aphorism — “Who loves not wine, woman, and song will remain a fool though he lives to be a hundred.”

Among all civilized nations the last half-century has seen a great change. Inebriety is unanimously regarded by the continental psychologists as a mental disease requiring compulsory seclusion. The publicists, on the other hand, have demonstrated the relationship between crime and alcoholic excess. The habitual drunkard has thus assumed a national, as opposed to an individual, importance, and although it has remained, as I shall show, for Austria to take the initiative in seriously grappling with the problem, public opinion is now ripe for a similar reform elsewhere.

I commence the examination of the subject with our nearest continental neighbor.

France. The existing law concerning alcoholism was passed in 1873. By this, involuntary or accidental drunkenness, unless incurred with felonious intent, is considered to be an extenuation of a criminal act.

Scandalous drunkenness is punishable by a fine of one to five francs. If repeated within twelve months, the culprit may be sentenced by the correctional tribunal to a fine of sixteen to three hundred francs, and imprisonment from six to thirty days, a third offense entailing the maximum of these penalties. Any person who has been thrice convicted may be declared incapable for two years of exercising “civil rights,” which include that of the franchise, the serving on juries, or in any other public capacity, and the right to carry arms. This sentence is published in such manner and places as the court may direct.

Tavern and restaurant-keepers serving minors below the age of sixteen, or persons already intoxicated, are liable to a fine of one to five francs, and, on a second conviction to the extreme penalties and loss of civil rights incurred, as described above, by the drunkard himself. The latter heavy punish-

ment is at once visited on any publican, etc., who allows a minor below sixteen years of age to become intoxicated.

The effects of intemperance have of late years become accentuated in France, owing to the widespread consumption of *absinthe*. Alcohol in this form is gradually superseding the comparatively innocent native wines, and is considered to be an undoubted cause of epilepsy, paralysis, and even insanity.

There are at present no asylums for inebriates in France, but the question has latterly been forced upon public attention. It has been proposed by Dr. Muteau, President of the *Societe de Temperance* to treat inebriety in ordinary asylums on the ground of its being a more amenable form of mental disease.

Germany. The German beverages are for the most part light, hence the abuse of alcohol is not quite so disastrous in its effects as it is among other nations. Nevertheless, the government, as might be expected from the generally paternal nature of its legislation, has devised stringent measures for the suppression of intemperance. It has increased the taxes upon liquor and sought to prevent its adulteration. Public necessity for the establishment of new taverns must be shown to the satisfaction of the police who make local rules for Sunday and holiday closing, and drastic regulations to prevent the encouragement of drunkenness, gambling, or juvenile drinking.

By the common law responsibility does not attach to a criminal act if the offender was at the time in a condition of unconsciousness or derangement by which his free-will was suspended. Although intoxication is not specially mentioned other states of unconsciousness are difficult to prove legally. Voluntary and complete drunkenness, therefore, does not extenuate an offense, but if incomplete or accidental it may do so.

The penal code confines itself to provisions intended to discourage alcoholism, and to impress the drunkard with the shamefulness of his conduct. The 361st article decrees that those wholly abandoning themselves to gambling, drunkenness, or sloth, fall into a condition which obliges the authorities to interfere for their protection, shall be imprisoned for one to

forty days. Persons so sentenced may be employed at local gaols at work suited to their powers and social position. If the offender is a stranger in the locality he may be expelled the district on his release. Any person interfering with the public rest at night by creating a disturbance through intoxication may be similarly punished. Persons who become drunk while employed in an occupation requiring special care to avoid endangering the lives or health of others may be fined fifty marks or be imprisoned for eight days.

In some districts, notably Baden, the Prefect may formally caution drunkards who are a public scandal or who neglect their families. If this is ineffectual he may prohibit them from entering a tavern or obtaining liquor under pain of 150 marks fine and six weeks' imprisonment, together with a fine of 100 marks to any person supplying them.

Finally, habitual drunkards convicted under the section already cited may be "interdicted" or practically declared to be minors, and deprived of civil rights much after the manner of the French code. At the expiration of their sentence in the local gaol, they are transferred to a hard-labor prison, and there employed on works of public utility for two years or more.

Until 1891 jurists had regarded the legislative suppression of drunkenness as impracticable. But in that year the congress of German jurists recommended the establishment of compulsory asylums. The oldest inebriate asylum in Europe is that of Lintorf in Rhenish Prussia, which was founded in 1851. It receives an average of seventeen patients per annum, who are employed at agricultural pursuits. The cures are estimated at 25 per cent., although the directors complain much of patients discharging themselves before a permanent cure has been effected. This is the only purely inebriate asylum in Germany, other establishments which have since sprung up receiving cases of moral insanity, as well as dipsomania.

Austria. By the penal law an unintentional crime committed during intoxication is not punished, but the intoxication itself entails under these circumstances a sentence of six

months' hard labor, especially if the offender knew by experience that he was apt to become violent when in that condition.

The code punishes by a maximum of a month's imprisonment the inveterate drunkenness of workmen or those employed in dangerous trades. Any person found drunk in a public place is liable to a month's imprisonment or a fine of 50 florins. If three convictions occur within a year, the recidivist may be prohibited under the same penalties from frequenting taverns during a period usually of twelve months. The same law enacts that a debt contracted for the sale of drink cannot be recovered. Inn-keepers serving persons already drunk, or children unaccompanied by their elders, are liable to a month's imprisonment and a fine of 50 florins, and, on further conviction, to a loss of their licenses.

The "curatel" law, which has attracted much attention of late, only dealt indirectly with the drunkard as a "spendthrift" or an "idiot." In this respect it was identical with the German "interdiction," and was, of course, open to the same objections. But a law has recently been enacted for the compulsory detention of drunkards alone in special asylums. These will be organized for an average detention of two years. Voluntary inmates will be received on condition of their agreeing to rules identical with those applying to the convicted patients. The sentence of incarceration will be pronounced by the usual correctional tribunals and will be subject to appeal. The same authority will decide the fees to be paid by the patient and the date of his discharge, which may be conditional under a ticket-of-leave. A relapse under the latter condition will forfeit the claim to a definitive sentence. Three convictions for drunkenness during twelve months, drunkenness the cause of actions dangerous to the individual or others, or drunkenness which has produced mental deterioration, will alike be considered reasons for incarceration. Alcoholic liquors may be absolutely excluded, and their introduction punishable by six months' hard labor.

Hungary. The penal code decides that a person shall

not be responsible for acts committed during a state of unconsciousness or when his moral sense is obscured by the suspension of his free will. It follows then that an accused person ought to be acquitted if at the time of the act he was undoubtedly intoxicated, and negligence arising from a state of intoxication, as in the case of a railway servant omitting to make the proper signals, should be similarly excused. In practice, however, the determination of the exact degree of intoxication is of the least importance, and such a condition is seldom regarded as more than an extenuating circumstance.

Scandalous drunkenness in a public place is punishable by a fine of 25 florins, and double that penalty is incurred by any person causing the intoxication of another in a tavern or public place. An inn-keeper knowingly serving with liquor a drunken person, or one below the age of fourteen, is liable to a fine of 100 florins, with the addition, on a second conviction, of the canceling of his license for a year. The public intoxication of officers of the state, professional men, or the clergy, is visited with exemplary penalties. It is to be observed, however, that the foregoing regulations are not carried out thoroughly, owing to the scarcity of the police in rural districts.

By the civil code debts exceeding eight florins incurred for the supply of intoxicants are non-recoverable. No notorious drunkard may become a guardian or trustee, and persons of prodigal or dissipated habits may, on the application of their nearest relatives, be placed under the guardianship of the courts, which will, if necessary, administer their estates. This procedure is, in fact, a modification of the Austrian curatel.

Inebriate asylums are at present unknown in Hungary.

Holland. The penal code, although it does not expressly name drunkenness as an extenuation, absolves from the consequences of acts due to disease or insanity, or when the crime is unpremeditated and the culprit has been deprived of his reason by the act of another.

Drunkenness endangering the lives of others is punishable by at least six days' imprisonment and a fine of 25 florins.

Public drunkenness by a fine of 15 florins, and second or third offenses within six months by imprisonment for three, fourteen, or twenty-one days. Publicans supplying drunken persons, or children under sixteen, forfeit their licenses. This is a heavy penalty, as licenses being strictly limited in proportion to the population are of corresponding commercial value.

There is at present only one asylum for inebriates at Hooghullen.

Belgium. The penal code entirely ignores drunkenness as an extenuation of criminal acts.

Scandalous drunkenness is punishable by a fine of one to 15 francs, increased to 25 francs for a second offense within six months, and for a third offense in the same period to 75 francs fine and 7 to 21 days' imprisonment. Persons endangering the lives of themselves or others by their drunkenness are liable to fines of 15, 25, or 75 francs for repeated offenses, accompanied by 4, 7, or 28 days' imprisonment respectively. Innkeepers serving drunken persons or children under sixteen are fined 5, 10, or 50 francs for repeated offenses within twelve months. Any person causing the drunkenness of a minor may be fined 25 francs, or 50 for a second offense, the fines being doubled in the case of innkeepers, etc. Whoever causes by intoxication an illness preventing another from earning his livelihood is liable to two years' imprisonment and a fine of 1,000 francs, the penalties being quintupled should death ensue.

The payment of wages in taverns and the sale of intoxicants, except in licensed premises, are punishable by a fine of 25 francs. By the civil code, debts incurred for the supply of intoxicants are non-recoverable.

There are no special asylums for inebriates.

Sweden. Drunkenness does not exonerate from crime, the penal code only exempting a person from the responsibility for criminal acts committed in a state of insensibility due to no fault of his own. Should the offender incur the death-penalty, and although not in the fullest possession of his facul-

ties (from age, or disease of body or mind), be still considered partially responsible, the punishment is reduced to hard labor for six to ten years. Public drunkenness is punishable by a fine of twenty-six dollars and detention until sober.

The above penalties may appear trivial when compared with those enforced in other countries, but it is necessary to remember that Sweden is the home of the special legislation known as the "Gothenburg system," which claims to absolutely prevent drunkenness.

The manufacture of brandy has always been an important branch of Swedish agriculture, and until 1855 each landed proprietor possessed his own distillery. The evils resulting from the system at length induced the government in that year to suppress all but a few stills, which were placed under the control of civil officials, who were forbidden to sell a less quantity than 250 litres of spirit at one time. This is, of course, only sold to the innkeepers, whose retailing of it is controlled by severe licensing regulations.

The "Gothenburg system" was introduced in 1865 in order to do for the towns what the law had effected ten years previously for the country districts. The system acts through the agency of philanthropic institutions called *Bolags*, which buy up spirit licenses, and either extinguish them altogether, or place managers in charge of the taverns at fixed salaries, and with no pecuniary interest in the sales. The profits are handed to the municipality, which devotes them to purposes of public utility, chiefly for the benefit of the working classes. No person under eighteen years of age, nor one already intoxicated, may be served: high prices are charged for the spirit, which is reduced in strength and absolutely free from adulteration: no liquor can be obtained on credit. The taverns are closed after 7 p. m. on weekdays, and entirely on Sundays and holidays, and special attention is paid to their hygienic surroundings.

Norway. As in Sweden, offenses committed during a state of insensibility are punishable, unless the condition arose from no fault of the culprit.

The code contains no reference to drunkenness, and if occurring in public places, its treatment is simply an affair of local police. A revised code is now under consideration, which contains severe penalties for this offense, together with the legalizing of asylums for the compulsory seclusion of inveterate drunkards. At present there exist only two private establishments of this nature.

As in Sweden, private stills were at one time universal in the agricultural districts, but in 1840 the government suppressed the majority and assumed the direction of the remainder. In 1871, inspired by the example of Sweden, the "Gothenburg system" was introduced by societies called *Samlags*, and was carried to even greater lengths than in the land of its birth. Thus, the managers of the taverns are encouraged to push the sale of non-alcoholic liquors; they must be persons of the highest character; they are liable to dismissal should they allow drunkenness; customers are forbidden to smoke, talk loudly, or even to remain on the premises after they have once been served; no seats are provided — doubtless to render the observance of the latter rule less difficult — but to compensate for the absence of comfort the walls are plentifully hung with texts and moral maxims. By a law of 1894, the *Samlag* may be established in any district by a *plebiscite* of both sexes, above the age of 25.

But in spite of all these efforts secret drinking is very rife, and the working classes, unable to gratify their passion for alcohol otherwise, are large consumers of ether, naphtha, and even spirit-varnish!

Denmark. The code decides that a person whose reason is too enfeebled for him to understand the nature of a criminal act shall not be held responsible for it, but the courts decline to include alcoholism in this category.

Drunkenness is very prevalent, but the regulations concerning it being more fiscal than penal have little deterrent effect.

Licenses to publicans are issued by the state, subject to the favorable report of the local authorities as to the applicant's

character, etc. The latter also have the power of limiting the number of taverns in proportion to the population. They are closed at 11 p. m., daily, and altogether on Sundays and holidays.

The serving of children under sixteen or of persons already intoxicated is prohibited, and a drunken person may be conveyed by the police to his own home at the expense of the publican, at whose establishment he was last served.

No inebriate asylums exist in Denmark at present.

Switzerland. The penal codes of the several Swiss cantons regard the responsibility for acts committed during intoxication from different standpoints. Some only allude to insanity, others to involuntary unconsciousness, ignoring willful drunkenness, while others again appear to contemplate the latter when using the terms, "free-will," "settled purpose," or "criminal intent." Still others explicitly mention drunkenness as an extenuating circumstance, unless deliberately incurred for a criminal purpose.

Most of the cantons punish scandalous drunkenness by fine and imprisonment, and many of them prohibit the offender from entering a tavern or being supplied with alcohol, during a period varying from one to five years.

The purchase, importation, and sale of alcohol in bulk is a government monopoly, the proceeds being applied to the reduction of taxation. The purity of the spirit is thus assured while its sale is checked by the high price exacted. The individual cantons have absolute power in restricting or limiting the number of taverns, and the town of Basle has established a modification of the Gothenburg system." Although the consumption of alcohol has in consequence of these measures decreased enormously, there is still a very large illicit manufacture of the poisonous *absinthe*, of which, indeed, the "best" is said to be produced in Switzerland.

In 1890 the canton of St. Gall accomplished a revolution by the establishment of compulsory inebriate asylums open also to voluntary inmates. The period of detention is nine to eight-

een months, the communal council being the committing authority on medical evidence being furnished of the necessity of detention for effecting a cure in the dipsomania. If the patient is possessed of property it is debited with the cost of his maintenance, but in case of poverty the state defrays all charges, and will even support a family deprived in this way of its bread-winner.

There are in other parts of Switzerland six private asylums for inebriates, four being for men and two for women. Speaking generally, they are all organized on the plan of agricultural colonies.

Italy. Accidental drunkenness, if complete, confers absolute irresponsibility for a crime, and if incomplete ranks as an extenuating circumstance. Voluntary drunkenness, if complete, is an extenuation: if incomplete, it is still so, but in a less degree. Even the incomplete intoxication of an habitual drunkard is held at some exoneration, but as the degree is not specified, it is presumably not far removed from complete responsibility.

Scandalous public drunkenness is punishable by a fine of thirty lire (about 25s.). If habitual, by a month's detention in gaol or at the public works, at the discretion of the judge. Supplying liquor to drunken persons or to children below the age of ten entails ten days' or a month's imprisonment, respectively. The number of taverns are limited at the sole discretion of the municipal authorities.

There are no inebriate asylums in Italy, although an abortive attempt in this direction was made at Milan in 1886.

Spain. Intoxication is held to be an extenuating circumstance for a criminal act when it is not habitual, or if it occurs subsequently to the conception of the offense.

Scandalous drunkenness is punishable by a fine of five to twenty-five pesetas (four to twenty shillings). The native wines being consumed to the almost entire exclusion of spirits, intemperance is less common and does not cause the serious maladies observed in other countries.

Portugal. Drunkenness is regarded as an extenuating circumstance for a criminal act, if the crime is unpremeditated and the intoxication not induced for the purpose of committing it.

Scandalous drunkenness is punishable by eight days' imprisonment, increased to ten, fifteen, and thirty days for repeated offenses.

Neither in Spain nor Portugal do there exist any special asylums for inebriates.

Greece. By the criminal code no responsibility attaches to acts committed in a state of absolute drunkenness.

Drunkenness itself is not punishable in Greece, since it is a very rare vice, probably from the mildness of the climate, and the lightness and purity of the native wines.

As might be expected, there are no inebriate asylums.

Russia. The penal code decides that drunkenness caused by the offender himself is no excuse for a criminal act.

Scandalous drunkenness is punishable by a fine of one rouble (rather more than 3s.). Public functionaries are dismissed. Publicans serving children under eighteen or allowing drunkenness on their premises are fined two roubles, and for a second offense are deprived of their licenses. Inveterate drunkards who render themselves or their families destitute may be imprisoned in the local house of correction for an indefinite period.

Intemperance is very prevalent among the lower classes in Russia. For the last two years the government has taken the manufacture of *vodka* or corn-brandy under its own control, and issues it from crown stores with an official seal. A modified "Gothenburg system," with a moral rather than a benevolent object, has been introduced in many towns by the establishment of tea-rooms, and the keeping a watchful eye on the consumption of *vodka*.

There are no special inebriate asylums in Russia.

United States. The jurisprudence of the United States is largely modelled upon that of England, as the mother coun-

try. In consequence, voluntary drunkenness does not exonerate from the responsibility for a crime, although it is considered to exclude the idea of premeditation.

Scandalous drunkenness is throughout the states punishable by fine and imprisonment, and the illegality of serving minors or intoxicated persons, the non-erection of taverns near schools or churches, together with their closing on holidays and election days, is practically universal. In most states the habitual drunkard may be detained for an average period of two years in one or other of the numerous inebriate asylums.

The absolute prohibition of the manufacture or sale of alcoholic liquors has been adopted by the seven states of Maine, Vermont, New Hampshire, Iowa, Kansas, and North and South Dakota. The system was first introduced into Maine in 1851, and has since assumed the dimensions of a political question, largely owing to the influence of the female voters. In South Carolina alcohol can only be obtained at the so-called "Dispensaries," which may be established by local option in each township. In Ohio, under the "mulet law," no licenses are necessary, but a tax is levied on each liquor-seller. Simple local option exists in about half the remainder of the states.

It is worth noting that prohibition has not arisen in a country fired with the usual ardor of a convert to a new theory. Far from this being the case, America was the actual birthplace of the modern temperance movement. This was initiated in 1808 by Dr. Benjamin Rush of Philadelphia, sometimes styled "the American Sydenham," a man not more remarkable for his genius as a physician than for his patriotism and public spirit as one of the authors of American independence. To Dr. Rush we are also indebted for the idea of special inebriate asylums, although the first of these was only founded in 1864, in New York state. This aroused so much opposition at the time that it was soon after converted into a lunatic asylum. Since then, however, the idea has made so much progress that at the present moment there are no less than

forty of these establishments, the largest being situated at Boston, Brooklyn, and Hartford, respectively.

Discussion.

The President, after ten years' personal observation, could assure Dr. Pitcairn that the latter had been misinformed as to the alleged failure of prohibition in Maine and some other states of the American Union. Wherever enforced it had been successful. Dr. Kerr's host in Portland, Maine, and nearly all his American friends, while he was in that country, were opponents of prohibition, yet his host, Mr. Consul Murray, reported to the British Government that the Maine liquor law was successful in five-sixths of the state. He, himself, in those ten years, had seen only two women intoxicated in Portland, both indoors, whereas every Sunday he saw at least a dozen in London, some indoors, some out-of-doors. The leading opponents of prohibition had always admitted to Dr. Kerr, that certainly the law had very largely diminished drinking. The Society did not meddle with legislation, except as dealing with inebriety as a disease, but he (Dr. Kerr) could never refuse to testify to the remarkable success which he had seen attend the operation of prohibition in Maine. He was glad to state that, in 1900, the new German law would come into operation defining inebriety, which made a person unable to manage his affairs or a cause of danger to others as qualifying for interdiction and involuntary seclusion, with a view to the cure of the inebriate and the protection of the inebriate's relatives and the community. France was building a special asylum for inebriates, Russia was doing so also, and in Belgium narcomania was practically regarded as a variety of mania warranting compulsory detention.

Mr. Wilkinson said ether, methylated spirit, and "varnish" drinking had been effectually put a stop to in Ireland, by the government scheduling ether as a poison to be sold only by chemists, and the rendering more nauseous of the other compounds.

COMPLETE BLINDNESS, DUE TO ACUTE POISON-
ING FROM OVERUSE OF JAMAICA GINGER;
RECOVERY FOLLOWED BY TOXIC AMBLY-
OPIA OF ORDINARY CHRONIC FORM, WITH
EVENTUAL ATROPHY.*

ARCHIBALD G. THOMSON, M.D., PHILADELPHIA, PA.

The case about to be reported presents several interesting points, which may throw light upon or help to confirm some of our ideas on the subject of toxic amblyopias.

J. R., a sailor, 32 years, related that his mother and father were both dead, from causes to him unknown. Had had the diseases of childhood, but had never suffered from any serious disease. He denied absolutely any venereal disease. He had never been a steady drinker, but from his occupation as a sailor would abstain from alcohol for several months at a time, on reaching shore going off on a spree for a couple of days two or three times in the course of a year. He had been moderate in the use of tobacco, smoking weekly about four ounces in a pipe. His eyesight had always been good until about December 22, 1896, when he came ashore from a cruise and with a party of friends, being unable to procure whisky, got intoxicated with Jamaica ginger of the ordinary commercial kind sold in small country stores. This was taken, as whisky is, with water. The man remained drunk for two days, estimating that during that time he took about a quart and a half of Jamaica ginger. On the following day the man's feelings were similar to those that ordinarily follow an alcoholic de-

* Read before the Philadelphia County Medical Society, June 23, 1897.

bauch, though greatly intensified. Among other things he suffered from headache, nausea, and vomiting.

On the evening of the next day, the fourth from the first taking of the ginger, while lighting the lamp in the cabin, the man noticed everything to be hazy and vision failing, together with some photophobia.

By the next morning he could not see a lighted match held directly before his eyes, but had peripheral vision sufficient for him to grope around. By the following morning, however, light-perception had absolutely disappeared, both central and peripheral, and blindness was complete. This condition lasted for seven days, when vision began gradually to return, first in the periphery of the field; the man finally being able to read large print with great difficulty.

The time that elapsed between the period of complete blindness and the recovery of vision, the patient estimated at about four weeks. Matters remained thus stationary for three weeks, when vision again began to fail, now very slowly, until the present condition has been reached, three months and a half after taking the Jamaica ginger.

The anterior aspect of the eye is apparently normal, cornea and conjunctiva. The pupils are slightly dilated, but react both to light and in accommodation.

V. = R. Fingers at 1 meter.

V. = L. 1-100, eccentric.

On ophthalmoscopic examination the media are found to be clear. The discs are exceedingly pale, the capillaries being almost entirely absent. The portion of the discs occupied by the papulo-macular bundle of fibers (forming the lower and outer quadrant) is completely atrophied and greenish-white in color.

The fundus of each eye is otherwise normal. There is a well-marked physiological cup, and the absence of lymph from the vessels, showing the atrophy to be primary and not secondary to a previous papillitis.

There is no evidence of cerebral or spinal trouble (no locomotor ataxia or disseminated sclerosis) or hysteria.

The patient states that one of his friends, who accompanied him on his debauch, has also marked disturbance of vision, though in less degree. Under treatment this entirely disappeared.

On questioning the man more closely some three months after I first saw him, he stated that since his visual loss he has heard of several other cases in which the sight was affected by drinking Jamaica ginger, and that the practice of using this as a beverage is quite common in districts where it is difficult to procure alcohol.

The case presents thus, several very interesting features:

1. The uncommon nature of the agent producing the poisoning.
2. The suddenness of the attack of complete blindness.
3. The peculiar changes in the fields which correspond most probably with the pathologic condition that takes place in the nerve.

There is a difference of opinion between authorities as to whether alcohol adulterated with certain substances is more or less liable to produce toxic amblyopia. However this may be, I think it is generally conceded by all that the cheapest and worst kinds of alcohol are more likely to bring about this condition.

I have been unable to procure a specimen of the kind of Jamaica ginger taken by the patient, which he describes, however, as being the ordinary commercial kind; so I wrote Professor Remington of the Philadelphia College of Pharmacy, asking if he could inform me as to the ingredients contained. To my inquiries I received the following courteous reply:

“What is known as Jamaica ginger, or, more properly, essence of Jamaica ginger, is made in a very simple manner, by percolating the ground ginger-root with alcohol or alcohol containing water. The cheap trash found in country stores is often made with a portion of capsicum, in this way saving ex-

pense. You can see that a very little capsicum would take the place, in pungency, of a large quantity of ginger. Of course, sufficient ginger would have to be used to give a flavor to the decoction. Then, again, if it is made hot with cayenne pepper, a weaker alcohol can be used, and this would cheapen the product very much."

From the suddenness of the blindness, the profound condition following and the history of several other men being affected, it would seem as if the presence of foreign materials in the spirit would be the more likely to cause amblyopia.

The fields are most interesting, as I think they clearly indicate the pathologic process that has taken place in the nerve.

FIELDS.

Description of fields:

- A. Form field.
- B. Blue field.
- C. Red field.
- D. Relative scotoma for red.
- E. The heavily shaded portion, positive scotoma, both for form and color.
- F. Lightly shaded portion, relative scotoma (form is perceived badly, *i. e.*, white appears dirty, not clear, as in other portions of the field).

As no post-mortem examination has been reported in an acute case of this character, and as there is primary atrophy of the optic nerve, I take it that the following series of changes have taken place in the nerve: First, from the profound poisoning there resulted an acute interstitial retro-bulbar neuritis or effusion into the sheath of the nerve, affecting, as alcohol always does, the papulo-macular bundle of fibers and producing, most probably, at first a central scotoma, negative in character (that is, for colors and not for form), with the resulting blurring on the first day. As the neuritis or effusion increased and the pressure on the axis-cylinders became greater the scotoma gradually changed from negative to positive, and,

finally, became larger and larger, until it spread over the entire field, causing complete blindness. After the seven days of blindness, as the neuritis or effusion subsided, the pressure was relieved and vision gradually returned, with the exception of that effected through the papulo-macular bundle, which, owing to its depth in the nerve, was more seriously affected by the pressure. The renewed failure of vision, after three weeks, is to be attributed to a consecutive atrophy following upon the pressure exerted upon the axis-cylinders as a result of the neuritis. This sequence is clearly demonstrated by the interesting fields, showing the "breaking through of the scotoma," to finally meet the periphery of the field, indicating not only an atrophy of the macular bundle, but its extension to adjacent fibres. The portion of the field represented by the letter F shows that the fibres of this region have not undergone complete atrophy, but are damaged so that they will not respond with the same promptness to the vibrations of light as the other portions of the field.

Discussion.

Dr. G. E. de Schweinitz said that, so far as he knows, from an extensive acquaintance with the literature of the subject, the case reported is the first of toxic amblyopia following the abuse of Jamaica ginger, and the paper for the first time calls attention to the ocular lesions that may follow the excessive use of this drug. It is not surprising, however, to hear that optic-nerve atrophy may follow excessive indulgence in Jamaica ginger, although that it should come on acutely, as has been described, is worthy of special remark. Dr. de Schweinitz has been told by a college mate who lives on the northern border of Pennsylvania, that persons in the vicinity who cannot obtain whisky are in the habit of indulging excessively in the use of Jamaica ginger, and, as a result, there arises a species of drunkenness far more uncontrollable and disastrous in its effects than that which follows the free imbibing of alco-

holic spirit. Therefore, it is not surprising that the optic nerve should suffer in the way that has been described.

Dr. de Schweinitz referred to a case already reported, in which the visual fields closely resembled those described by Dr. Thomson, in which the disorder was due to the toxic effects of alcohol and tobacco combined, or else was a type of progressive scotomatous optic-nerve atrophy that may have resulted from inherited tendencies. Therefore, it is not surprising that the patient ultimately became entirely blind. An examination of the charts shows how closely they resemble those of Dr. Thomson's case, save only that the process has progressed much further and the atrophy has become more extensive. In fact, this patient ultimately became entirely blind. The scotoma, beginning in the center and representing disease of the papillo-macular bundle, gradually increased until it broke through and met a peripheral contraction of the visual field. Finally, the peripheral and intermediate bundles of the optic nerve became affected, and vision was gradually destroyed.

Although it is not known exactly what principle it is in alcohol, or, indeed, in any of the toxic agents, that causes these forms of amblyopia, it seems likely, in spite of some assertions to the contrary, that the poorer the quality of the alcohol, the more likely the development of toxic effects. Recently, Dr. de Schweinitz made an autopsy in the case of a man — the nineteenth — dead of pneumonia, who for some years before his death was a typical example of so-called toxic amblyopia, presenting the usual central negative scotoma. The specimens have already been demonstrated before the American Ophthalmological Society, but the charts show beautifully the circumscribed atrophy of the papillo-macular bundle throughout its entire course, the atrophy being ophthalmoscopically manifest as a quadrant-shaped patch of discoloration in the lower and outer portion of the optic disc, and, microscopically, as a degenerated bundle occupying first the lower and outer portion of the nerve, gradually reaching its axis, then sinking to the lower portion of the nerve, passing through the chiasm.

and finally losing itself in the optic tract. There is some doubt as to the exact pathology of cases like this, that is to say, whether the atrophy is primary or is preceded by neuritis. Dr. de Schweinitz holds that there is an interstitial neuritis, with thickening and changes in the inter-fascicular septa, which then press upon the nerve fibres and destroy them. The process has been compared with the sclerosing inflammation found in chronic hepatitis of alcoholic origin. Recently a theory has been revived by Nuel that the primary effect of these poisons falls upon the ganglion-cells of the macular region, atrophy of which is followed by an ascending degeneration of the optic nerve. While both clinical and experimental evidence goes to prove that atrophy of the ganglion cells of the macula does cause degeneration in the papillo-macular tract, a case like Dr. de Schweinitz', in which the ganglion-cells were normal, indicates that they are not always the starting point of the disease, but that alcohol, tobacco, or whatever other drug may be regarded as the toxic agent, or else the toxin that it liberates in the system, may sometimes, and, probably, usually, affect primarily the fibres of the optic nerve. Recent investigations, particularly in Chicago, by Casey Wood, Klebs, and Turek, indicate that certain toxins may be liberated in the stomach, that, in turn, have the power of causing blindness. It is a curious fact that tobacco amblyopia almost never occurs unless there exists marked gastric disturbance, or, at all events other disturbances than those merely connected with sight. Its victims frequently suffer from insomnia and chronic indigestion. This is noteworthy because Dr. Thomson's case, which really was a form of poisoning with a mixture of bad alcohol, poor ginger, and cayenne pepper, may perfectly well be explained, if this theory is accepted, by the hypothesis that some active toxin was liberated which was the mischievous agent. Dr. Thomson's communication is a most important and interesting one, and adds not a little to existing clinical knowledge of the interesting subject of the toxic amblyopias.

Dr. Edward Jackson said that he had had an opportunity

of seeing Dr. Thomson's very interesting and instructive case, which is, perhaps, not so far removed, however, from the more common cases of toxic amblyopia as it might at first seem. Certainly, some of such cases are quite sudden in the onset. Dr. Jackson has never had one that he could watch within the first week of the appearance of symptoms; but he has seen several in which there was a very definite history of quite a sudden impairment of vision, sufficient to interfere very much with ordinary occupations, and which coming under observation within two or three weeks showed the typical symptom-group of toxic amblyopia; so that while the history of this case is one of very much greater suddenness and severity than that of the ordinary case, it is a difference not radical, but rather in degree.

Dr. Jackson further called attention to the fact that in some cases, particularly in a series published in the last number of the *Royal London Ophthalmic Hospital Reports*, by Dr. A. H. Thomson, recovery is sometimes much delayed, although from the appearance of the optic discs there is not likely to be much improvement in this case.

In the series of cases referred to, one was under treatment for a whole year without material improvement; yet at the end of the second year full vision had been recovered.

Dr. de Schweinitz has stated the current diverse views of the pathology of this condition. Dr. Jackson's own feeling is that *if* these narcotics act directly, although that is an important *if*, with the supposition of autoinfection that has recently been introduced, the most plausible theory is that which regards the nerve elements as suffering first, and in some cases it would seem that the nerve elements at the macula suffer before the macular bundle, that is, that the involvement of the nerve is secondary.

Dr. William Thomson said that he had seen this case and had only to corroborate all that was said about it. It is of particular interest because it has been kept under observation for a longer time than is usually permitted.

Dr. A. A. Eshner asked if the patient had presented symptoms of multiple neuritis or of involvement of any other than the optic nerves. Increasing evidence tends to show that optic neuritis in its various forms, as well as inflammation of other nerves, may result in the course of any of the infectious diseases. This relation has been established in the case of malaria, of typhoid fever, of influenza, and some other diseases, and it probably exists in the case of still others in which the proof is not yet at hand. It is probable that in these cases the inflammatory process, whether interstitial or parenchymatous, is actually toxic in nature. There is no reason to assume that there occurs lodgment of the causative micro-organisms in the diverse situations of the various complications, neural and otherwise. The neuritides that follow are due to the toxic influence of the products of bacterial activity, and are comparable to those dependent upon intoxication with alcohol, tobacco, lead, iodoform, and other agents acting similarly.

In following the morbid process it seems scarcely necessary to interpose the action of toxins generated in the gastro-intestinal tract, with resultant auto-intoxication. It seems much easier simply to assume that under the conditions named the function of the liver is at fault, so that poisons taken in by the stomach are not restrained in their onward course or physiologically modified through the normal functional activity of the liver. As a result, such poisons pass almost directly into the circulation and give rise to more or less characteristic disturbances. Just why, however, in some instances the optic nerves alone should suffer, and in other instances other nerves, is not yet known; and the explanation may not be looked for until more is known of physiologic chemistry, until it is known also why certain substances used medicinally act upon one portion of the nervous system and other substances act upon other portions. The matter is one of selective affinity, and the solution of the problems attending it must await increased knowledge concerning functional, nutritive, and metabolic activities of the cellular elements of the body.

Dr. A. G. Thomson said that he had not made any very careful examination of the patient as to sensation, but the man related that, on recovering from his debauch, his general condition was very much worse than from the ordinary effect of alcohol. Examination of the visual field showed an increase of the scotoma outwards. Below, in that portion of the field where the scotoma was breaking through towards the periphery, vision was not as clear as elsewhere, so that, if the color fields were large enough, a scotoma for color would have been found, showing that these fibres, though not completely atrophied, were undergoing certain changes, and would not receive certain vibrations as the upper portion of the field.

DELIRIUM TREMENS DUE TO PARALDEHYDE.

Reinhold (*Therapeutische Monatshefte*, June, 1897; *Wiener medizinische Blätter*, July 29, 1897) relates the case of a patient, forty-one years old, who was addicted to taking paraldehyde, and had taken as much as two ounces in the twenty-four hours preceding his admission. He was very much depressed, his speech was labored, and there was decided tremor of the tongue and hands. On his being deprived of paraldehyde, epileptoid attacks occurred. Wine, diuretics, bromides, and lukewarm baths were prescribed. There were transitory periods of agitation with delusions of persecution and visual illusions. Reinhold advises against the free use of alcohol and bromides in such cases and says that, if they are not employed, the epileptoid seizures may perhaps be avoided altogether. Sleep is to be procured by means of sodium bromide and trional. The diet should be generous, the bowels carefully regulated, and metabolism promoted by hydriatic measures. The patient should not be dismissed until his sleep is normal.—*New York Medical Journal*.

OPIUM IN INDIA.

BY ROBERT D. RUDOLF, M.D., EDIN., TORONTO.

I have no intention in this communication of discussing the pharmacology and therapeutics of opium, nor yet of mentioning the diseases in which it is indicated or otherwise, but would ask you to bear with me for a short time, while I give you the knowledge of the drug which I picked up while living in India. During the five years that I was there I resided in Behar, where the best Indian opium is grown, and where many thousands of natives and a few Europeans are employed in the cultivation of the white poppy (*Papaver somniferum*) from which opium is obtained.

Just at this season of the year, when, after the cold weather, the climate is becoming tropical again, the little fields round thousands of native villages will be white with poppy blossoms, and the heavy, sweetish odor from these is as characteristic of the season as the smell of a hay-field is of June. The fields are prepared in December with the greatest care by the native and his family, and when the ground is so fine that not a lump the size of a walnut remains, they mark the surface off into oblong beds about six feet by four feet, and the ridges between these beds are trenched to allow of the free passage of water, for all opium is grown by irrigation. This irrigation is usually from surface wells.

The seed is sown broadcast early in January, and in three or four days comes up. When the plants are about two inches high, most of them are weeded out by hand, and only one plant to every square foot or so is left. The irrigation is continued every two or three days, until the blossoms fade and the heads appear. When fully grown, the plant is about four feet

high. The blossoms all come out nearly at the same time, so that a whole field, which was pale green one day, is white the next. The petals of the blossoms are collected by gently removing them by hand from the capsules, never plucking them off forcibly, as this would injure the latter. These petals are then handed over to the women of the family, who, seated in front of circular iron plates placed over a slow fire, dab the petals on one by one, pressing them with a damp roll of cloth. When fresh, the petals are gummy, the heat makes them stick together, and the moisture being driven out they form circular cakes, technically called "leaves," eight inches to fourteen inches in diameter and .5 to .3 inches thick, which are used in making the shells of the opium cakes at Patna.

Next the poppy juice must be collected, and this is a very critical operation, and all the native household is pressed into the service. Each person is armed with an instrument having two or three sharp points, so that one stroke of it makes two or three parallel scratches. Thus armed, they go into the fields in the afternoons, when the sap is rising best, and lightly scratch each poppy capsule on two or three sides in a vertical direction. This is a very tedious job when a man has several acres of poppy under cultivation, and all the village, from old men and women who can scarcely stand to children who have barely learned to do so, are pressed into the work. The work is urgent, for a whole field becomes ready for the extraction about the same time, and it must be all accomplished in a very few days, or the capsules will dry up and much of the juice will be lost. When the capsule is lanced, a white juice about the consistency of glycerine slowly exudes, and this partially dries and turns brown. Next morning the harvesters return and scrape off the crude opium; this they smear on to the palms of their hands, and when they have got together a good collection, they put it into earthenware dishes. This collecting is done with blunt knives like bits of hoop-iron. Each set of incisions in a capsule yields about $1\frac{1}{2}$ grains of crude opium, and the scarifications are repeated several times

— until the juice ceases to flow. As thus collected, opium is a granular, rose-red liquid, containing 49--51 per cent. of moisture. The poppy plant now rapidly fades and is soon cut down and broken up, and is sent in to be used for packing opium cakes. The seeds are pressed for poppy oil, or are kept for the next year's sowing. After pressing, the residue is used as food for cattle. The land is at once cultivated again and, probably, indigo is sown—what strikes one especially in Indian agriculture being that the soil is given no rest, one crop following another in constant succession.

The opium trade of India is a government monopoly, and is worked by a department of Europeans, assisted by a great number of minor native officials. These grant licenses to the cultivators, without which they are not allowed to grow the poppy. They also advance money to enable the cultivators to meet the expenses of preparing the land, etc. They measure all the land after it has been sown with poppy, and thus check any cheating, in that a native cannot get an advance on a greater piece of land than he actually cultivates. All the opium that is collected must be taken by the natives to the government go-downs (or warehouses), where it is weighed and carefully examined to see that it has not been adulterated. In spite of this barrier, adulteration is a common thing, and the substances used for this purpose are very numerous, of which gum acacia, bacl, betel, the juice of several milk-yielding trees, raw sugar, ghee (boiled butter), flour, linseed, brick-dust, and even cow-dung may be mentioned.

The examiners at the warehouses become very skillful in detecting adulteration by the senses of sight, touch, and smell, and use no chemical tests there.

All the opium is, at the warehouse, roughly divided into three qualities, according to its consistence — the most solid being the best — and the value is placed to the credit of the grower, and he is paid that amount in cash, less the advance, which he received earlier in the season. The officials then put the opium into great earthenware jars, each containing

eighty pounds, and these are carefully sealed, and then sent by boat or train to headquarters at Patna, under a guard of police.

Arriving here, the opium, after being carefully checked-weighed, is searched and again classified, first by hand — and the men to do this work can, from long experience, tell to one degree the consistence of any specimen — and then is classified again on a steam table.

Dr. Manyard, the officiating factory superintendent, thus describes this second examination:

“ These tables are shallow iron chambers, inside of which steam circulates, and on top of which rest white china plates. A specimen of a hundred grains of opium dried to a powder on these shows by its loss in weight the amount of moisture it contained. Thus, if 100 grains result in 80 grains, we say the consistence of that opium is 80°, *i. e.*, it contains 20 per cent. of moisture, and it is on this consistence that the assami is paid, the same weight of opium at 80°, of course, being more valuable than at 50°. Every specimen, in addition to the assay, is also carefully tested for impurities, and not until a certificate of purity is received back from the laboratory can any single jar of opium be passed into the *malikhana* storing vats, where opium of different classes (each class including 3° of consistence) is stored in different vats. Each class bears a distinctive name, thus, *awal* include opium of consistence, 70°, 71°, and 72°, *darawal*, 73°, 74°, and 75°, and so on. This classification and examination of the opium takes place in April, May, and June — as many as 1,200 and even 1,800 jars (maunds) being disposed of daily. Good opium, as this received at the factory, is a moist, granular, rich mahogany-brown colored substance, varying in consistence according to the inspissation it has undergone, from that of thick pea-soup to that of putty; the consistence also rising with the amount of *pascucha* present. The color varies with the age of the opium (darkening with age), amount of *pascucha* (darker the more there is), soil on which grown (lighter from high land only recently cultivated), but is never black unless adulteration has occurred. The

texture varies from the distinctly granular to the homogeneous, but when the opium is pure is always uniform. Its variations depend upon the amount of *pasccha* present, but more especially upon the manipulation the opium has undergone, the grain being destroyed by long manipulation. The texture is usually determined by taking a specimen in the palm of one hand and spreading it out with the other, or with a spatula. Pressed between the finger and the thumb, opium is sticky and viscid and draws out in fine threads, which break with a ragged fracture, and by the appearance of these the Chinese, in part, judge of the nature of the drug. The smell of fresh opium is strong and peculiar, rather agreeable, fruity, it has been called, and with less justice narcotic, as it rather stimulates than narcotizes, at any rate when first smelt. Its taste is also peculiar and bitter. Pressed between two glass slides, it is translucent and of a reddish-brown color. The same result may be obtained by smearing a piece on a white china plate with the finger, when any blackness or grittiness indicating adulteration is at once revealed.

“Starch is also said to be detectable by the naked eye in these ways, and, no doubt, can, when present in a very large amount, but it is unreliable.

“Microscopically, opium macerated in glycerine shows as a brown amorphous or granular substance, in which are to be seen large crystals — either single tablets with pointed ends resembling ammoniaco-magnesian phosphates (as figured in Sir Roberts' book on Urinary Diseases) or in tufts resembling stars of uric acid. There are also flat, square tabloids. A few starch grains, resembling arrowroot or tapioca, may generally be found, also refractive globular bodies said to be resinous, and now and again particles of vegetable fibre.”

In addition to this opium, there are a number of varieties sent in, *e. g.*:

(1) *Khurchan*, which is the scrapings from the earthenware dishes of the natives.

(2) *Pasccha*, that is, an acrid kind of opium, which rises

in the capsules during an east wind, and which, although very pure opium, is disliked because it is hygroscopic, and hence unfit for the interior of opium cakes.

(3) *Kuffa*, that is, pieces of cloth which have opium adherent to them. If clean, the opium is washed out and used for alkaloidal manufacture, otherwise it is confiscated and burnt.

(4) *Burned Opium*, usually from accident.

(5) *Contraband Opium*, seized in Bengal or Assam.

(6) And lastly, *Adulterated Opium*.

All opium at Patna is specially prepared to meet the three uses: (1) provision for the China market; (2) excise opium for use in India; (3) medical opium. This last is of two kinds — cakes and powder — and is made from opium of highest consistency and lightest color. It is spread out on shallow wooden trays in the shade, carefully protected from the dust, and kneaded by hand every few days until it rises to 90° consistence. This takes months to effect, and is then pressed in a hand-press into cakes of two pounds weight each, wrapped in Nepaul paper, and issued to medical storekeepers. The powder is simply opium dried to a powder on plates on the steam table, and is pure opium at 100° consistence.

The opium for use in China and India is sent out at the standard strength of 75° (25 per cent. of moisture). It is made into balls weighing two pounds each, and these are packed in boxes among opium plant straw. This opium is despatched to Calcutta and there sold to Chinese and Indian buyers at the monthly Board of Revenue sales.

Opium, not suitable for any of these three purposes, confiscated opium, and *pasecha* is all sent to Ghazipur, where it is used for the extraction of alkaloids.

As regards the *composition* of Indian opium, it is peculiar in containing less morphine and more narcotine than the Smyrna variety. It contains more morphine than Chinese or Persian opiums, and much more narcotine. This excess of

narcotine in Indian opium is well worth noting. Narcotine has a more convulsive and less narcotic action than morphia. Squire, in his *Companion to the British Pharmacopeia*, states that it has no narcotising action at all, and hence has been sometimes called Anarcotine.

Bihar, that is, Patna, opium, when thoroughly dried, contains 5.16 per cent. by weight of morphine against 9.64 in Smyrna opium. On the other hand, Patna opium contains 8.24 per cent. by weight of narcotine, and Smyrna opium only 2.26 per cent.

The opium belongs to the government from the first, and a large staff of officers are employed to prevent the local sale and use of it by the cultivators. But with all these precautions, a certain amount is used thus, and the presence of the dish of opium in the hut not infrequently tempts natives — usually women — to steal enough to do away with themselves. It is also a fairly commonly used poison in cases of murder, although arsenic is the commonest here.

A good crop of opium is the most profitable one that can be grown by the villagers, but the risks are many, and it is seldom that a man secures a perfect 16 anna harvest. A 16 anna means a perfect one, from the idea that there are 16 annas in the rupee. A 12 anna crop would, thus, be a 75 per cent. one.

But the poppy plant is a very delicate one, and its life and development are endangered by many things. Thus, the ground must be very rich and contain a good deal of natural moisture or the seed will not germinate. When the plants are above ground, a cold spell of weather may kill them. Later on the blossoms may be destroyed by hail, heavy rain, or high wind; but the most risky time of all is when the capsules have been lanced and the opium is lying on the surface. Then a heavy rainfall will wash most of it away, or a high wind blowing the plants about may rub them against each other and knock quantities of the opium off. Thus, a native who trudges home with the price of a good crop tied up in his loin-cloth

may truly breathe his thanks to his gods, and probably will offer up some simple sacrifices to their images. If, on the other hand, he has received little or nothing, or even is in debt to government for part of the advance he has already got, he will quietly make his way back to his village, muttering " *kismet, kismet* " (fate, fate), for the native of India is a great fatalist.

The two great races in India, Hindoos and Mohammedans, use opium largely as an habitual stimulant, as a necessary part of many social ceremonies, as a prophylactic against disease, and as a therapeutic agent.

The exact date on which opium was introduced into India from Asia Minor is doubtful. Some believe that the Rajputs (who are high-caste Hindoos) used it over 2,000 years ago. There is no evidence, however, of the plant being cultivated in India before the sixteenth century, and it was probably then introduced by the Arabs, who also took it first to China.

(1) The *use of opium* has been for long intimately connected with the *social functions* of many classes of Indians. Dr. Norman Chevers, in his "Medical Jurisprudence of India," tells us that *Amal-lar-khana*, "to eat opium together," is the most inviolable pledge among the Rajputs, and an agreement ratified by this ceremony is stronger than any adjuration. If a Rajput pays a visit, the first question asked or words uttered are *Amal kya*, "Have you had your opiate?" On a birthday, when all the chiefs convene to congratulate their brethren on another link being added to the chain of years of their age, a large cup is brought forth, a lump of opium is put therein, upon which water is poured, and by the aid of a stick a solution is made, to which each helps his neighbor, not with a glass, but with both of his hands held to the mouth. The practice of *Amal-lar-khana* was also a social indication that all enmities were at an end; it was the seal of renewed friendship between individuals or tribes among whom hostilities had previously prevailed.

In July, 1892, the Calcutta Medical Society held a dis-

cussion on the use of opium, in which several native medical men spoke of its social use. Dr. Chunder Bose, the president of the society, spoke as follows:

“ I cannot find from records when the drug was introduced as a social necessity in this country, but I am in position to state that opium is indispensable in the reception of chiefs, nobles, and men of rank among the Rajputs, the Marwarees, and the Mohammedans of the central provinces, and of Surat and Ahmedabad. The process of welcoming guests with opium either in the form of devotion or highly-scented extracts, is called *Kussoba*. The host himself takes the gold or silver cup filled with the preparation of opium, and goes round the party, distributing spoonfuls to each one of his guests, who drinks it to the health of his host. Infants' and little children's right to the *Kussoba* is not denied by the host. The process is meant to remove anxieties from the mind and to bring about a state of hilarity.

“ Different sects of people observe different modes of eating the drug; some take it in its crude state, while others soak it in water or milk, and then drink the fluid and throw away the residue. The well-to-do class keep a separate formula for preparing their own opium; they take a quantity of good opium, mix it up with the powdered seeds of cardamom, bamboo camphor, *Bangsolochun* musk, camphor and saffron to the consistency of a pill mass, and then make pills or boluses according to the dose which they take. These ingredients are added to the drug with the view of augmenting its virtues. The zemindars and the rajas and nawabs of Bengal boil opium in milk, and then they eat the cream only. The process of smoking *madat*, otherwise called *goolie*, is simple, while that of smoking *chandu* is involved and difficult. *Madat* smokers in this part of the country are of a low class, and generally shunned, while the *chandu* smokers are generally better off, though of depraved morals.”

Thus it will be seen that opium takes much the same posi-

tion in social ceremonies in India as alcohol does among western nations.

(2) As an *habitual stimulant* the drug is very largely used. Among some classes, *e. g.*, the Marwarees (bankers) and Sikhs (fighting men) the practice is almost universal. In Behar itself, where opium is chiefly grown, about five per cent. of the Hindoos and thirty per cent. of the Mohammedans habitually use the drug in daily doses of from two to ten grains, and once the dose which suits the individual is reached it is not common for him to exceed it. Occasionally, however, one hears of enormous doses being regularly taken. There are people in India who take their two, four, six, and even eight ounces of solid opium daily, and one case was recorded by Dr. Crombie of a man who ate nine ounces and 225 grains daily, without developing any poisonous symptoms whatever.

It is taken usually in the form of the crude drug made into pills, and half is taken in the morning and the rest at night, half an hour before food. The result is that the drug mixes with the food and thus is very gradually absorbed. When a native commences to take opium the effect at first is to cause constipation and a drying up of the secretions, but after a week or two of habitual use these untoward results wear off and the drug seems to actually stimulate peristalsis. The habitual taking of opium is usually commenced after the age of thirty, very often, to commence with, as a treatment for disease, and is then probably continued for the rest of the man's life. The effect of moderate use on the *native* seems, on the whole, a harmless one. The man, as long as he takes his dose regularly, is capable of the highest mental and physical exertion. If, however, his dose be withheld he suffers extremely.

Prolonged indulgence in the habit does not seem to produce any definite tissue changes which can be detected post mortem. As regards the effect on the brain, some interesting statistics were produced by Dr. Crombie of Calcutta, for the use of the Royal Commission on Opium that sat some three years ago in India. I may summarize them as follows:

Of the total admissions of 2,202 into the lower Bengal asylums during the ten years, 1881-1890, 641 were ganja (Indian hemp) smokers, 117 were spirit drinkers, and eight were opium eaters. In other words, 29.1 per cent. used ganja, 5.3 alcohol, and only .35 were opium eaters. Of the 800 admissions during the three years, 1888-90, into the Bombay presidency asylums, 132 were ganja smokers (16.5 per cent.), 56 (or 7 per cent.) were spirit drinkers, and 6 (or .75 per cent.) were opium takers — of these six cases attributed to opium, five were from the city of Bombay itself, leaving only one for the rest of the province, and he belonged to Hyderabad, in Sindh, where the opium habit is almost universal. In the Madras presidency during the year 1888, the total admissions were 168, and of these 7.1 per cent. were from ganja, 6 per cent. were alcoholics, and *none* took opium. In the Rangoon asylum, the only one in Burma, the total admissions for the six years ending 1890 were 541, of which 2.9 per cent. were attributed to ganja, 5.91 to alcohol, and .92 to opium. The city of Rangoon contains about 15,000 Chinamen, and yet not a single Chinaman was admitted to the asylum during these six years, although a large number of them smoke opium.

To summarize these figures: Out of 3,711 admissions to the various asylums, 801 cases were attributed to ganja, 215 to alcohol, and only nineteen to opium, and these figures are the more remarkable when we consider how little alcohol and ganja are used compared to opium. Dr. Crombie remarked before the commission that, in his experience, it would be "almost justifiable to advance the theory that one of the advantages derived from the native habit of eating opium is a diminished liability to insanity."

As regards the influence of opium eating on longevity, Dr. Roy Moy Roy, himself an opium eater, has compiled a table of 215 habitual indulgers who had come under his own observation, and it is remarkable, on looking through these tables, to notice how many of the individuals have reached and exceeded the expectant period of life, as taken from English tables, and,

of course, it must be remembered that the expectancy of life in England is considerably greater than in India.

The table includes one man who, at the extreme age of 106 years, died a violent death. He was in full possession of his senses and in good health, considering his age, and used to manage a large estate of his own. His custom was to take 180 grains of opium daily, and this he had done for sixty-six years.

The Zantras — the religious books of one of the large sects of Hindoos — have authoritatively laid down that the practice lengthens life.

One great reason, it seems to me, why opium has been credited with tending to longevity is that it so often acts as a prophylactic to disease. When natives have to undergo any great physical hardship or exposure to cold and damp, they take opium, under the firm belief that it helps them to bear up under these difficulties.

The boatmen on the great rivers take it regularly, and they are a happy, healthy, and contented lot of men. "They begin work at six A. M., and will often work a large, heavy house-boat, dragging it the greater part of the day against the current till eight P. M., on a hasty meal, snatched at midday, and an occasional chew of opium, all the time happy, jolly, and contented."

Dr. Moir of Calcutta says:

"Opium is taken very commonly with a view to lessen fatigue and hunger in prolonged hard work or long marches. The Bhutia and Gurkha coolies in Lushai land stipulated for opium in their rations, because they were accustomed to it; because they believed it lessened fatigue in carrying heavy loads long distances in that hilly country, and because they thought it lessened their susceptibility to fever and did good in fever. The authorities wisely allowed them to have a fixed daily opium ration. I never saw any of these coolies suffering from any symptoms that could be attributed to eating opium, though I have seen some of them beastly drunk."

Smoking of opium is not very prevalent in India, but in

some of the large towns it is practiced. Either they smoke *chandu*, which is a watery extract of opium, from which the oily matters have been removed by heat, or *madat*, which is also a watery extract pounded up with charred guava or vine leaves. The former method is practiced by the better class, the latter by the lowest classes.

Pure morphia is little used by natives, but the Bengalee baboos of Calcutta have found it out, and many of them take this most insidious drug in doses of five to fifteen grains daily. As regards large doses of morphia, a Maharajah who died lately at a good old age, used to take twenty-six grains daily, and was a good sportsman and a first-class shot.

(3) As a *prophylactic*, opium is very largely used in India, as well as in other countries, and there seems no doubt that it does act in this way against malaria, rheumatism, dysentery, and cholera. As to the exact way in which it acts on the system in exerting its protective power one can only theorize, but the belief is well nigh universal in the East that an opium eater is less apt to suffer from these diseases than one who does not so indulge. This belief is not confined to the East, for opium is largely used in the fen districts of England for this very purpose, as stated by Dr. Lauder Brunton. In the *British Medical Journal* for July, 1881, Dr. Murrell draws attention to this fact, and points out that phthisis is very uncommon among these opium eaters.

Dr. Crombie wrote as follows:

“During sporadic outbreaks of cholera among the people of Burrobazar, the victims are those who are either abstemious in their habits or are bhang eaters and ganja smokers. The opium eaters, who often closely attend upon patients, are not affected by the disease. A few months ago a party of twenty men, of all ages, one morning started from No. 9 Hanspooker Lane to Kalighat, to visit the goddess, and returned during the night. They prepared one kind of food, and all of them ate it. Early next morning nine of the party got cholera, and succumbed to it, while the rest escaped. On inquiry it was

found that those who escaped were habitual opium eaters. But opium eaters, during the last epidemic of influenza, suffered most severely, and some succumbed to the disease."

During the Poojah season people come to Calcutta from the Terai of Jalpaiguri and Sotatia for treatment of Terai fever and enlarged spleen. The history they give of their illness is interesting. They say that because they have not listened to the advice of opium eaters they are destined to suffer and to die prematurely, for in the Terai the opium eaters are the healthiest of men.

In the Central Provinces and Bombay pills of opium, the size of poppy seed, are given to the children from the first, and the dose is gradually increased to one grain. The practice is continued until the age of four years. From that age until after thirty opium is seldom used, except in the treatment of disease. It is thus given to children in the belief that it renders them less liable to tetanus and diarrhoea.

The prophylactic action of opium against malaria is probably largely due to the narcotine it contains. Narcotine, in doses of five grains or so, has often been used in the treatment of this disease.

Dr. Hehir of Hyderabad writes thus: "In malarial-poisoning there appears to be a hypersensibility of the general vaso-motor center, so that a draught of cold air blowing on the surface, slight gastric irritation, or even slight distension of the bladder, will cause contraction of the cutaneous vessels and shivering, in one suffering from such poisoning. Opium appears to be useful in such conditions, probably by lessening the excitability of the general vaso-motor center. This exalted condition of irritability of the general vaso-motor center is one very commonly met with in Hyderabad and its suburbs, and being the determining cause of many of the cases of ague met with, we may often ward off attacks of ague by giving *sedative* doses of opium to lessen those chemical, vital, functional, or metabolic changes (in the protoplasmic constituents)

of ganglionic cells of this special center; and thereby keep the blood at the surface, a condition incompatible with the manifestations of an attack of ague."

So much for the habitual use of opium by the people of India. The question naturally arises, How is it that the drug can be used with so much benefit and so little harm by these people, when the opium habit, or, at least, the morphia habit, is so easily acquired by Western nations, and is so dreadful in its results. One reason for this is, undoubtedly, that the opium of India (and also of China) contains much less morphine, but more narcotine, than do other kinds. But I believe that the great reason for the comparative innocuousness of opium on Eastern nations is that it is, so to speak, their *natural* stimulant. It seems as if every people must have some stimulant, speaking generally — take, for example, coca in South America, kola in Africa, and alcohol with Western nations. And as long as they keep to their own stimulant, the minimum of harm (though often great harm) is done; but if one nation adopt the stimulant of another, great havoc ensues, and the people seem unable to resist the desire to take an excessive amount of that stimulant. Alcohol fortunately is forbidden to most races in India, but where this is not the case and they substitute it for opium, the results are lamentable. Three years ago an attempt was made by a party in England to make it illegal for opium to be sold in India, except for medicinal purposes. The Government Commission, which sat in the country on the subject, almost unanimously concluded that it was wiser to let things be. With this decision I agree, and hold that the harm and hardship caused by such legislation would far exceed any benefit which might accrue. If the natives of India must have a stimulant to assist them in their social functions, to help them through their daily work (in their opinion), and to protect them against disease, then, by all means, let it be the comparatively harmless opium, rather than the deadly ganja, or the still deadlier alcohol.

JUDICIAL EVOLUTION AS TO CRIMINAL RESPONSIBILITY OF INEBRIATES.

BY CLARK BELL, ESQ., LL.D.

Editor Medico-Legal Journal.

By the common law of England it was conceded that the words *non compos* meant a total deprivation of reason. Lord Coke divided it into four parts, or, as he called them, "Manners." 1. The idiot or fool. 2. He who, of good and sound memory at birth, lost it by visitation of God. 3. Lunatics who have lucid intervals, and sometimes of good sound memory, and sometimes *non compos mentis*. 4. By his own act as a drunkard. So that drunkenness at and by common law under certain circumstances was a form or species of insanity. By the same common law it was held: 1. That the drunkard was responsible for all his acts criminally, even if the state of drunkenness was such as to make him insensible to his surroundings and unconscious of his acts. 2. That drunkenness, instead of being any defense to a charge of crime committed while in a state of intoxication, was not only no defense, but that it aggravated the act. These doctrines were upheld by the English courts in *Dammaree's case*, 15 St. Tr., 592; *Frost case*, 22 St. Tr., 472; *Rex vs. Carroll*, 7 C. & P., 115; and these doctrines have been held likewise in nearly all the American states. In Alabama, *State vs. Bullock*, 13 Ala., 413; in California, *People vs. King*, 27 Cal., 507; in Connecticut, *State vs. Johnson*, 40 Conn., 106; in Delaware, *State vs. McGonigal*, 5 Har., 510; in Georgia, *State vs. Jones*, 20 Ga., 534; and in nearly every American state, similar decisions have been made.

The common law, which would not uphold a deed, will, or

contract made by a drunken man in an unconscious state of intoxication, would hold the same man criminally liable for every act constituting a violation of the criminal law. To-day we are regarding these views as legal curios and relics of the past. The law should have its museums for the preservation of its antique anomalies. A silent, unconscious change has been wrought in the law, not by legislation, but by the growth of ideas, the diffusion of knowledge. Insanity is now demonstrated to be a disease of the brain, of which it is itself an outward manifestation. Inebriety is also shown to be a disease of the man, manifesting itself through brain indications, which demonstrate it to be a form of insanity, sometimes wholly dominating the volition and beyond the powers of the victim to control, and is now treated as such. The essential element of crime, *intention*, hardly fits into the acts of the unconscious inebriate, who, while blind or dead drunk, kills an innocent victim, and the absence of motive, like the absence of intention, are missing links in that chain, which the law exacts in regard to all criminal action. It would be next to impossible now to find a judge willing to charge a jury that a crime committed by a man in a state of intoxication, in which the accused was unconscious of his act, or incapable of either reflection or memory, should be placed on a par with one fully comprehended and understood by the perpetrator. Buswell says, in speaking of the old doctrine of drunkenness being an aggravation of the offense: "It is apprehended that this is the expression of an ethical, rather than a legal, truth." (Buswell on Insanity.)

Such considerations compel us to inquire, What is law? There are two schools of thought regarding it. Webster, the great expounder of the American Constitution, is credited with saying: "Law is any principle successfully maintained in a court of justice." This represents one school.

Richard Hooker, in his *Ecclesiastical Polity*, represents the other. He says of law: "There can be no less acknowledged than that her seat is the bosom of God, her voice the harmony of the world; all things in heaven and earth do her homage:

the very least as feeling her care, the greatest as not exempted from her power." The gulf intervening between these two extremes is as wide and deep as that which divided Abraham and Lazarus in the parable of our Lord.

The framers of the New York penal code, without the courage to hew down the error of the old doctrine, engrafted thereon a provision that enables a jury now, in that state, to pass on the motive and the intention of the unconscious and wholly insensible inebriate, so that now, in New York, since the penal code of that state, a conviction would, in such a case, be wellnigh impossible.

How have the English judges met the question? In 1886 Mr. Justice Day, in *Regina vs. Baines*, at the Lancaster Assizes, charged a Lancaster jury that if a man was in such a state of intoxication that he did not know the nature of his act, or that it was wrongful, he was insane in the eye of the law; and that it was perfectly immaterial whether the mental derangement resulting from such intoxication was permanent or temporary. In 1887 Chief Baron Pallett held that if a person, from any cause, say long watching, want of sleep, or deprivation of blood, was reduced to such a condition that a smaller quantity of stimulants would make him drunk, than that would produce such a state if he were in health; then neither law nor common sense could hold him responsible for his acts, inasmuch as they were not voluntary, but produced by disease. As long ago as 1865, in the case of *Watson*, tried at Liverpool for the murder of his wife, before Baron Bramwell, the evidence showed that he was laboring under delirium tremens. After the act, he grew calm and said he knew perfectly well what he had done, and that his wife was in league with men who were hidden in the walls. Baron Bramwell, who favored hanging insane men who committed homicides, when acting under an insane delusion, if of sufficient intelligence to understand the nature and quality of the act and its consequences, tried the case, and charged the jury, "that there were two kinds of insanity, by reason of which a prisoner was entitled to be acquitted. Prob-

ably the jury would not be of opinion that the prisoner did not know the quality of his act, that it would kill and was wrong, but it was still open to them to acquit him, if they were of opinion that he was suffering from a delusion leading him to suppose that which, if true, would have justified him in the act." One more remark he would make, viz.: "That drunkenness was no excuse, and that a prisoner cannot, by drinking, qualify himself for the perpetration of crime; but if, through drink, his mind has become substantially impaired, a ground of acquittal would then fairly arise." The prisoner was acquitted. Under the English law there is no right of appeal to the convicted homicide, as in the American states, and so it is difficult to find the decision of English higher courts on the questions involved in the discussion. In the American states no person is executed except on the decision of the highest court of the state, if the accused desires it and appeals. In England the appeal does not lie as a matter of right, and so the opinion and dicta of the English trial judges form the real body of the law of England upon these questions. Baron Bramwell, undoubtedly, regarded Watson as entitled to an acquittal, and the case shows a remarkable result in this respect. Had he been insane and committed the homicide under delusions which dominated his will and controlled his action, he would have been convicted if he had sufficient intelligence to understand the nature and the quality of the act, but the drunkenness which had caused the act which resulted in delirium tremens, with a diseased condition of the brain, also resulted in a delusion which controlled his mental powers so as to render him irresponsible at law. In 1855 Baron Pollock held that the law was the same where insane predisposition and not physical weakness was the proximate cause of the intoxication.

The late English Home secretary, Mr. Mathews, was one of the ablest men connected with the English government. Under the English system this officer has the power to commute or modify the sentence of the courts in criminal cases,

and he exercises it with as much effect, and more in many cases, than would the reversal of the Appellate Court, if the right of appeal existed. No eye in Great Britain sees more intelligently the action of the criminal courts than his. It is his province to correct errors and redress grievances and abuses, if such exist or occur, in the criminal jurisprudence of Great Britain. Mr. Mathews named a commission, composed of Mr. J. S. Wharton, chairman; Sir Guyer Hunter, M. P.; Mr. E. Leigh Penburton, assistant under-secretary of the Home Department; Mr. Daniel Nicholson, superintendent of the Broadmoor Criminal Lunatic Asylum; and Mr. C. S. Murdock, head of the Criminal Department, to inquire into the best mode of treatment and punishment for habitual drunkards. Mr. Mathews says, regarding the appointment of this committee, "Great differences of opinion have arisen as to what kind and degree of punishment for offenses committed by habitual drunkards would be the most effectual, both as a deterrent and with a view to the reformation of such offenders. It appears to me that advantage would result from an inquiry being made into the subject." It may be fairly claimed, so far as the British Islands are concerned, that the old common law rule no longer is enforced there, and that inebriety, as a disease, is now not only recognized as an existing fact, but that the jurisprudence of that country is receiving such modifications as are necessary to fit it for the advance made by scientific research. We are, doubtless, near similar results in the American states. (Med.-Leg. Jour., Vol. X, No. 3, p. 259.)

The annual consumption of tobacco in Holland is a little over seven pounds a head; in the United States, 4.5 pounds; in Austria, 3.8 pounds; Denmark, 3.7 pounds; Switzerland, 3.3 pounds; Belgium, 3.2 pounds; Germany, three pounds; Sweden and Norway, each 2.3 pounds; France, 2.1 pounds; England, a little under two pounds; Italy, Russia, Spain 1.25 pounds. It is estimated that 2,000,000,000 pounds' weight are used annually, of a money value of more than \$2,500,000,000.

A CASE OF DEMENTIA AND ALCOHOLIC MANIA.

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

The interest of this case centers on the fact that it is a prominent illustration of the legal blunders in dealing with capital crime, so common at present. The failure to recognize the insanity of inebriety in the court-room is culpable in the highest degree. The facts concerning inebriety are now so well attested that to ignore them is manifest ignorance without excuse. In addition, this case points to the urgent necessity of a change in the theories and methods of treating capital crime, and determining the mental condition of the criminal.*

Thomas F. Kippie of New Haven, Conn., a moulder, forty years of age, killed his wife January 31, 1896. In January, 1897, he was tried and convicted of murder in the first degree, and hung July 16, 1897.

In a study of the history of the case, the following facts were brought out on the trial and were undisputed:

Kippie's parents were inebriates. The father drank excessively at intervals, and was of a violent quarrelsome disposition. The mother drank at all times when she could get it, and was violent and stupid, alternately, often beating her children severely, driving them out of the house. Usually she would become stupid, and fall down, and have to be carried home. She was finally found dead in a well, having fallen or jumped in. The drink periods were governed by the ability to procure spirits, and were always associated with fighting and other boisterous excitements. The children, five in number, were early forced out on the street and into facto-

* It is a pleasure to note the very intelligent, persistent efforts of Mr. Tuttle, the senior Counsel for the defense, to bring out the real facts of this case.

ries to earn money, and their home life was marked by bad, irregular food, worse surroundings, and scenes of continued drink excesses. Of this family one girl was imbecile and epileptic. The other suffered from hysteria and was feeble minded, and two boys were petty criminals, inebriates, and disreputables. Thomas, the oldest, on trial, was intoxicated when six years old, and from that on to the time of homicide has used spirits to excess, continuously and at intervals. At six or seven years of age he was hit by his mother on the head and made unconscious, suffering for two weeks in bed. Since that time he has been frequently injured by blows on the head and falls, which have left many scars, together with a broken nose. As a boy, Kippie was constantly fighting, and when drinking was very irritable and vindictive in his assaults. His brain seemed to be very unstable and uncertain, suddenly changing from one thing to another, and he was frequently arrested for assaults and drunkenness, serving short terms in jail. He learned a trade, and worked energetically for a time, until he procured some money, which was usually spent in dissipation. He married a disreputable drinking woman, and for years, up to the homicide, drank and quarreled continuously.

He was intensely jealous, with and without cause, and frequently separated from her, and then returned, living together again. As he grew older he became more reckless and violent in his conduct when drinking. He would assault any one when using spirits, breaking bottles, windows, and chairs, unprovoked, and was regarded by saloon-keepers and associates as crazy and dangerous. Deliriums of destruction and boastful excitement of his ability to whip any one, together with recklessness of conduct and language, and a disposition (which was termed to start a row and be the chief actor) became more prominent. Several persons swore that he looked and acted like a crazy man, and at times had a dazed expression, bursting into tears or in a wild passionate rage.

For two days before and up to the time of the homicide, he drank continuously to stupor, with his wife, both of whom were deliriously intoxicated. They had been quarrelling, and officers had been called in to quiet them. His wife was in the yard, when he suddenly rushed down stairs, stabbing a stranger who stood in his way, then ran to his wife, stabbing her repeatedly, calling out, "Have it, have it." He then tried to escape; was caught, and taken to the station-house. After two or more days of bewilderment and general confusion, he recovered, and displayed suspicious cunning in denying, affirming, and explaining various acts and events of the past. On the witness-stand, at the trial, the same cunning of exaggeration and concealment and moral palsy was apparent. The sight of his sister having an epileptic paroxysm in the courtroom, roused him to make a furious effort to follow her out of the room, requiring much force to stop him. On several occasions during the trial he sprang up and displayed wild paroxysms of rage and excitement. The sudden onset and violent agitation, shouts and ejaculations, then extreme prostration and quiet, resembled epilepsy. His head and facial muscles were in a constant state of agitation, and his eyes had a peculiar staring expression. Both head and face were astigmated and irregular, his nose was broken, and his manner was suspicious and uneasy. In addition he had a high palate arch.

He declared that he was not insane, and wanted to be hung, rather than be kept in prison. In prison, awaiting execution, he was irritable, assumptuous, threatening, complaining of his surroundings and neglect, coarsely indifferent to his situation, joking of hell and the hereafter, treating his punishment as a farce, and sneering at everything about him. At the execution the same indifference and moral palsy was apparent up to the last moment.

These and other facts clearly supported the defense of unsoundness and insanity and general unconsciousness of the nature and character of the crime. It was alcoholic mania

and dementia, the latter coming from inheritance, marked by moral palsy and idiocy. The higher part of the brain and consciousness of right and wrong was absent: he was literally a moral idiot from birth. The effect of bad food, worse surroundings, with free use of alcohol from early childhood, was followed by a low progressive dementia, with attacks of mania.

Delusions of suspicion, and morbid explosive impulses followed the use of alcohol at all times. These delusional impulses of unrestrained excitement and violence were likely any time to develop into serious injury and homicide, and it was a mere accident that prevented an earlier crime. The defense assumed from these facts that Kippie was mentally unsound from birth, and incapable of reasoning rationally concerning his acts and their consequences.

I testified that no man with this heredity could be literally sane, and no man using spirits from early childhood, with a record of head injuries and maniacal fighting paroxysms, could be sane. The exceptions, when found, would only prove the rule. Also that Kippie was practically insane from birth, devoid of all consciousness of right and wrong, duty and responsibility, and unable, by his degenerate brain, to reason sanely, or exercise control over his conduct.

The State assumed that Kippie was simply a low, vicious inebriate, who deliberately committed this crime, and now sought to escape the consequences by feigning insanity.

The experts for the State were kept in court during all the trial, then called to give an opinion on a hypothetical case, in which the main facts of Kippie's life were omitted, such as the heredity, the drink history, the use of spirits at the time of the homicide, the drink paroxysm before the crime, and the head injuries.

On the cross-examination they each testified that these facts of the history were not considered in giving an opinion on the hypothetical question. They swore that Kippie was sane and responsible at the time of the murder. One expert testified that all alcoholic mania was simply degrees and varieties of

simple drunkenness; also drunkenness is only brutality, not insanity, and that brain action is altered, not brain condition, and that Kippie was sane and did not exhibit any appreciable brain disease. Another expert was sure that excessive drinking from 15 to 40 years of age would not have any effect on the question of the man's sanity. A man might use alcohol twenty-five years to excess and be perfectly sane in all respects; such excesses would not necessarily destroy any part of the brain tissue. These experts heard the testimony of Kippie's history and inebriety, saw the violent emotional paroxysms, and heard the facts of the homicide described minutely, then consented to give an opinion on what was clearly a misleading hypothetical case, leaving out facts which they knew to be essential. The legal trick of drawing out positive opinions on a hypothetical case, dissimilar to the one in question, and creating the impression that the facts not mentioned were of little value, was a sad reflection on the conduct of the case.

The judge charged the jury to discriminate in the opinions of the experts, to determine whether they were based on all or a part of the facts, or on facts unproven. The jury, as usual, were hopelessly confused, and the verdict was another illustration of the force of submitting questions of this class to untrained men. Trials of this character are simply re-versions to an earlier age, ignoring all progress and teachings of science, and following the same lines that were prominent a century ago. The effort to discriminate between what is called willful vicious conduct, marked by alcoholic excess, and strange acts, and mental degeneracy, which, in a general way, is practically insanity, and show to a jury of untrained men the lines of division is simply to attempt the impossible. The attempt to determine the effects of alcohol on the brain from theory and opinion, and find how far it has, or has not, altered brain activity and tissue, is equally impossible. Nothing can be more absurd than the practice of demanding exact technical answers to medical questions, and accepting the vague uncer-

tain terms of vice, wickedness, willful drunkenness and brutality, as expressing clear fixed facts; in other words, urge exact definitions of terms of science, and accept terms like these to describe operations of the mind.

This trial is a marked illustration of the injustice of a legal combat to determine a psychological question of the mind and its condition; also of expert testimony narrowed to legal lines, and from a legal standpoint.

The facts of this case may be grouped in the following:

1. Kippie was a degenerate from birth, and moral paralytic.
2. His drink history, with violent paroxysms of anger, and sudden ungovernable impulses, were natural symptoms of the growth of disease.
3. The brain injuries and continuous brain poisoning by alcohol still farther increased the disease.
4. His conduct up to the homicide, and the circumstances of the crime, with his history up to the execution, were natural common symptoms of all such cases, without exception.
5. In Kippie's case, from birth to death, the chain of symptoms were complete, showing defective organization, imperfect growth, palsies, degenerations, progressive disease, and failure to understand or adjust himself to normal life and living.

The trial was a travesty on justice, and the expert testimony which pronounced Kippie sane, a reflection on both experts and methods. The refusal of the Board of Pardons to commute the death sentence was a dogmatic adherence to a delusion, that such penalties prevented crime, and intimidated degenerate criminals, and served the ends of justice.

One of the recent cures for inebriety urged with great confidence is to drown an eel in French brandy, and, after a month's ageing, begin to use it in table-spoonful doses every two hours. This is, in the opinion of Dr. Harlin, a certain remedy, and he is prepared to defend this statement with most excellent proof.

INEBRIETY AMONG YOUNG MEN.

BY GEORGE H. McMICHAEL, M.D., BUFFALO, N. Y.

There is at the present time some evidence that inebriety among young men is increasing. This may be to some extent due to the so-called "club" life which is now fashionable among the wealthy classes. But while the young man's surroundings are partially responsible for his habits, other factors in the etiology of the disease must not be overlooked.

During the years of adolescence, while the brain is only partially developed, the nervous organization is not in the stable condition which marks the full vigor of normal adult manhood. This being so, the desire for alcoholic drinks is much more easily acquired between the ages of seventeen and twenty-five than in later life. If inebriety has, up to now, been comparatively uncommon in youths, it has been because the customs of society have made indulgence comparatively difficult. These customs are rapidly disappearing, if they have not already disappeared, and drunkenness among young men, as I have already mentioned, seems to be increasing.

I think that the word "thirst" must be understood to include all desires for drink, whether physiological — and, therefore, normal — or pathological. In the former case the organism requires water, and the desire ceases when it has been consumed. I am not saying, of course, that unless a person is thirsty he should not drink water; but what I wish to insist upon is that if, in addition to the four or five tumblers of pure water which all of us ought to drink every day, our drinking were confined to those times when we feel thirsty, alcoholism would not be a common disorder.

The limitation of drinking to physiological requirements

necessitates in many cases the exercise of a greater degree of self-control than is possessed by the ordinary young man who has been brought up in such a way that most or all of his wants have been gratified. He visits the club and somebody invites him to take a drink. As a matter of politeness he does so. This sort of thing continues until a condition arises in which abstinence means discomfort. Now it is quite well recognized that the continued repetition of any process which gives pleasure, although originally purely voluntary, becomes less and less so, until eventually the operation is performed independently of the will. What actually happens is that the nervous mechanism has been educated by degrees to one line of conduct, and that line of conduct — in this instance drinking — becomes normal. Abstinence would demand a readjustment of the mechanism of inhibition and would be attended certainly with discomfort, perhaps with distress. The normal will-power has left the man: he has ceased to be a free agent: and the craving for alcohol is not voluntary, but automatic.

The typical case of any disease cannot be found outside the text-books. The cause of alcoholism must, therefore, be scientifically investigated, as far as possible, in each individual case.

The instances of inebriety, unconnected with club habits, are, of course, very numerous. The following facts, however, are worthy of notice. Prior to the age of seventeen serious intellectual strain is liable to be injurious to boys. The development of the reproductive functions quite frequently unbalances the nervous system, and, strange as it may seem, excessive mental capacity in some one direction often makes its appearance. Self-control is wanting and irregular habits are formed. The stomach becomes irritable and indigestion becomes almost chronic. This condition is quite well known, not only to physicians, but to every man who looks around him. What happens next? As alcohol seems to give relief, alcohol

is taken, and the young gentleman argues that it cures his dyspepsia and "keeps him strong."

I have now traced the history of a common form of inebriety among young men just commencing life. Mark the position at the twenty-third, twenty-fourth, or twenty-fifth birthday. Some alcoholic stimulant is consumed every day; "How do you do?" is to this man very closely allied to "Come and take a drink." If one talks with him upon the subject of inebriety he generally argues that although drinking is a bad habit total abstinence makes him "nervous." The inebriate himself believes that he is capable of refraining from the use of alcohol whenever he chooses, and the public shares his belief, which is to some extent due to the fact that alcoholic disease exists in the stomach a long time before any very acute symptoms arise. Nevertheless, the young inebriate, who usually called himself "a moderate drinker," seldom denies that there are occasions upon which he gets what he calls "full," a term which is destitute of scientific accuracy.

The pathology of alcoholism is not altogether understood, although the effect of ethyl-alcohol upon the liver, kidneys, brain, and heart has been determined, and may be found in the books upon the subject. A general study of the laws of poisoning naturally throws some light upon the matter. There can be no doubt that any poison taken habitually in quantities insufficient to cause death produces a tolerance of the poison, and also a demand for its continual presence. But while this much is certain, I do not think that anybody has determined what special cells are responsible for this pathological craving. Assuming, however, that the cerebro-spinal system is the guilty portion of the body, we can get some idea of the reason why the toleration of alcohol increases — as it unquestionably does — during a debauch. When a nerve-cell encounters a poison, if it is not destroyed it is stimulated to resistance; its activity is increased, necessarily, in the direction of its natural physiology. Moreover, an increase of energy in the direction of development takes place, and this development — a varia-

tion of cell-structure — provides for an abnormal toleration of the toxic material.

The character of the treatment demanded by the alcoholic condition of necessity depends upon the general health of the patient, but there are, of course, some principles which are applicable to almost every case. As the drinker usually has a poor appetite, especially in the morning, he must be induced to take food, otherwise the lowering of his vitality by fasting will retard his recovery. Moreover, there is no doubt that the consumption of simple food at short intervals will diminish the craving for alcoholic stimulants. Sufferers from alcoholism require a great amount of sleep, and if this cannot be obtained by natural processes, hypnotics must be resorted to.

Narcomania in any form being due to a disordered nervous system, its cure must be looked for in the restoration of the nervous system to a normal condition. This can only be accomplished by the combination of hygienic surroundings, moral suasion, attention to diet, and the judicious use of such drugs as are indicated in each individual case.

Acertain small number of persons can drink spirits daily in varying quantities for years, and seem not to be much injured by it. Then all at once they become diseased, some chronic or acute affection begins and goes on rapidly to a fatal issue.

Such persons have the appearance of health, but die suddenly, usually from heart disease, or cerebral hemorrhage, or pneumonia. The latter and Bright's disease are most common, and in all cases the disease is sudden and fatal. The degeneration from use of alcohol finally culminates in sudden fatal inflammation. The connection between the use of spirits and the disease is clear and positive, and yet unrecognized. The vital forces and powers of resistance are destroyed, and death follows, literally from alcohol.

THE INFLUENCE OF ACUTE ALCOHOLISM ON THE
NORMAL VITAL RESISTANCE OF RABBITS TO
INFECTION.*

BY DR. A. C. ABBOTT,

First Assistant Laboratory of Hygiene, University of Philadelphia.

These studies were made in the Laboratory of Hygiene of the University of Pennsylvania under the auspices of the Committee of Fifty to investigate the Alcohol Question for the experimental solution of one of the most interesting and important phases of the subject, viz.: that concerning the influence of alcoholism, acute and chronic, upon the normal vital resistance of animals to various forms of infection.

The lines along which it was proposed to conduct these investigations are as follows:

1. Determine if the normal vital resistance of animals to infection by the common pathogenic bacteria is demonstrably influenced by either acute or chronic alcoholism, induced through the use of known amounts of pure ethyl alcohol.
2. If any or no effect is observed, determine if the same holds good for animals under the influence of the commoner alcoholic beverages, as beer, wine, whisky, cordials, etc.
3. Determine if through either acute or chronic alcoholism the germicidal properties of the serum of the blood of animals is materially altered. If so, determine, if possible, the nature of this alteration.

Thus far the work has borne upon the question concerning the influence of acute alcoholism upon the resistance of rabbits to infection by the pyogenic cocci: *i. e.*, the streptococcus pyogenes (erysipelatos) and the staphylococcus pyogenes

* Abstract from the Journal of Experimental Medicine.

aureus — and by the bacillus coli communis, and the results are in many ways sufficiently instructive to warrant their report at this time.

The experiments were made with cultures of streptococcus pyogenes of a low degree of virulence, with normal bacillus coli communis, and with virulent staphylococcus pyogenes aureus, and, as the results to be reported show, with very diverse consequences.

Another difficulty was encountered in regulating the dose of alcohol. The intention was to have the animals daily in a state of intoxication; but it is not easy to decide just when this stage is reached, and the only certain indication of it is incoordination of muscular movement. It frequently occurred that when alcohol was given to this stage the direct effect of the drug was such as to gravely imperil the life of the animal, and in a certain number of instances the animal did not rally from even so few as one or two such administrations. If the dose were diminished, then one could often not be sure that the rabbit was intoxicated.

On the other hand, one encounters occasionally an individual on which alcoholism to intoxication has apparently no effect upon the general health, and may be prolonged over relatively long periods.

The individual susceptibility of different animals to the physiological action of alcohol differed in such a way as to require at the beginning a special dose for each individual.

As it was impossible to induce the rabbits to take alcohol voluntarily, either with the food or otherwise, it became necessary to administer it through a soft-rubber catheter passed down the œsophagus into the stomach; and though this was done as gently as possible, the irritation resulting from the repeated passage of the catheter, together with the depressing influence of the drug, was accompanied in a number of instances by intercurrent infections which, from their character and location, I think, can be reasonably traced to insignificant

wounds of the mucous surface of the œsophagus made when the alcohol was administered.

In only two instances was death positively the result of inspiration of alcohol into the air passages at the time of operation. When such an accident occurs death is practically instantaneous.

The most common macroscopic effect of the direct action of the alcohol was erosion and inflammation of the mucous membrane of the stomach, a condition that was unfortunately present in quite a number of my animals, and which complicated matters in such a way as to vitiate considerably the results of the experiments.

When the necessary dose of alcohol was determined, it was always given mixed with an equal quantity of distilled water.

The dose necessary to positively produce intoxication ranged from 5 cubic centimetres to 15 cubic centimetres of pure ethyl alcohol, though the usual dose in rabbits of from 1,500 to 1,800 grammes weight was from 7.5 cubic centimetres to 10 cubic centimetres, doses which, if taken by a man of one hundred and fifty pounds weight, would be roughly equivalent to from two-thirds to five-sixths of a pint of absolute alcohol. Notwithstanding this apparently very large amount, animals have repeatedly been encountered on which from 10 to 12, and even 15 cubic centimetres had no visible influence, though the continuance of those doses in many instances was followed by death, associated with grave lesions of the gastric mucous membrane.

While rabbits offer conditions in a way favorable to experiments of this character, they are so liable to intercurrent bacterial and protozoal infections as to lead to many irregularities when large numbers of them are used. In the course of this work a number of experiments have been seriously vitiated by reason of such complications. The general plan followed in these experiments was to employ groups of equal numbers of animals. All were inoculated in the same way.

then to one group alcohol was given, while to the other no alcohol was administered. They were all then kept under the same conditions of food, etc. Each animal was weighed in the morning before it was fed. In one or two cases the number of "controls" was fewer than that of the alcohol group. Control animals receiving only alcohol were not introduced into each experiment, as the necessary data on this point could always be had by reference to the records of preceding experiments in which the different effects of the drug on different animals was recorded.

Conclusions.

The deductions that may be drawn from the results of these experiments are as follows:

That the normal vital resistance of rabbits to infection by streptococcus pyogenes (erysipelatos) is markedly diminished through the influence of alcohol when given daily to the stage of acute intoxication. That a similar, though by no means so conspicuous, diminution of resistance to infection and intoxication by the bacillus coli communis also occurs in rabbits subjected to the same influences.

And that, while in alcoholized rabbits inoculated in various ways with staphylococcus pyogenes aureus, individual instances of lowered resistance are observed, still it is impossible to say from these experiments that in general a marked difference is noticed between alcoholized and non-alcoholized animals as regards infection by this particular organism.

It is interesting to note that the results of inoculation of alcoholized rabbits with the erysipelas coccus correspond in a way with clinical observations on human beings addicted to the excessive use of alcohol when infected by this organism.

In the course of the work an effort was made to determine if, through the oxidation of alcohol in the tissues to acids of the corresponding chemical group, the increase of susceptibility could be referred to a diminution in the alkalinity of the blood as a result of the presence of such acids. The number of

experiments thus far made on this point is too small to justify dogmatic statements, but from what we have gathered there is but little evidence in support of this view.

Throughout these experiments, with few exceptions, it will be seen that the alcoholized animals not only showed the effects of the inoculations earlier than did the non-alcoholized rabbits, but in the case of the streptococcus inoculations the lesions produced (formation of miliary abscesses) were much more pronounced than are those that usually follow inoculation with this organism.

With regard to this predisposing influence of the alcohol, one is constrained to believe that it is in most cases the result of structural alterations consequent upon its direct action on the tissues, though in a number of the animals no such alteration could be made out by macroscopic examination. I am inclined, however, to the belief, in the light of the work of Berkley and of Friedenwald, done under the direction of Prof. Welch, in the Pathological Laboratory of the Johns Hopkins University, that a closer study of the tissues of these animals would have revealed in all of them structural changes of such a nature as to indicate disturbances of important vital functions of sufficient gravity to fully account for the loss of normal resistance.

The conspicuous influence of the alcohol on the gastric mucous membrane in many of these animals, with the consequent disturbance of nutrition, is undoubtedly the explanation of the marked loss in body weight that was observed in many of the animals employed in these experiments. In this light the susceptibility induced by alcohol to excess is somewhat analogous to that induced by starvation, where we see the resistance of animals to particular forms of infection very markedly diminished.

CONCLUSIONS OF PAPERS PRESENTED AT MOSCOW, AT THE INTERNATIONAL CONGRESS.

We have received the following abstracts of papers read in the section on Hygiene at Moscow, August, 1897. As indicating the interest in inebriety which is growing rapidly in all parts of the world, they are very significant.

Dr. Garochevsky of Samara read a paper on "The Principles of the Struggle against Alcoholism, and the Duty of Special Hospitals for Inebriates."

The following were the conclusions:

- 1st. Alcohol is a product which, sooner or later, destroys the health of those who use it.
- 2d. Alcoholism is not a vice, it is a disease, having its clinical physiognomy and anatomical pathology clearly defined.
- 3d. Alcoholism should be treated in establishments specially designed for the purpose, never in general hospitals or insane asylums.
- 4th. Special hospitals for the treatment of inebriates should be the strongest plea in the struggle against alcoholism.
- 5th. Each province should have at least one hospital specially devoted to the treatment of inebriates.
- 6th. The organization and management of these hospitals should be altogether under the control of those who have the monopoly of the sale of spirituous liquors, etc. This is exacted by the principles of justice and political economy.
- 7th. The decrease of drunkenness depends, in any given country, entirely on the government views as to the sale of spirits.
- 8th. The total abstinence theory is not an illusion, but in the general crusade against alcoholism, it certainly can be useful.

"Hygiene and the Struggle against Alcoholism" was read by Dr. A. M. Korowine (Moscow), with the following conclusions:

1st. The weak side of the fight that is being waged against alcoholism in continental Europe is, that it is carried on by the local governments, the clergy, and the philanthropists. The medical body take but a small part in the struggle.

2d. Medical men, more than any others, could contribute effectually to the wiping out of alcoholism. In fact, from the varied forms which alcoholism assumes, it is absolutely necessary that there should be unanimity of opinion as to what constitutes an inebriate. This question can be settled competently only by medical men.

3d. The present state of the struggle against alcoholism gives rise to consequences hurtful to the entire work. The profound differences of opinion among the medical profession has created a distrust on this subject and a disinclination to test it fairly.

4th. The battle against alcoholism would not, perhaps, succeed were it based on prophylactics; it is by hygiene alone that we can successfully compass this great undertaking.

5th. The purpose of hygiene in this question is to decide to exclude all forms of alcohol from daily drinks, to relegate alcohol to the druggists' shelves, side by side with morphine, ether, etc.

6th. The medical measures necessary to be taken to successfully fight alcoholism are the following:

(a) To determine the point when a moderate drinker should be considered an inebriate. To study the effects of small and average doses of alcoholic preparations.

(b) To test the nutrient, fortifying, and stimulating properties of alcohol on a healthy and on an unhealthy subject, on one who drinks and on a total abstainer. To test the results of alcohol on the vital economy of the human organism. It is here indispensable that there should be a concurrence of opinion among the majority of observers.

(c) To test the powers of alcohol to cause or predispose to illness.

(d) To draw more fully the attention of the medical profession to this disease of contemporary humanity.

(e) To teach anti-alcoholic hygiene in the home and in the schools; also the questions of individual abstinence.

(f) Active aid given by medical men to the authorities and to public institutions in their struggle against alcoholism.

(g) To impress the necessity of treating inebriates in a special hospital.

7th. The present state of the question exacts that the XII Medical Congress sanctions the participation of the medical profession in the struggle against alcoholism by the adoption of the following thesis:

(a) The struggle in question merits as much attention on the part of the medical profession as that against the various epidemics.

(b) The success of the struggle is impossible without the active sympathies of the medical profession.

Dr. Grigoriere of St. Petersburg read a paper "On some Results from the License of Spirits in Russia," with the following points:

1st. The average consumption of spirits per head has gradually lowered to forty degrees in European Russia during the last eleven years: it was 70 per cent. in 1885, and 53 per cent. in 1895.

2d. From the average consumption of spirits per head, such as brandy, wine, beer, reckoned in per cent. of alcohol, Russia occupies the lowest place among European countries: the average individual consumption of pure alcohol in the form of the above-named drinks, show for Russia 0.27 per cent., for Norway, 0.29, for Sweden, 0.38, and last for France, 1.1 per cent.

3d. This decrease in the use of spirituous liquors in Russia shows, in a measure, the efforts of the people themselves

to put a stop to the prevalence of drunkenness among them. These efforts are shown in the arrests made, by the closing of public houses, and non-sale of wines, etc., on holidays.

4th. In the assumption by the government of the license of the sale of wines, etc.; and, above all, by their organizing temperance societies, thus showing the sympathy of the government with the people's efforts towards sobriety.

5th. The reform, which transfers to the government the right of sales of wines, etc., does away with the interference of the publicans, naturally an interested party, besides the establishment of new public houses where wines, liquors, etc., will not be drunk on the premises, with a view to lessening the number of public houses, decreasing drunkenness, preventing the sale of bad liquor, the giving of credit, sales to drunkards or minors, etc.: in a word, putting a limit to drunkenness without interfering with government interests, and without any hindrance to the consumption of good wines, etc., in such quantity as may be necessary to health.

6th. The license by the government of the sale of wines, spirits, etc., like all reforms, has its weak points, but time will remedy these. In every instance in the provinces, where these changes have been made, there is a marked decrease of drunkenness and crime.

7th. The temperance societies have already, by the means they have employed, drawn many people from the public houses. These means are: Public library, reading-rooms, tea-rooms, popular theaters, entertainments, with music and dancing, promenades, etc., these all becoming factors in the instruction and education of the masses: their utility is being constantly proved: their salutary influence is felt already, and we look forward with the fullest hope to having, in the future, our efforts crowned with success.

Several other papers were read on the dangers of alcohol to public health and individuals, and, although presented by physicians, were semi-moral discussions of little scientific interest.

Abstracts and Reviews.

THE PATHOLOGY AND TREATMENT OF CHRONIC ALCOHOLISM.

BY H. WERNICKE GENTLES, M.D., C.M., CHICAGO, ILL.

The Pathology of Chronic Alcoholism.

In beginning the subject of the Pathology of Chronic Alcoholism, I cannot do better than review the post-mortem appearances found in such subjects.

Stomach. — The mucous membrane is of a dark bluish red hue with patches of erosion and ulceration scattered over it, specially marked over the pyloric end and upper intestine. The muscular coat is thinned and becomes semi-transparent, the dilated vessels showing in marked contrast. Dilatation of the stomach is specially the case in malt liquor drinkers. Sub-mucous connective tissue is increased with marked atrophy of the secreting glands.

The liver is cirrhotic, nutmeg or fatty. The spleen is frequently enlarged. The kidneys show similar loss of secreting tissue as the stomach and liver. Old pleuritic adhesions are frequent. In the lungs, lobar emphysema, bronchitis, or hypostatic consolidation is generally found.

Heart. — The heart is imbedded in fat. The muscles are flabby, pale, infiltrated, or degenerated. Frequently dilated, or dilated and hypertrophied to overcome the increased vis a fronte caused by renal cirrhosis, rigid arteries, and pulmonary complications. There is always dilatation of the arteries, thickening of the muscular coat, frequent atheromatous patches and cysts with calcareous deposits.

In the brain, hyperaemia is not so marked as in acute cases.

The atrophic changes, occurring in the other organs, are very distinct in the brain. The convolutions are narrowed, shrunken, and flattened.

The dura mater is abnormally thickened and adherent to the cranium. The Pacchionian bodies are enlarged. The arachnoid is opaque. The pia mater is thickened and adherent to the surface of the brain, with opaque white spots. There is increase of the ventricular and subarachnoid fluid; sometimes there may be oozing of blood into the substance of the brain.

The vessels from the pia mater to the cortex are enlarged, tortuous, and with marked fatty and atheromatous changes in them; as a result, death frequently occurs from rupture of a vessel.

The surface of the cortex is covered with a fine meshwork of branching cells, most marked around the vessels which penetrate the cortex. The motor areas are specially involved. In the spinal column, there is increased vascularity of the meninges. This is most marked in the postmedian raphe and columns. In the arterial vessels, the thickening may be so great as to fold up the intima in pleats or obliterate the canal of the vessel.

In neuritis, degenerative changes have been found in the posterior root zone in the lumbar and cervical regions. The changes appear to be mostly peripheral. The myelon of the nerve undergoes fatty degeneration, becoming first cloudy; then it breaks up into segments, followed by the formation of fatty drops, and as the result, the axis cylinder is altered or replaced.

When alcohol is taken internally it causes a vasomotor dilatation. The blood is quickly driven to the brain, face, etc., with a resulting pleasurable excitement, and is later followed by dullness and heaviness, if the dose be large enough.

The excitement corresponds with an acute hyperæmia of the brain, the dullness with a passive hyperæmia due to an inhibition of the vaso-constrictor centers. This inhibition is

not confined to the centers which regulate the circulation, but also affect the centers of motion, as shown by the tremulous hand after a night's debauch. In a similar way there is a loss of control over our desires, emotions, and passions, and in the case of the dipsomaniac these changes tend to become permanent, but soon disappear after one bout.

Alcoholic blood parts less easily with its carbonic acid than non-alcoholic blood. During the stage of passive hyperæmia, the brain is laden with venous blood; in addition, the alcohol itself is a direct nerve poison, so that the relation between the new tissue formation and the alcoholic poison, as effect and cause, is evident. The dulled perception of the dipsomaniac can be accounted for in much the same way. The brain, already poorly nourished by a blood containing too much carbonic acid, passing too slowly through the vessel, has a considerable portion of its nourishment diverted for the use of the new tissue. As time goes on, the incoördination of movement, desire, and will, become more marked, and the drunkard's moral and physical being becomes a wreck.

Treatment of Alcoholism.

It may be stated as a broad axiom that no alcohol is to be given in the treatment. Clum is willing to give wine, when necessary, while Kerr says that he has never required to do so in any case.

In the place of alcohol, hot water, lemonade, lime juice, aromatic spirits of ammonia, ginger, cinnamon, coffee, tea, or milk may be used. Demulcent drinks, *e. g.*, slippery elm and flaxseed tea, may be given where there is marked gastritis.

Where nausea and vomiting are a marked feature, give the fluids in small quantities, and either hot or cold, as may best be borne. Marcet recommends oxide of zinc in two-grain doses and upward, thrice daily, and says it helps the patient to sleep.

Juicy fruits or chipped pieces of ice help to relieve the terrible thirst, also effervescent mixtures with bismuth and

quinine, predigested milk, and lime water, club soda, vichy, etc.

The association in the patient's mind of pleasure and alcoholism may be broken by adding antimonial wine to their drink. The cases must be carefully selected and its use in a routine way is to be deprecated.

Dr. C. H. Hughes has used apomorphia with bichloride of gold with the same idea. As the sickness diminishes, concentrated beef broths and soups are administered, liquid beef peptonoids, with or without creosote, light cereals, white fish, then white meats, and as the gastric troubles subside, return to ordinary diet, which, while not entirely vegetarian, should contain little meat and consist largely of fruits and vegetables. Nux vomica and strychnia are of great use, but in alcoholics great care must be taken to watch the effects.

J. B. McConnell of Montreal gives a history of twenty-five cases treated subcutaneously by nitrate of strychnia. The dose varied from one-thirtieth to one-sixth grain, twice daily for ten days, once daily for ten days. The border line of tolerance was reached when two-fifth grain was reached. The maximum dose was given on the third or fourth day and continued throughout treatment. He reported fourteen relapses in eleven months. Phelps of Rochester obtained as good results from strychnia alone as from strychnia and atropin. Some recommend that the curative treatment with strychnia should not be begun until insomnia has ceased.

For the depression, valerianate of zinc; assafoetida. I have found very useful, especially where there is atonic dyspepsia; also a tablet of rhubarb, ipecac, soda, and strychnia, *e. g.* Fraser's, cinchona, quinine, and salicylate of quinine have all been used at this stage. It is also very important that the resulting débris of the last bout, and from the succeeding depression, mental and bodily, should be eliminated. The skin should be kept open by baths, by the wet pack, and the kidneys washed out by the use of saline waters, which also tend to act on the bowels.

Kerr emphasizes the effect of liquor ammonii acetatis in causing free perspiration and diuresis, and for its calming effect. For the drink craze, the more simple the remedies the better. Kerr believes in simple emetics, *e. g.*, ipecacuanha. He says that the patient, after its use, gets a quiet, refreshing sleep, very different from the broken, restless sleep obtained by the use of opium, morphia, etc. He also recommends tincture of avena sativa in fifteen to twenty drop doses, hot drinks, aromatics and tincture of capsicum, taking care not to establish a capsicum habit.

Apomorphia. I have used hypodermically in two cases, but had no chance to observe the results. They certainly had no desire for drink at the time of treatment, and one patient said that frequently he slept for some hours after the primary effects had worn off. Tincture of gelsemium, very closely watched, did good service in one case. Doses of potent drugs, such as strychnia, atropin, etc., should be given with care, and the result carefully watched. Massage, I have found of service in toning up the muscles and preparing them for exercise in the open air. It also diminishes the cutaneous sensitiveness and frequently brings sleep.

For the sleeplessness, phenacetin, grains 8-10, repeated at one hour's interval, is safe, but unreliable. Sulfonal depresses the heart, and if pushed leaves an unsteady gait in many cases. Trional and paraldehyde are good, but if given largely may be followed by reactionary excitement. Chloral is believed to be safer than morphia where there are rigid arteries.

The preliminary purge followed by large doses of liquor ammonii acetatis, with the resulting diuresis and sudorific effect, often does a great deal to quiet the patient.

Baths, Turkish, Russian, or the wet pack, have also a sedative effect, while they also remove the alcohol and the debris from the system. Anstie recommends very highly tincture of sumbul and ether, each one-half dram. When the treatment is begun the patient should be watched night and day so that he shall have no chance to lapse. If the physician

cannot obtain full control of the patient and his surroundings, then he should try to bring about his removal to a well-conducted home, where he will have the best of skilled attention at the hands of physicians and attendants who are total abstainers, themselves.

The physician, in the treatment of chronic alcoholism, must impress the patient with the feeling that no matter how much he tries evasion he will be forestalled; also that the physician is determined to cure him in spite of himself. I do not think that too much emphasis can be laid upon this attitude of the physician toward his patient.

The surroundings of the patient must be attended to, and he should be compelled to take the greatest possible care of his person and his clothes. Improvement in this respect on the part of the patient is of good prognostic import. We all know the effect upon ourselves of wearing a new suit of clothes. Rest and nerve reconstructives are required; hypophosphites, coca, cod-liver oil, etc., have all been lauded. The patient must be encouraged in every possible way, and allured from thoughts of himself by light exercise, music, or some occupation which does not overtax his muscles. His meals should be clean, appetizing, wholesome, and easily digested, and ought to come by the clock. Everything in the way of exciting causes should be sought out and the indications met. If gastric, then some stomachic treatment. Many appear to be relieved by ipecac, rhubarb, and soda, capsicum alone, or in combination, bitter tonics, digestives, etc.

Idleness, brain worry, overwork, mental strains; and, in women, ovarian and uterine troubles are frequent causes of lapsing, and have to be met with appropriate treatment. In all cases artificial aids to sleep ought to be discontinued while the patient is under the physician's hands. In the majority of cases the use of tobacco ought not to be allowed, as alcoholic drink and tobacco are inseparably connected in many cases. In melancholia and neuritis forced feeding may be required, and the numerous complications, such as albuminuria, uremic

convulsions, jaundice, pneumonia, and bronchitis, require treatment, and it may be added that they are more intractable than in non-alcoholic states.— *Medical Times*.

HOW FAR IS INEBRIETY INFLUENCED BY STRINGENT TIMES?

The American *Grocer* answers this question in the following statistics and tables:

It is evident that hard times have contributed to a notable diminution in the use of all kinds of beverages, but particularly spirits. Possibly the bicycle has contributed to decrease the patronage of saloons, but whatever the cause the following official figures show that the consumption of alcoholic stimulants has not increased, while the use of the milder beverages has barely been steady:

PER CAPITA CONSUMPTION OF LIQUORS				
	Spirits Gallons	Wines Gallons	Beer Gallons	Total Gallons
1896	1.00	.26	15.10	16.42
1895	1.12	.28	16.08	16.35
1894	1.33	.31	15.18	16.82
1893	1.51	.48	14.95	18.04
1892	1.50	.44	15.16	17.04

These figures are surprising, in view of a reduction in the use of spirits from one and one-half gallons to one gallon per capita in five years. Naturally, under such circumstances, one looks for an increase in the use of the milder stimulants, but, instead, we find the use of wines has decreased from about one-half to one-quarter of a gallon per capita, while the use of beer has been stationary, whereas, during the five years, 1887 to 1892, it rose from 11.23 gallons in 1887, to 15.28 gallons in 1891, a period of marked prosperity. In 1896, 71,263,000 people used less spirits than 58,680,000 people did in 1887. About 11,000,000 gallons of spirits are used annually in the arts, manufactures, and medicine, so that deducting that quantity leaves about 60,000,000 gallons for use as a

beverage. Barrooms show an average of sixty drinks per gallon, returning about \$4.50, thus making the nation's whisky bill, in 1896, as a beverage, \$270,000,000, while in 1892 and 1893 it averaged \$400,500,000. This decrease accounts for a big loss in revenue, officially reported in 1896 at nearly \$14,000,000 less than in 1893. Foreign spirits are in favor in fashionable circles, and yet the importations in 1896, while heavier than for the four preceding years, were lighter than in 1890 or 1891.

Beer disputes with coffee the claim to be the national beverage. Twenty years ago the per capita consumption was less than one-half of what it is to-day, or six and one-half gallons against fifteen gallons in 1896. During the prosperous years, 1891 and 1893, the consumption reached its maximum, rising in 1893 to 16.08 gallons, since which date it has fallen off about one gallon per capita, averaging for the past three years fifteen gallons per capita annually. Hard times and bicycles explain this decrease in the use of malt liquors. On the basis of 50 cents per gallon for domestic beer and \$1 for imported beer, as the cost to the consumer, we have a total expense for that item in 1896 of \$541,963,348. It is very evident that Americans are not given to a free use of wines. The consumption of domestic wines in 1896 was less than one-half the quantity used in 1888, leaving out of question an increase in population of 12,583,000 people. Less imported wines are used than formerly. In 1883 the importations were more than double those in 1896, and over 1,500,000 gallons less than in 1893. The figures ought to encourage the friends of temperance, although they may be discouraging to the wine industry of the United States. Assuming that domestic wines cost the consumer \$2 per gallon, the nation's bill in 1896 for that item was \$29,199,514. The importations of that year were valued at the custom house (plus duties) at \$10,265,465. Allowing 100 per cent. profit to distributors, the cost of foreign wines for the year 1896 was \$20,530,930, which, added to the cost

of domestic wines, makes the nation's wine bill last year \$49,730,444.

Bringing the above items of the cost of alcoholic beverages together, we have the following as the drink bill of the American people, so far as alcoholic stimulants are concerned: Beer (domestic), \$538,662,857; beer (imported), \$3,300,531; whisky (exclusive of quantity used in arts), \$270,000,000; wines (domestic), \$29,199,514; wines (imported), \$20,530,930; grand total, \$861,693,832; estimated cost in 1892, on the same basis, \$1,000,884,277; estimated cost in 1891, on the same basis, \$934,813,314. Is not the above full of encouragement to advocates of temperance? There is a wonderful decrease in the use of ardent spirits and wines, and no gain in the use of beer. A comparison of the ten years' record indicates that good times foster the use of alcoholic stimulants. If we study the table showing the consumption of non-alcoholic stimulants, we find the same conditions governing their use. Measured by the number of gallons of the beverage consumed, coffee ranks next to beer as a popular beverage. Assuming that one pound of coffee makes two gallons of infusion, we have a year's consumption of 962,088,692 gallons, at a cost of \$120,261,056. The per capita consumption of tea does not increase; in fact, is less than it was twenty-five years ago, when it averaged one and one-half pounds, against one and three-tenths pounds in 1896. The import cost of the tea received in 1896 was \$15,585,741. The retail cost was, at least, double this, or \$31,171,482. It is safe to say that one pound of tea, as ordinarily brewed, will make five gallons of beverage, on which basis there was last year a total consumption of 466,701,240 gallons, costing 6 3-5 cents per gallon, thus making tea the cheapest of all beverages in general use. The 1896 imports of crude cocoa, leaves and shells, amounted to 23,276,597 pounds, valued at \$2,387,078. A large part of this is used for confectionery and other purposes than a beverage, but it is safe to estimate that the retail cost of the chocolate and cocoa used as a beverage does not exceed \$3,000,000.

Bringing together into one group, we find that the United States consumed in 1896, alcoholic and non-alcoholic stimulants to the value of \$1,016,126,400, as follows: Alcoholic drinks, \$861,693,832; non-alcoholic stimulants—coffee, \$120,261,086; tea, \$31,171,482; cocoa, \$3,000,000; total, \$1,016,126,400. The above represents a yearly per capita expenditure for beverages of \$14.31 for the 71,000,000 inhabitants of the United States, or 4 cents per day. Evidently hard times have cut down the appetite for beverages of all kinds, and render distilleries hazardous industries. Breweries and coffee mills are far better property.

HASHEESH (CANNABIS INDICA) INEBRIETY.

Hyslop gives a review of Mental Diseases in the *London Practitioner* for February, 1897. In its course he remarks that hasheesh as a cause of insanity is the subject of a valuable report by Dr. Warnock, the medical superintendent of the Cairo Lunatic Asylum. He concludes that no doubt in quite a considerable number of cases hasheesh is the chief, if not the only, cause of the mental disease. Hasheesh insanity can scarcely be diagnosed by its clinical character alone. Sudden and rapid recovery on abstinence from the drug is the most pathognomonic symptom. He classifies the usual types of hasheesh insanity as being: (a) Hasheesh intoxication: An elated, reckless state, in which optical hallucinations and delusions that devils possess the subject frequently exist. Sometimes the condition amounts to a delirium, which is usually milder, more manageable, and less aggressive than that of alcohol, and exhibits none of the ataxic phenomena of the latter. Recovery takes place in a day or less, and the patient usually recognizes the cause of his excitement. In connection with these cases Dr. Warnock raises the interesting medico-legal question, "Are such patients to be held responsible for crimes committed during the hasheesh intoxication, as ordinary

drunkards are? or are they absolved from responsibility, as being temporarily insane? Persons chronically insane from drink are held to be responsible for criminal acts, temporary intoxication, on the contrary, being no plea. Will the same principle be applied to hasheesh crimes?" (b) Acute mania: In this type terrifying hallucinations, fear of neighbors, outrageous conduct, continual restlessness and talking, sleeplessness, exhaustion, marked incoherence, and complete absorption in insane ideas, are the prominent symptoms. Such cases last some months and do not always recover. (c) Weak-mindedness with acute outbreaks after each hasheesh excess: These cases are very numerous. While in residence such patients are usually quiet and well behaved, and only betray the impaired state of their brains by being over talkative, easily pleased, lazy, anergic, excitable on small provocation, unconcerned about their future, and willing to stay in hospital all their lives: they show no interest in their relatives, and only ask for plenty of food and cigarettes. After being discharged such cases soon return in a condition of excitement — in fact, in a mild form of type *b*. They can talk rapidly, and rush about pouring torrents of abuse on those near them, curse and rave on slight provocation, are sleepless, and forever moving in an aimless way; are urgent to be released, deny the use of hasheesh at one moment and boast of its wonderful effects the next. Besides these types there are numbers of cases of chronic mania, mania of persecution, and chronic dementia, alleged to be produced by hasheesh.

Dr. Warnock also quotes some of the conclusions of the "Indian Hemp Drug Commission" of 1893-94. Its moderate use has no physical, mental, or moral effects whatever; its excessive use, on the other hand, injures the physical constitution, and may cause dysentery and bronchitis; it tends to weaken the mind, and may sometimes cause insanity; it induces mental depravity and poverty, but rarely crime. The injury caused by excessive use is confined almost exclusively to the consumer, and scarcely affects society. In India hemp

drugs are regarded as causing insanity more rarely than has popularly been supposed, and the resultant insanity is usually of a temporary character and of shorter duration than that due to other causes.

PHENOMENA OF MESCAL INTOXICATION.

BY HAVELOCK ELLIS, M.D., LONDON, ENGLAND.

On Good Friday, being entirely alone in quiet London rooms, I made an infusion of three mescal buttons (a full dose) and took it in three portions, at intervals of an hour, between 2:30 and 4:30 p. m. The first noteworthy result (and the only one of therapeutic interest which I have to record) was that a headache, which had been present for some hours and showed a tendency to aggravation, was immediately relieved and speedily dissipated. There was slight drowsiness before the third dose was taken, but this speedily passed off and gave place to a certain consciousness of unusual energy and intellectual power, which also quickly passed off. So far no visual phenomena had appeared, even when the eyes were closed for several minutes, and there was yet no marked increase of knee-jerk: there was, however, a certain heightening of muscular irritability, such as may be noted when one has been without sleep for an unusual period. The pulse also began to fall. After the third dose, I was still feeling, on the whole, better than before I began the experiment. But at 5 p. m. I felt slightly faint, and it became difficult to concentrate my attention in reading: I lay down and found that the pulse had now fallen to 48, but no visual phenomena had yet appeared. At 6 p. m. I noticed, while lying down (in which position I was able to read), that a pale violet shadow floated over the page.

I had already noted that objects which were not in the direct line of vision showed a tendency to be heightened in color and to appear enlarged and obtrusive, while after-images began to be marked and persistent. At 6 p. m. there was a

slight feeling of faintness, as well as of nausea, and the first symptoms of muscular incoördination began to appear, but there was no marked discomfort. By 7 p. m. vision had begun to appear with closed eyelids, a vague, confused mass of kaleidoscopic character. The visual phenomena seen with open eyes now also became more marked, and in addition to the very distinct violet shadow there were faint green shadows. Perhaps the most pleasant moments in the experience occurred at 7:30 p. m., when, for the first time, the color visions with closed eyes became vivid and distinct, while at the same time I had an olfactory hallucination, the air seeming filled with vague perfume.

Meanwhile, the pulse had been rising, and by 8:30 p. m. had reached its normal level (72 in the sitting posture). At the same time muscular incoördination had so far advanced that it was almost impossible to manipulate a pen, and I had to write with a pencil; this, also, I could soon use only for a few minutes at a time; and, as I wrote, a golden tone now lay over the paper, and the pencil seemed to write in gold, while my hand, seen in indirect vision as I wrote, looked bronzed, scaled, and flushed with red.

Except for slight nausea, I continued to feel well and there was no loss of mental coolness or alertness. When gazing at the visions with closed eyes I occasionally experienced right frontal headache, but as I only noticed it at this time, I attribute this mainly to the concentration of visual attention.

In one very important particular my experience differs from Dr. Weir Mitchell's. He was unable to see the visions with open eyes, even in the darkest room. I found it perfectly easy to see them with open eyes in a dark room, though they were less brilliant than when the eyes were closed. At 10 p. m., finding that movement distinctly aggravated the nausea and faintness, I went to bed, and, as I undressed, was impressed by the bronzed and pigmented appearance of my limbs. In bed, the nausea entirely disappeared, not to reappear, the only discomfort that remained being the sensation of thoracic

oppression, and the occasional involuntary sighing, evidently due to shallow respiration, which had appeared about the same time as the vision began. But there was not the slightest drowsiness. This insomnia seemed to be connected less with the constantly shifting visions, which were always beautiful and agreeable, than with the vague alarm caused by thoracic oppression, and more especially with the auditory hyperesthesia.

I was uncomfortably receptive to sounds of every kind, and whenever I seemed to be nearly falling asleep I was invariably startled either by the exaggerated reverberation of some distant street noise (though the neighborhood was even quieter than usual), or, again, by the mental image (not hallucination) of a loud sound, or, again, as I was sometimes inclined to think, by actual faint hallucinatory sounds; this, however, was difficult to verify. At a later stage there was some ringing in the ear. There was slight twitching of the larger muscles of the legs, etc., and before going to bed I had ascertained that the knee-jerk was much exaggerated. The skin was hot and dry. The visions continued.

After some hours, tired of watching them, I lighted the gas. Then I found myself in a position to watch a new series of vivid phenomena, to which the previous investigators had not alluded. The gas — *i. e.*, an ordinary flickering burner — seemed to burn with great brilliance, sending out waves of light which extended and contracted rhythmically in an enormously exaggerated manner. What chiefly impressed me, however, were the shadows which came in all directions, heightened by flushes of red, green, and especially violet. The whole room then became vivid and beautiful, and the tone and texture of the whitewashed, but not remarkably white ceiling, was immensely improved. The difference between the room as I then saw it and its usual appearance was precisely the difference one may often observe between the picture of a room and the actual room. The shadows I saw were the shadows which the artist puts in, but which are not visible under normal

conditions of casual inspection. The violet shadows especially reminded me of Monet's paintings, and as I gazed at them it occurred to me that mescal, doubtless, reproduces the same conditions of visual hyperesthesia, or, rather, exhaustion, which is certainly produced in the artist by prolonged visual attention (although this point has yet received no attention from psychologists). It seems probable that these predominantly violet shadows are to some extent conditioned by the dilatation of the pupils, which, as the American observers had already noted, always occurs in mescal intoxication.

I may remark in this connection that violet vision has been noted after eye operations: and Dobrowolsky has argued that a necessary condition for such vision is the dilatation of the pupils produced by atropin, so that the color vision (chiefly violet, though to some extent of other colors), is really of the nature of an after image due to bright light. Dobrowolsky's explanation seems to fit in accurately with my experiences under mescal.

I wished to ascertain how the subdued and steady electric light would influence vision, and passed into the next room. Here the richly colored shadows, evidently due to the stimulus of the flickering light, were not obtrusive; but I was able to observe that whatever I gazed at showed a tendency to wave or pulsate. The curtains waved to a marked extent. On close inspection I detected a slight amount of real movement, which, doubtless, increased the coarser imaginary movement; this latter showed a tendency to spread to the walls. At the same time the matting on the floor showed a very rich texture, thick and felted, and seemed to rise in little waves. These effects were clearly produced by the play of heightened shadows on the outskirts of the visual field. At 3:30 A. M. I found that the phenomena were distinctly decreasing, and soon fell asleep. Sleep was apparently peaceful and dreamless, and I rose at the usual hour without any sense of fatigue, although there was a slight headache. A few of the faint visual phenomena

with which the experience had commenced still persisted for a few hours.

Motor incoördination and the thoracic symptoms of cardiac and respiratory depression were in my case the only really unpleasant symptoms of the experiment. They are barely noticed by the American observers, who emphasize the gastric symptoms and headache, in Dr. Weir Mitchell's case persisting for several days. In my case there were practically no unpleasant after results. I cannot say how far the method of administration affected this result. I took the drug in infusion; previous experimenters used an extract or a tincture, or else ate the buttons.

It cannot be said (from my experience) that the pleasure of mesal intoxication lies in any resultant passive emotional state such as is produced by tea or alcohol, but strictly in the enjoyment of the color visions produced. Attention is impaired (and one realizes under the influence of mesal how largely attention is a matter of coördination), but intellectual judgment remains unimpaired. The visions, as I recall them, seem to me (unlike most dream visions) as beautiful in memory as when I experienced them. The sensory phenomena seem to be due to great and general disintegration and exhaustion of the sensory apparatus: in a slighter degree the same phenomena are found in neurasthenia, even the color vision. I am convinced that all the senses were more or less affected. There were vague dermal sensations, and the body felt unfamiliar to touch, just as everything seemed delightfully unfamiliar to the sense of vision. I noticed, also, that any marked casual stimulation of the skin produced other sensory phenomena — a heightening of the visions or an impression of sound. This is a phenomenon which may throw an interesting light on the synesthesia or "secondary sensations."

The phenomena of mesal intoxication are thus mainly a saturnalia of the specific senses, and chiefly an orgy of vision. Personally, I have found the penalty of a single dose surprisingly light, though, having learned what the experience has

to teach, I have no special inclination to renew it. But I fully agree with Dr. Weir Mitchell, that there is every likelihood that mescol will become popular. It certainly has a great future before it with those who cultivate the vision-breeding drugs. At the same time, it is of no little interest to the physiologist and psychologist.—*Medical and Surgical Reporter*.

PATHOGENESIS OF DELIRIUM TREMENS.

Jacobson (*Hospitalstidende*, p. 143, 1897) has collected 247 recovered cases of delirium tremens, observed by himself in order to study the pathogenesis of this disease. Of these cases 202 were pure and 45 complicated by other diseases.

Of course, abuse of spirits is a necessary condition to the evolution of delirium, but it is not sufficient to bring about the attack, as many potatoes indulge their vice without ever getting delirium. Among the occasional causes, traumatic lesions have specially been mentioned, and it is true that many of the patients come to the hospital with such; but, on close examination, it appeared that the lesions were acquired either after the commencement of the delirium or in the period of incubation, and, consequently, the traumatic lesion cannot be made responsible for the attack. In 15 per cent. of the patients it was noted that they sometime ago had received a wound of the head; and perhaps a lesion of the skull or the brain, resulting from such a lesion, may be regarded as a predisposing factor.

Twenty-two cases were complicated by pneumonia, and when, also, the lethal cases observed by the author are taken into account, more than 12 per cent. of all cases of delirium tremens were combined with pneumonia.

Generally the delirium commenced on the fourth day of the pneumonia, but the evolution of the two diseases is not congruous; either of them may finish without influencing the

other disease. Although the delirium tremens cannot be regarded as caused by the action of the pneumococcus, it resembles, in all features, an infectious disease: it has a stage of incubation,—a duration of about four days; it ends with a critical sleep; is accompanied by rise of temperature and almost in all cases by albuminuria, and when autopsy is made the spleen is generally found to be the seat of parenchymatous degeneration, as well as the heart, the kidneys, and the liver.

In the opinion of the author, delirium tremens occurs when a brain, deteriorated by chronic alcoholism, is influenced by a toxic agent, either due to the action of bacteria or to auto-intoxication, from diseases of the digestive tract, the kidneys, or the liver. Jacobson regards the therapeutic treatment as quite incapable of abbreviating the duration of the disease; the critical sleep cannot be induced by any drug.

INEBRIATE HEREDITY IN CRIME.

Dr. Laurent, in his work on *Inmates of Prisons in Paris*, says: The prisons of France are inhabited in a great part by descendants of inebriates and degenerates. A total abstainer among criminals is an exception to the rule, while every alcoholic is not a criminal, this is due to accident and care of friends, for alcohol paralyzes the cerebral functions and annihilates the will, then the field is open to anger, impulsiveness, and bad instincts.

Dr. Foli, in a work on *Criminal France*, says: Alcoholism is one of the most patent causes of race degeneration. Crime, which is the most powerful factor of alcoholism, never leaves the family or individual their primitive integrity. Dr. Grenier, in *A Study of the Descendants of Alcoholics*, says alcohol is one of the most active agents in the degeneracy of the race. Such descendants are often inferior beings, a notable proportion coming under the categories of idiots and debilitated imbeciles. The morbid influence of parents is at

its maximum when conception takes place, at the time of drunkenness of one or both parties. Those tainted with hereditary alcoholism show a tendency to excess, and half of them become alcoholics. A large number of cases of neurosis have their principal cause in alcoholic antecedents. A large part of the sons of alcoholics have convulsions in early infancy. Epilepsy is almost characteristic of the alcoholism of their parents when it is not a reproduction in them, or when it is not an index of a nervous disposition of the whole family. The alcoholic delirium is more frequent in the descendants of alcoholics than in their parents, which indicates their intellectual degeneration.

Dr. Baer, in his work on the *Drink Evil*, remarks: In the later stages of alcoholism there is a considerable number of cases of pronounced insanity. The form is usually chronic mania, epileptic insanity, delusional insanity, general paralysis, and other forms of incurable insanity. In other cases alcoholic excess is a symptom of a diseased nervous system, and there has been insanity before the drinking commenced. In the first stages of mania melancholia and general paralysis, many are driven to the use of alcohol. Dipsomania is a form of insanity and is periodic. Besides all these, there are numbers of drinkers on the border-line between health and disease who, on account of their inherited mental weakness and consequent irritability through over-work, are given to alcoholic excesses. There is still a greater number of habitual drunkards, who are not insane, but who, through long abuse of alcohol, cannot resist drinking. They reach such a degree of volitional and intellectual weakness, of irritability and stupidity, indifference to customs and positions, and mistrust, and carelessness in regard to their family, that it is a question whether they are not a common danger to society. Such persons are most dangerous because their condition is latent and their attacks appear suddenly.

These recent utterances are significant of a great change of opinion. The denial of any relationship between inebriety,

heredity, and crime, put forth so authoritatively in the face of such overwhelming proofs, can have no possible value. Such papers would be out of place in this journal.

MISTAKES IN DIAGNOSIS OF INEBRIETY.

The *Cleveland Journal of Medicine* gives the following:

"A recent occurrence in this city and one which is not at all uncommon indicates that our police authorities have yet need to learn how to care for the unconscious human forms which are regularly found in a city's streets. A gentleman returning from the Grand Army Encampment at Buffalo was taken suddenly ill on the train with symptoms apparently of hemiplegia. It is said he took a drink of whisky in the hope of improving his condition and then became unconscious. On arriving in this city the police were notified, and finding a strong smell of whisky on his breath at once concluded it was a case of 'drunk.' They hustled him to the police station where he remained over night in jail, having no friends to look after him. In the morning it was discovered that he was ill and he died soon after removal to the hospital. It is not suggested that his life would have been saved by more care in his treatment, but the pride of the city would be less injured if the suffering man had been at once taken to a hospital instead of to the jail. It ought to be made an universal and obligatory rule for the police to have a medical man see at the earliest possible moment every unconscious person who may fall into their hands. The police authorities of this city should at once make such a rule and see that it is carefully observed. By so doing lives may be saved and certainly the good name and self-respect of the city will not be so frequently shocked."

The following is another illustration of similar errors. A temperate man was found unconscious in Central Park, N. Y., and taken to the station-house. He seemed delirious, and was hit by the officer on the head to quiet him. His unconscious-

ness continued in the station-house, and twenty-four hours after he was removed to the hospital, where he died. The post mortem revealed cerebral hemorrhage.

NEUROLOGY.

Influence of Cold Baths in Delirium Tremens. — Little recommends as a sedative in delirium tremens a cold bath of 65 degrees 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 morphin 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 degrees F., increased in the first three minutes cyanosis 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. — *Med. News.*

HYPNOTIC MAGAZINE.

Doctor: Your library is not complete without the *Hypnotic Magazine*. Cost of this handsome monthly, including premium book on "Suggestive Therapeutics," is only one dollar (\$1.00) a year.—The Psychic Publishing Company, 56 Fifth Avenue, Chicago, Ill.

Appleton's Science Monthly has, during the past year, published the Lowel Lectures on Racial Geography, one of the great contributions to science of the year. Other equally important papers have appeared in this monthly. No other publication contains more valuable and instructive matter.

The *Homiletic Review* is one of the great standard magazines. As the months and years pass we are more and more impressed with the variety, breadth, solidity, and practical value of this standard magazine, published for the special use of the preacher. Published monthly by Funk & Wagnalls Co., 30 Lafayette Place, New York. \$3.00 a year.

THE FORGE IN THE FOREST.—By Chas. G. D. Roberts.
Published by Lamson, Wolfe and Co., Boston. \$1.50.

This novel is historical. Its locale is the region round about Grand Pré; its time, a decade before the exiling of the hapless Acadians, in 1755; and its theme, the exploits of one Jean de Mer, a famous ranger of that day.

It is a charming story, charmingly told. Its diction is delightful,—notably so, the foreword. The characters—clean-cut. Strongly drawn—fairly throb with the fervor of wood-ranging life: the interest, strong from the start, keeps steadily up to the finish, and the sweet love undercurrent going on to a happy ending, gives it all a peculiar charm. As poet and historian, Prof. Roberts wears well-earned laurels, and to these this stirring romance will surely add.

THE STORY OF THE HUTCHINSONS. By John W. Hutchinson. 2 vols., Lee and Shepard, Boston.

The helpful power of music in certain morbid psychical conditions is beyond question. Again and again the writer has had proof of that fact. To its soothing, restful help, when fretted and worn by the cares of his calling, many a medical man can well attest. Save to those under Shakespeare's ban.

its influence, rightly expended, is ever for good, and gauged by such standard the measure of its beneficence to make the world better, admits of no compute. To those of our guild who, half-a-lifetime and more ago, were "moved by the concord of sweet sounds," such as only that "band of brothers" could give. "The Story of the Hutchinsons" comes with peculiar charm. It is the story of a noble work told by the sole survivor of that noble band. Nearly 60 years ago — Thanksgiving Day, 1839 — they began that work, and no one who heard their songs, especially "The Old Granite State" and "Ship on Fire" — sung in a thrillingly inimitable way, can ever forget their charm. To all such the record of these handsome volumes will revive pleasant memories of happy hours under the witchery of their musical spell.

THE STAR SAPPHIRE. By Mabel Collins. Roberts Bros., Publishers, Boston.

This is a strongly written story, telling in fiction what, unhappily, so often presents in fact — the tale of a charming woman, tainted with the heritage of rum, going steadily down to a drunkard's doom. It is a study in dipsomania well worth reading.

NO PLACE FOR REPENTANCE. By Ellen F. Pinsent. A. D. F. Randolph, Publisher, New York.

This is another novel along alcoholic lines. It depicts one of those heart tragedies so often noted in lives handicapped by ancestral obliquity, and proves that a life devoted to doing good to others under the thrall of drink, may itself go down before the resistless power of this dread disease.

The sale of cocaine, except upon the written prescription of a legally qualified physician or dentist, has been forbidden by an act of the Colorado legislature.

Editorial.

INEBRIATE DELUSIONS.

The Boston *Daily Traveler* gives great prominence to an interview with an escaped inmate of the Foxboro Inebriate Asylum of Mass., as if this was a new topic, and the story had never been told before. The narrator, after twenty-eight days' residence, considered himself cured and ran away. During this time he found many abuses which he describes, with the reserve that he could give many more details of similar character. His statement is of interest as illustrating nearly all the common delusions of inebriate degeneracy. First, the dishonesty and hypocrisy of the management; then the abundance of spirits in the institution to be had for money, and the frequent intoxications of the inmates, and the ease with which they could escape at will; then the bad food, and worse treatment, and frequent deaths from want of spirits as medicines, with neglect and use of coarse remedies not appropriate; finally, the officers' partiality and ignorance, with intense prejudices against certain persons. Also the restraint which was cruel and destructive to every nervous person. These general charges are supplemented by various minor claims of wrongs and abuses, with statements of inmates, who have no opportunity to be heard, and who suffer in silence. Nearly thirty years ago a runaway inmate of the asylum at Binghamton made the same particular charges, and a legislative investigation, which cost the state five thousand dollars, found the statements to be delusions and without reality. In every asylum of this kind in the country, the same charges are heard from the inmates daily. The same delusions of wrongs, abuses, and failures of the management and general dishonesty, and

the same stories of ability to procure spirits at all times, are the common talk of inebriates who are restrained in asylums. The prominence of some particular delusions indicates failures of some particular faculty, where the nutrient centers are impaired, delusions of bad food and dangerous, inappropriate medicines, will appear. The craze for spirits will manifest itself in convictions that spirits can be had any time, with but little or no effort, and that others are drinking secretly all the time. The impaired consciousness of right and wrong suggests dishonesty in all persons who have any control over them. The moral palsy, which is always a consequence of continuous use of alcohol, makes them untruthful, intriguing, and incapable of honest open conduct. All the higher brain centers are paralyzed. Such persons are unable to judge of the ethical relations of persons and events. His sense perceptions are injured, and the power of correcting them lost. Such persons may reason and appear well, but it will be along automatic lines, on matters foreign to their own personality. But on matters concerning himself and his relation to the surroundings, he is an imbecile. The Foxboro inebriate, in his charges against the asylum, gives a graphic picture of his own mental disability and unsoundness. No inquiry could bring out a more perfect representation of the faulty delusional mind breaking down in certain directions. The exaggerations, misconceptions, hallucinations, and delusions of inebriates are seen everywhere, in business, in social and professional life, and in literature. When they appear along certain special lines, and relating to certain topics, there should be no mistake about them. An inebriate's opinion of the proper treatment of his malady is of no more value than a lunatic's opinion of asylums or of his own case. These, of all other subjects, he is most incompetent to judge of. He is incapacitated in every way to be a fair, honest witness, and his statements are only of value as studies of his particular brain malady and degeneration.

THE STUDY OF THE EFFECTS OF ALCOHOL IN
THE PUBLIC SCHOOLS.

The compulsory teaching of the effects of alcohol in the schools, is one of the most important preventive measures against inebriety of the century. It is a clear recognition of the disease of inebriety, and the possibility of prevention, by teaching the dangers of alcohol as a beverage, and the growth of inebriety from ignorance and neglect.

The history of the movement which led up to the remarkable work of Mrs. Mary H. Hunt is a very striking chapter of evolution. The early temperance efforts, which finally concentrated in the Washingtonian reform wave were followed by fixed and continuous work through organized societies to make known the evils from the use of alcohol. Then came the scientific study and the asylum movement to study these cases as sick and diseased. The latter roused up a fierce opposition, which brought out a more startling array of facts, with new views of the causes and conditions of inebriety. The early scientists gathered a vast array of facts to prove the presence of disease, and the opponents eagerly grasped and utilized these facts, while denying the conclusions. Out of this confusion the association for the study and cure of inebriety came, and the Woman's Christian Temperance Union, and other societies. One has gathered some of the facts of inebriety, its origin and growth, and the study of alcohol and its action on the body, while the other has reached conclusions, and sought to apply remedies along moral lines. It was the scientific fact brought out by the association for the study and cure of inebriety, that a large proportion of inebriates began to use spirits in childhood; that alcohol as a beverage was dangerous in early life; that hygienic neglect, bad surroundings, with ignorance of the danger of all forms of spirits, was a very active cause of inebriety in later life. Also that inebriety was a disease, the prevention of which must begin in

knowledge and the use of means, applied along exact lines of cause and effect; and that the study of the body and its care, was the great essential in the prevention of all disease. These are some of the facts which were accepted by intelligent men and women, and made it possible to enact laws enforcing such instruction in schools. It was a study of this great drink problem from a scientific point of view, that suggested prevention and the possibility of removing many of the causes, and lessening the disease. Unconsciously both scientists and moralists gathered and scattered the facts which opened a new field of prevention, of greater practical importance, than any other hygienic measure of the past century. The work of Mrs. Hunt in securing laws in congress and all the states but three, making the study of hygiene and the effects of alcohol compulsory in the common schools, is literally phenomenal. In addition to this, arranging and preparing the books required for this work, in this Mrs. Hunt has accomplished a pioneer work, very rarely seen in a single life.

The study of inebriety and the effects of alcohol is passing a tremendous evolutionary epoch. This explains the marvel of a talented energetic woman, who practically, alone, influences the legislatures of forty-one states and the national congress, to pass laws, that conflict with the strongest personal prejudices, and the present and future pecunairy interests of many persons. The bitter detraction and opposition which has opposed this work, beat in vain against the evolutionray march of truth, and Mrs. Hunt, as its apostle, was invincible. The laws in these states may be altered and the text-books improved, but physiology and the effects of alcohol on the body, has become a national topic for instruction in the common schools. A great advance along the line of preventive medicine has been made. The work of our society in the study of the facts of inebriety, is looming up like distant outline peaks, and not only the prevention, but the cure, of this great border-land disease, is becoming more and more possible every year.

ALCOHOLISM, OPIUM, AND OTHER NARCOTICS.

We give below a record of leading papers on these topics, copied from the "Index Medicus."

These are the titles of papers published, noted during the past six months, from January to July.

This list is supposed to be confined exclusively to leading medical papers which have appeared in the medical journals of the world.

While the list is by no means complete, yet it approximates, and includes most of the articles on this subject. Several papers in the *Journal of Inebriety* are unnoticed, and one paper published in three different journals is noticed three times. Of course these are faults which can be corrected, and show that the literature has attained a degree of prominence which calls for mention of all the leading papers which are appearing with increasing frequency.

We shall continue to publish a record of all papers and books published on these topics.

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THE INTERNATIONAL ANTI-ALCOHOL CONGRESS.

The International Congress against the Abuse of Alcoholic Drinks was held at Brussels from August 30th to September 2d, under the presidency of the Minister of State, M. Lejeune. A number of members of the medical profession, and of clergymen, teachers, and representatives of Belgian and foreign temperance societies, took part in the proceedings. Dr. Motet, of the Paris Academy of Medicine, in an address on "Alcohol, the Family, and the Working Classes," pointed out that the loss to the exchequer which, it was said, would result from the general prevalence of temperance principles was largely imaginary, inasmuch as the bulk of the revenue derived from the sale of intoxicating liquors had to be expended by the state in the discharge of burdens imposed upon it by the consequences of alcoholism. Dr. Destrée dwelt on the unfavorable influence of alcohol on work, whether of body or mind. Dr. De Boeck related experiments on students, which went to show that alcohol, even in small doses, tends to paralyze the higher cerebral centers. M. Roubinovitch gave an account of a systematic effort to check intemperance by teaching in schools; the experience of a three years' propaganda of this kind had convinced him of its efficacy. Mr. J. Whyte, of Manchester, gave statistics from the Rechabite Societies, showing the greater longevity of total abstainers. In dealing with the causes of alcoholism, M. Van den Corput said it was the direct outcome of the storm and stress of life under the conditions created by modern progress. Neuropathy was a sign of the times, and

the remedy for this was intelligent feeding, with the use of beverages, such as "sound and generous beer," milk, tea, coffee, etc. Drs. Romi e and Bienfait urged that it was the duty of the medical profession to co operate strenuously in the struggle against the abuse of alcohol. "Doctors," said one of the speakers, "should not only preach, but practice abstinence," at least as far as brandy, gin, rum, etc., were concerned. Dr. Forel, of Zurich, insisted on total abstinence as the only cure, and spoke well of hypnotic suggestion as an auxiliary means of treatment in alcoholism. Dr. Legrain proposed an international organization for the propagation of temperance principles. The discussion of this question was referred to the next meeting of the Congress, which it was decided should be held in Paris in 1899.

To the above, which appeared in the *British Medical Journal*, we would add that this was the sixth International Congress which has been held in different cities of Europe. Each Congress lasts five days, and the following topics were discussed in separate sections:

1. Alcoholic legislation, sociology, and political economy.
2. Education and instruction.
3. Alcohol in medicine and hygiene.
4. Woman's battle against alcohol.

It will be seen that the studies of alcohol in these meetings cover a very wide field, and enlist the moralists and scientists collectively. Mrs. Mary H. Hunt, the great pioneer leader of temperance instruction in schools, was vice-president, and delivered an address on this subject, which was very highly praised. A dinner was given Mrs. Hunt in London by the Temperance League, at which Dr. Kerr presided, and made an address.

These great biennial congresses are most significant movements, indicating both evolution and revolution from the present theories of alcohol and its place in the progress of the world.

DIET IN THE TREATMENT OF INEBRIETY.

For a long time persons have urged that diet was the real remedy for inebriety. Yet, when it was applied in certain cases, no better results were obtained. The drink symptom remained. Occasionally, the change from a meat to a grain diet, or the reverse, was followed by the subsidence of all desire for spirits. In a continuous drinker, a general diet of both meats and grains appears to meet the demands of a disordered nutrition and semi-starved condition, better than any special articles of food. In the periodic cases, an albuminous or proteid diet is often decidedly injurious. In some cases an intense craving for meat precedes the drink paroxysm, or for starchy foods, which subside when the craze breaks out. The intimate relation between foods and the drink paroxysm is very prominent in many cases. In some cases excessive meat eating is associated with great irritability and sensitiveness of the brain and nervous system. The change of diet is followed by a great improvement of mental activity. It would appear from a study of many cases that so far no general rule can be found, and each case must be studied from the facts of its history. Thus, in some cases, a meat diet is literally poisonous, and its removal is the first essential for a cure. Again, a grain or fruit diet is clearly injurious, and more rapid recovery follows a change. In all cases states of starvation and anti-intoxications exist, the removal of which are of equal importance to that of spirits. The study of the diet brings out many unsuspected causes, which require removal and treatment before a cure can be effected.

The mortality is strikingly low among brewers in early years. Up to the age of forty, or thereabouts, brewers seem to be about as good risks as any one else. After that age the mortality rises high, and at fifty or sixty about three brewers may be expected to die where one other person dies.

MORAL PALSY.

It is asserted that four per cent. of all persons are born without any moral conception of right and wrong. The moral sense is congenitally absent, and no matter what the surroundings or training may be, this faculty is wanting.

From education and surroundings it may seem to be present, and such persons may pass a long life without markedly showing this defect. It would seem that this faculty might be cultivated, and the constant exercise of the higher moral brain would develop in some degree this part of the brain. Yet, experience shows that it is never changed. Cultivation and exercise only conceals, and gives a superficial gloss and facility to cover up this defect. Many persons pass through life, as strange eccentrics, without this malformation being discovered.

Fully ninety per cent. of all inebriates suffer from palsy and derangement of this moral faculty. In a large per cent. it is congenital from inebriate and insane parents, in others it is acquired. In all cases this faculty is the first to suffer, and the one which becomes most seriously injured. Injury to all the organs and faculties may be removed, and a degree of restoration follow. But this faculty is never restored when once paralyzed by poisons. It is claimed that wine and beer drinkers in so-called moderation, have a weakened and low grade moral sense. A study of this faculty brings out the disease element clearly in most cases.

DRUNKEN BUMBLEBEES.

The latest contribution to the personal habits of animals has just been made by M. J. Lloyd Williams, and, curiously enough, it deals with the "drunken habits" of certain bumblebees. He shows that these insects, in frequenting the crowded flowers of some of the composites, as *carduus* and *centaurea*, and of a species of *scabiosa*, become infected with their

honey to a state of intoxication; and that they give expression to this intoxication by rolling on the back, striking the legs wildly in the air and general helplessness. The bees rapidly recover from these effects, but, strange though it may appear, they eagerly renew the debauch. One individual, however, as Mr. Williams informs us, manifested the next morning a praiseworthy remorse and disgust, "raising its head and fore-legs as high as it could above the plants, then precipitately hurrying away as soon as released." The most dissolute species was a neuter bee of the species *bombus lapidarius*.

TREATMENT OF DRUNKARDS.

The Rev. Dr. Strong, Melbourne, told the Royal Commission on Old Age Pensions that "Drunkenness should be made a crime, and habitual drunkards should be locked up"; not merely for a night that they may be brought before the magistrates in the morning, and let off with five-shillings fine, but that they should be treated as lunatics and shut up until they are cured.

The American Medical Temperance Association has one hundred and fifty members. The German Medical Temperance Association has one hundred and eighty members, and the British Medical Temperance Association has over three hundred members, and nearly a hundred associate members.

These three societies are alike in purpose and plan of organization, and have among their members some of the leading medical men of the world.

Several prominent insurance companies refuse to consider an application from a "graduate" of a Keeley-Cure, no matter how good a risk otherwise the man may seem, or how little of an inebriate he may have been. The reason given is that persons who have undergone this "treatment" are prone to premature death, due, supposedly to the severe drugs used.

Clinical Notes and Comments.

CLINICAL NOTES ON LACTOPHENIN.

By A. H. ROLER, M.D.,

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Although one of the newer products of the laboratory, lactophenin has taken its place as one of the foremost in efficiency as an analgesic, an antipyretic and a sedative; it is now a well-established fact that it is practically devoid of many of the drawbacks which some of the other drugs, used for the same purposes, have, but which, in all other respects, are equally valuable and useful. Some of the after-effects resulting from such drugs, such as depression of the heart, increase of respiration, etc., we do not find following the use of this remedy. By virtue of its use not being followed by ill effects on account of its harmless nature, yet at the same time being very potent, we find it a very convenient and safe article for use in many distressing ailments, such as migraine, insomnia, la grippe, etc. It has been used with repeated good results in more serious troubles, such as typhoid fever, suppurative tonsillitis, and even in septicemia; in fact, its use seems almost unlimited. Its action is similar to that of phenacetine, not, however, so rapid, at the same time being more of a sedative. It has been used with marked success in typhoid fever, scarlatina, acute tuberculosis, measles, and many other ailments. On account of its harmless nature it especially recommends itself in diseases of children, doses of 3 to 6 grains being given with impunity, and almost invariably with the desired result.

For the purpose of testing its value I have used it in a series of cases of different troubles, and append a report of a few of the more prominent ones.

Case 1.— Mrs. A. T., age 32, married, has been a sufferer from periodic attacks of migraine for ten years. Has taken morphine, but is afraid of contracting the habit, consequently she has tried almost every available remedy, without obtaining relief. She was given lactophenin in 5-grain doses every 2 hours, and reports that the relief obtained was such as she had not before experienced. She had no ill after-effects such as formerly appeared, especially on taking morphine.

Case 2.— R. S., age 28, by occupation a bookkeeper. Has been troubled for a number of months with severe intermittent headaches. He was advised to see an oculist, who fitted him with glasses, and these in a measure gave him relief. As he still continued to have some trouble he was given 5-grain powders of lactophenin to be taken 2 hours apart. He says he almost never has to take the second dose.

Case 3.— One of suppurative tonsilitis in a girl, Mary S., age 18. The trouble had been present for 10 days, the pain being so very intense as to cause her to cry out. She was given 10-grain doses of lactophenin, to be repeated every 4 hours. On the morning of the second day her temperature, which had been on the day previous up to 103, was reduced to 99.2°, and she was able to partake of soft diet, which she had not done for two days previous.

Case 4.— Another case of quinsy in a young boy of 12. The result was equally gratifying, the fever and pain subsiding within 12 hours. He had repeated attacks of the trouble, and his mother says he has had quicker relief at this time than at any other time.

Case 5.— John P., age 35, had all the symptoms of la grippe, headache, backache, fever, congestion of the conjunctivae and restlessness. As he expressed it, "felt as if pounded with a club." He was placed upon lactophenin in doses of 10 grains every 3 hours. In 12 hours he was perspiring very freely and the fever was reduced 3 degrees. During the day following the beginning of treatment he felt able to attend to his work. The dose was now reduced to 5 grains every

4 hours. The temperature did not rise above 100°, and the feeling of soreness entirely disappeared. He was able to be about on the 4th day.

Case 6.—Minnie C., age 18, has had pain of a more or less distressing character one day previous to the beginning of her menstrual flow. On various occasions she has been obliged to go to bed. Two 5-grain powders two hours apart relieved her greatly, something she has not been able to obtain before except with morphine.

The above cases would seem hardly sufficient to form a basis of opinion, but in 30 cases, of which these are a part, the results have been equally good. In only two cases was there unsatisfactory results. One of these was a habitual morphine user. In view of this fact it is not unfair to assume that lactophenin is useful, and that in it we have a safe and efficient drug.

In a well written brochure on *Alcoholism*, Dr. J. I. Fellows groups some very interesting facts concerning inebriety and crime, insanity, dipsomania asylums, state control, disease, predisposing and psychic influences, together with other influences. In the therapeutics he points out the special value of Fellows' Syrup of Hypophosphites as being of great use in correcting the cardiac and cerebral deficiencies which are at the root of the desire for alcohol. He points out clearly that in many cases disorders of the digestive organs, with inactivity of the liver, and general anæmia, also nervous prostration, are primary conditions of inebriety, which the hypophosphites effectively removes. The following sentence we heartily commend: "There is no more useful medicine than Fellows' Hypophosphites to assist in recovery from the weakness consequent upon recent illness." To this we add that the degeneration from alcohol is removed more quickly by this drug than by other means.

AN ANTIDOTE TO THE TWO GREAT SYMPTOMS.

The value of Antikamnia consists in its rapid effect in alleviating the suffering of the patient while more radical treatment is working a cure. While endeavoring to rid our patient of his neuralgia, rheumatism, typhoid, intermittent, or malarial fever, we secure him relief from pain and intermission of fever. We have, in short, in this drug not a remedy for any disease, but a most useful antidote to the two great symptoms — Pain and Pyrexia.— *Medical Reprints*, London, Eng.

The *Gallard's Medical Journal* for September contains the following: Dr. Theo. W. Peers of Topeka, Kan., says: I desire to report two cases in which I used Papine with very gratifying results. The first case was that of a man suffering with a non-operable case of epithelioma of the left side of the face. He had been operated on by a surgeon here, but on recurrence of the disease went to a "cancer doctor," who used a paste which "burnt" out a large amount of tissue, and started up a very rapid growth of the tumor.

When he came into my hands, in October, 1895, the disease was so extensive that to make him comfortable was all I could hope for. Morphine, cocaine, and codein were tried, but with such distressing after-effects that they had to be abandoned. I then began using Papine, and two to four doses a day of a teaspoonful each kept him comfortable, with absolutely no unpleasant after-effects and with no increase in the amount given per day. The rapidity of the growth was decreased so that he lived until June, 1896, whereas, when I first saw him I did not think he could live three months.

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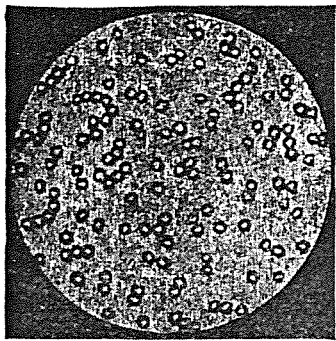
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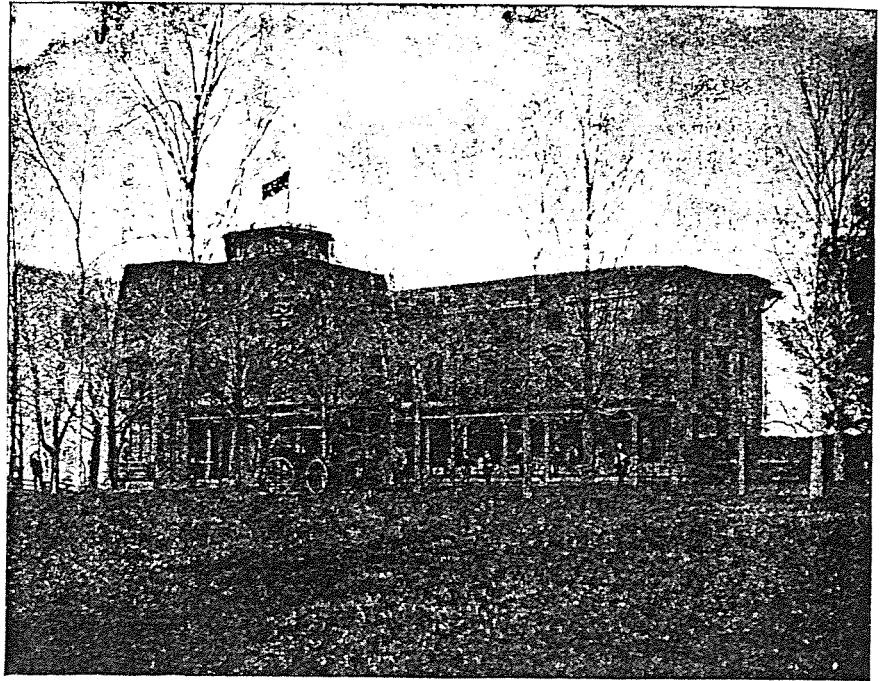
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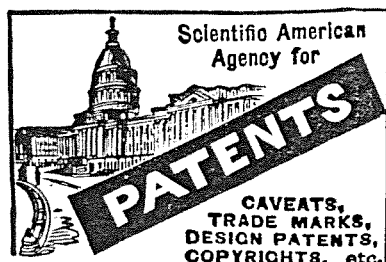
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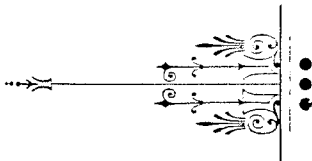
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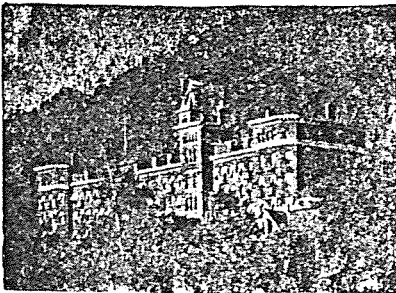
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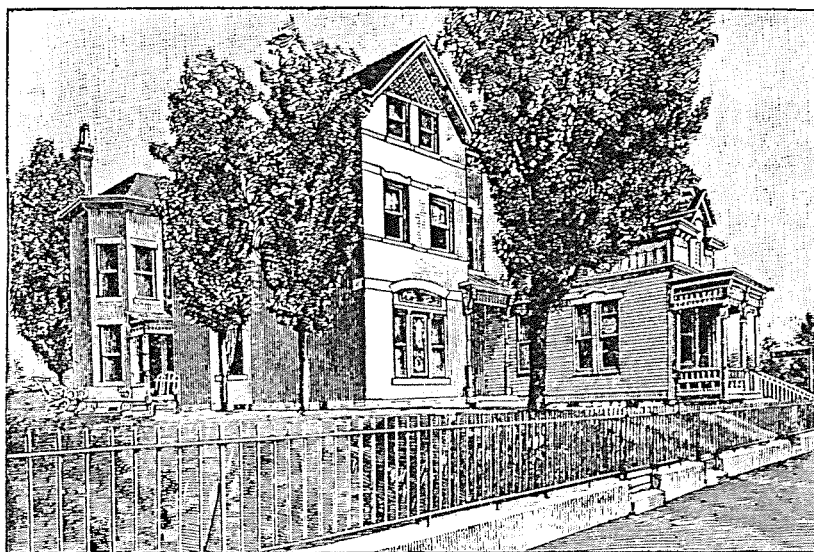
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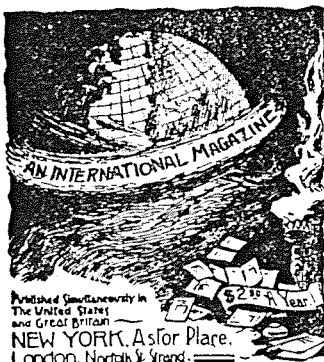
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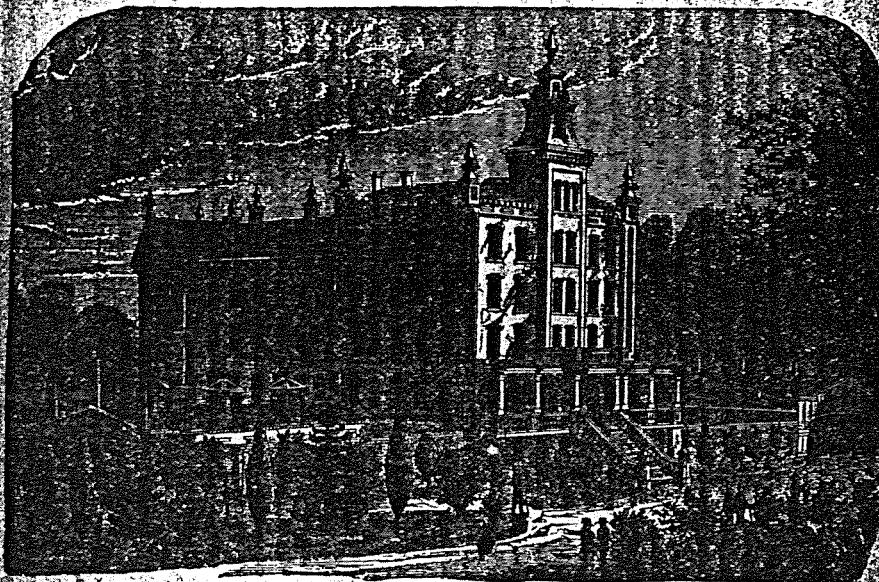
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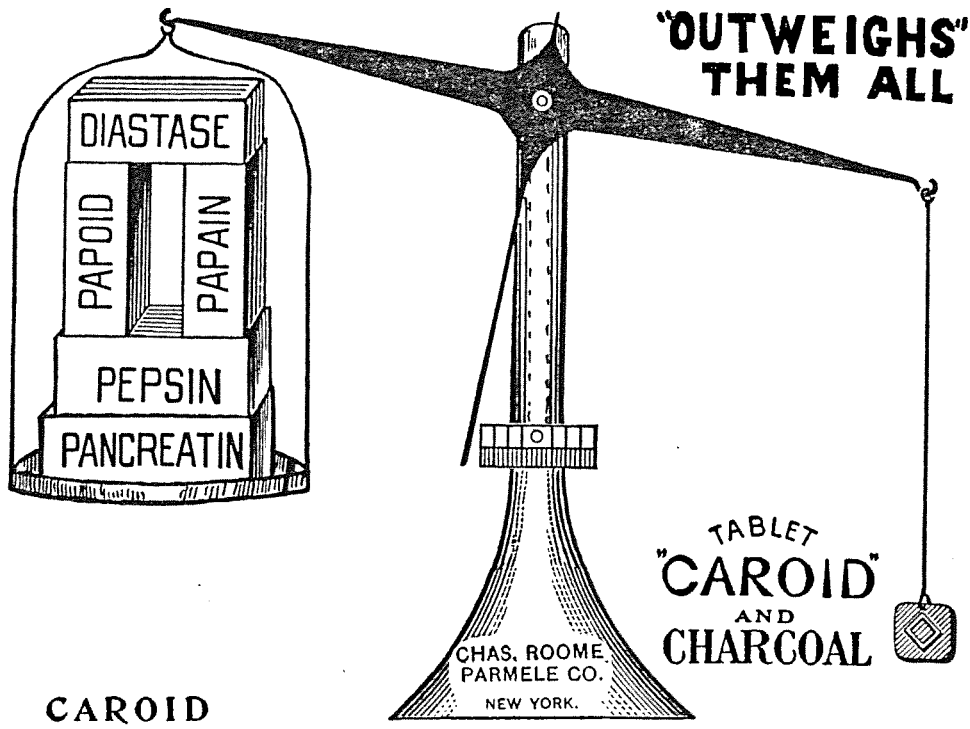
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