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LAMBERT PHARMACAL CO., ST. LOUIS.

THE
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Vol. XXI.

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

THE PAUPER INEBRIATE — HIS LEGAL STATUS
— CARE AND CONTROL.*

BY DR. L. D. MASON, Brooklyn, N. Y.

*President of the "American Association for the Study and Cure of Inebriety," etc.,
etc., etc.*

A certain proportion of the population of towns and cities is composed of what are called the "criminal classes," those that require the constant care and espionage of the police and the adjudication of justice.

Intermingled with these in no small proportion is the pauper inebriate — friendless, homeless, appearing in various rôles on the public stage as drunkard, tramp, or vagrant, many times entered on the blotter of the police station as an "habitual drunkard" or "rounder," entering the various hospitals or dispensaries with disease or injury incident to his habits, and finally we find him in the wards of the charity hospital or among the chronic insane of the insane asylum — if perchance sudden death from natural causes or suicide does not intervene — and whether his career terminates in the street.

*Read before "The Seventh International Congress against the abuse of alcohol," held in Paris, France, April, 1899.

or in the alcoholic wards of the hospital, or in the insane asylum, or the cell of the police station, the trench in "Potter's Field" receives him, and thus the story ends.

During the year ending Sept. 30, 1898, the two principal boroughs of the city of New York, Manhattan and Brooklyn, with a population of 3,545,899, recorded the total number of arrests for all causes as 144,810, or nearly 150,000: of this number, 53,843, or over one-third, were arrested for intoxication, or as "drunk and disorderly." Many of those arrested were known to the police as habitual drunkards or periodical users of alcoholic stimulants, and that to excess.

While we may except a certain proportion of cases as occasional or accidental intoxication occurring in persons as a rule temperate, it would be no risk to assume that the larger proportion of those arrested were as stated, habitual or periodical inebriates. We must avoid the error too prevalent of confounding cases with individuals. Permit me to quote at length from the annual report for 1877 of the president of the Inebriates' Home for Kings County to the Legislature of the State of New York:

In the annual report for 1877 of the President of the Inebriates' Home for Kings County, to the Legislature of the State of New York, Dr. T. L. Mason thus writes, under the caption, "Cases vs. Individuals":

"It will be observed that in the presentation of our annual reports we have invariably drawn a distinction between the aggregate number of 'cases' treated in the institution and that of the individuals who go to make up these 'cases.'

"This may be said to be a new departure, for it is the almost universal custom in the presentation of such reports by public and private corporations to speak of the number of 'cases' treated, leaving out of sight altogether the number of persons subjected to such treatment.

"In some respects this last-named plan of presenting an annual report may appear to be necessary. For example, if

ten individuals be the recipients of relief at the hands of some charitable institution on ten different occasions, those ten individuals swell up the record of 'cases' treated to one hundred. The very able and exhaustive report of the police and excise commissioners of the city of Brooklyn for the year 1876 fully illustrates the necessity for such a distinction, to a clear understanding of the valuable statistics presented.

"We do not quote from this admirably arranged exhibit of the work of the police and excise department, which, it may be remarked, in passing, bears evidence of careful compilation and abounds in comparative tables of criminal statistics of considerable interest to the thoughtful citizen and philanthropist, in any spirit of hostile criticism, but as merely illustrating the point we desire to make in the presentation of our yearly record to your honorable body.

"It appears that during the year 1876 there were 1,463 arrests for vagrancy in the city of Brooklyn, 9,680 arrests for drunkenness, and that in 4,851 of these cases the accused were registered as having no occupation.

"It would also appear that in the previous year, 1875, 55,567 lodgings were provided for homeless wanderers at the various station houses through the city.

"If we accept the cases of vagrancy, there is no record of the number of individuals which goes to make up this astounding number of arrests and of free lodgings provided in a single year.

"On referring to the tables of the occupations of those arrested, we find the actual number of individual vagrants taken into custody during the year to be 215; *but these 215 turned up in court on 1,463 different occasions*, occupied the time of the guardians of the peace to a considerable extent, in and out of court, necessitated 1,463 trials before a police magistrate, made the same number of trips to the jail in a public conveyance and at the public expense, entailed the payment of turnkey's fees from the county treasury in every case, and, finally,

boarded at the county's expense for terms ranging from ten to twenty-nine days each.

“These are the chronic vagrant drunkards of our community; and this perpetual record of arrests and re-arrests has been going on from ten to fourteen years, while some of these jailbirds could not, if questioned, compute with anything like accuracy the number of their re-arrests and recommitments during the long years in which the prison has taken for them the place of home. Thus we see at a glance how important it is to rid the community of even a modicum of those whom jail officials aptly, if inelegantly, term ‘rounders’ and ‘repeaters,’ even from an economical standpoint; not to speak of the moral aspect of the question or to dwell upon the value of reformation in a single case. This class largely helps to increase the burden of the taxpayers, and its decrease is a matter of grave importance.

“The number of individuals arrested for drunkenness probably bears a less proportion to the number of recorded arrests for this offense than does the number of individual vagrants taken into custody to the number of recorded vagrancy ‘cases.’ *If the exact number of drunkards arrested during the year could be sifted out, rejecting aliases and coming down to individuals, it would be probably found that the actual total would fall short of one thousand, though 9,680 arrests for drunkenness were reported during the year.*

“The same reasoning on the score of economy alone applies in the case of the chronic drunkard even more forcibly than it does in the case of the constitutional vagrant; for the latter, as a rule, has only himself to provide for, while our criminal statistics show that the large majority of drunkards have others depending on them who are more than likely to become a burthen on the community.

“The rescue of one such inebriate has a social significance, independent of morals altogether, which the casual observer is not apt to realize or take into account in estimating the value of the work of our purely reformatory institutions.

“ One more point under this head. It is stated that 55,567 persons were accommodated with lodgings at the station-houses during the year 1875. We find that the population of the city, according to the census, was in that year 484,616. On the supposition that each of the 55,567 lodgers had a distinct individuality, it would follow that for every eight and three-quarters persons in the city of Brooklyn one slept in a station-house one night during the year.

“ If we add to these 55,567 lodgers the 26,669 arrests by the police during the same year, and then proceed to figure up the tens of thousands of cases which have been cared for by our charity commissioners, by private charitable associations, at dispensaries, and in hospitals, orphan asylums, homes, and the whole family of charitable institutions, we find that, according to this mode of reasoning, Brooklyn was in that year one vast poorhouse and prison, and that we were all paupers and criminals living at the public expense.

“ This *reductio ad absurdum* is the natural result of the prevailing tendency on the part of the commissioners and directors of public and private institutions in making their reports to place in the boldest relief the full extent of the work accomplished, and in the pursuit of this object to confound ‘cases’ with ‘individuals.’

“ Taxpayers and private benefactors have a right to the fullest and most definite information under this head; and we believe that the community can be helped to a clearer understanding of the work of all our public institutions by a plain statement of the number of persons treated, the duration of the different terms in them, and by giving a separate record of the number of re-admissions. And we prefer to do this, even at the risk of lacking in our report the amazing array of figures with which the community is frequently startled.”

The superintendent of the Inebriates' Home for Kings County, Brooklyn, N. Y., in his report for 1881, thus writes in confirmation of the statements already made:—

“ The annual arrests for drunkenness in the city of Brooklyn range from nine to ten thousand, but I dare venture to say that they never include one thousand distinct persons arrested during any given year. With few exceptions, they are the same unfortunate victims of rum who have been arrested and rearrested every few weeks, many of whom could not begin to compute the number of times they have been committed to prison. I have met with some of this unfortunate class who have kept count in some cases up to fifty, sixty, seventy, eighty, ninety, and one hundred times, and then given up the record.

“ Ten thousand annual arrests represent ten thousand instances (or more, for in many cases the work cannot be performed single-handed), where the arresting policemen are called off their beats most frequently during the night; ten thousand registrations of charges at the police stations; ten thousand attendances of arresting officers at the police courts on the following day to give evidence, and, in addition, the enormous cost to the county for maintenance in jail of those who are convicted.

“ On each succeeding recommitment of the vagrant drunkard to the jail, the daily charge for his subsistence goes to swell up the sheriff's board bill, the profits on which in some counties may be safely estimated at more than one hundred per cent. Thus the vagrant drunkard is practically reduced to a mere chattel, the legally recognized stock in trade of the police force and his jailors.

“ On the other hand, by reducing these ten thousand arrests to the number of individuals actually arrested, and disposing of the vagrant drunkards for three years, we would not only benefit and probably reform at least from thirty to forty per cent. of their number, — which should be the first great object, — but we would at the same time relieve the police force, police stations, and police courts of four-fifths of their onerous duties in this direction.”

The English testimony as to the relation which alcohol

bears to the so-called criminal classes is very conclusive. In the testimony of chief constables and superintendent of police taken before "the Committee on Intemperance for the Convocation of York," in 1874, in reply to the question —

"What proportion of those who have come under your cognizance as criminals have been the victims of drinking habits and associates?"

The testimony was that of a large number of chief constables, superintendents of police, governors of gaols, and chaplains, and all testified that in at least two-thirds of all the arrests made by the police the persons were addicted to the use of alcohol, and that a large proportion of these were intoxicated when arrested. If we were to consult the police and criminal records of our large cities in America we might not equal, but we should certainly approximate, such testimony as that given before the "Convocation" at York.

We cannot shut our eyes to the fact that in every city or town a certain proportion of the population are more or less continually under the influence of alcohol, and that to a degree often dangerous to the community at large. Intoxication with or without overt criminal acts continually occurs, rendering it necessary — indeed, imperative — that this class should be arrested and controlled. So much for the "social status" of the pauper inebriate. He is a conspicuous member of the floating population of all large cities, and a marked example of that specimen of the "*genus homo*" known as tramp. He has come to stay. He belongs to a class which society must recognize and control. To a certain extent the "legal status" of the so-called "habitual drunkard" has been dealt with from time immemorial, and legal statutes and enactments concerning him are almost as old as the history of alcohol itself. But we can only allude by reference to the law as it affects the inebriate in the United States of America and in England and her colonies. The limits of this paper will permit me only to refer to the more important

articles on this subject. As to the American law, we desire to call attention, because of their conciseness and complete consideration of the subject, to the writings of Clark Bell, Esq., president of "*The Medico-Legal Society*" of New York city, more especially those papers published under the auspices of "*The American Association for the Study and Cure of Inebriety*" in a volume entitled "*Disease of Inebriety.*" The captions to these articles are as follows: "*Medico-legal Questions — Law and Rulings of Judges,*" and an appendix to same volume; "*Drunkenness a Defense,*" also an article in same treatise by Dr. T. D. Crothers entitled "*Some Forms of Irresponsibility — Alcoholic Trance.*" We also desire to refer to the writings of Dr. Norman Kerr of London, England, in his work entitled "*Inebriety,*" especially that portion in which the legal status of the inebriate, as affected by the laws of England and her colonies, or elsewhere — laws which apply to the restraint, maintenance, and control of the inebriate. All legislation affecting the inebriate is based on the same principles as are those laws enacted for the care and safe-keeping of the insane. That is, the fact of their irresponsibility for their actions, and, therefore, the necessity of restraint for their own good and that of others. As to the irresponsibility of the inebriate, the observation of Dr. Crothers clearly demonstrates that absence of consciousness of the act was not uncommon in the mental state of the habitual drunkard. He was not aware that he performed the act, at the time of its commission, nor could he recall the fact that he had performed the act; that practically, as far as memory was concerned, his condition was that of complete amnesia, that such a deed was unpremeditated, and therefore motiveless — performed automatically without consciousness of its gravity or importance, and, of course, never recorded, and therefore never recalled — an act in which cerebration or actual thought took no part, the man in its performance being a mere automaton or machine. In an article published in 1892, entitled "*The Ab-*

sence of Reasonable Motive in the so-called Criminal Acts of the Confirmed Inebriate," we endeavored to demonstrate this irresponsible condition in which the chronic or periodical inebriate performed his so-called "criminal acts," and cited cases in proof, and wrote as follows:

"If we can show that in the majority of cases in the acts of the confirmed inebriate there is absence of proper motive, absence of intelligent purpose, absence even of consciousness of the act in some instances, ought he not to come under the benefits of that unwritten or recorded law which excludes from penalty the insane or those of an irresponsible age, and does not hold them responsible for their acts?"

"It has been abundantly shown that amnesia, partial or complete, is the mental condition of the average confirmed inebriate. If the loss of memory is complete, he becomes a veritable automaton; his movements are mechanical, devoid of thought or reason, and he is therefore unconscious of his acts; under this condition what he does may be ridiculous or even dangerous. His actions are similar to those of a somnambulist who, walking in his sleep, performs deeds of which he is totally unconscious when awakened. The acts of the confirmed inebriate are thus often performed unconsciously, and when he comes out of this "trance state," so-called, or condition of cerebral automatism, he has not any knowledge of what he has done, and yet oftentimes there is a seemingly rational action on his part, and his condition may not be detected because not suspected by those with whom he is brought in contact; while in this condition the inebriate may commit acts that are criminal.

"*Mendacity* has been set down as one of the prominent characteristics of the inebriate, but I am convinced that the denial of the inebriate of the statements he has previously made or the acts he has done, when confronted with them, is often due to his utter unconsciousness of ever having made such statements or performed such acts.

“The ‘*testamentary capacity*’ of a confirmed inebriate should be excluded on this ground, and no ‘confirmed inebriate’ should be *empaneled in any jury*, nor should his *testimony as a witness* be received in any court.

“The *validity of the signatures* of confirmed inebriates to wills, contracts, or affidavits should always be questioned if allowed, and ‘marriage’ contracted under these conditions should be annulled.

“Not only in the trance state, where consciousness seems to be annulled and the memory temporarily abolished, may the inebriate perform acts that he is totally unconscious of, as a somnambulist or automaton, and thus render himself liable to criminal procedure, or the subject of fraud on the part of others, but there is under this condition a tendency to repeat the crime or act he may have been previously guilty of, a *monomania*, so to speak, for a special act.

“Dr. Alex. Peddie of Edinburg reports the following cases:

“At the prison of Perth, one woman was committed 137 times for being drunk; *her invariable practice was to smash windows*. A man when drunk stole nothing but bibles. Another stole nothing but shawls; another shoes. Another was transported for stealing tubs on seven different occasions; with one exception he was always guilty of tub-stealing. Others have been repeatedly convicted of horse-stealing.

“In others the *destructive tendency* is marked by unusual prodigality and waste, such as scattering money in the street, or throwing it in the fire. Such persons are notorious for ‘cleaning out’ a saloon, smashing, breaking, and throwing out on the street articles of furniture, etc. There is not any ‘reason in the madness’ of these temporarily insane inebriates. Their actions are motiveless. The whole machinery of the will is out of order, the power of co-ordination of the faculties is lost, hence all acts are erratic.

“In addition to the ‘trance state’ and ‘monomaniacal acts’

of the confirmed inebriate, there is another condition under which the inebriate may perpetrate higher grades of crime. We refer to that condition where the prominent characteristic of the insanity of the inebriate is the *monomania of suspicion* or *persecution*, a condition not uncommon in the confirmed inebriate. Under this condition the inebriate is morose, taciturn, secretive; if he communicates his suspicions to anyone, it is only occasionally and with great reservation. He imagines that enemies are trying to poison him; he hears voices in the air; he is followed, and in danger of being waylaid, or his wife is unfaithful to him; suspicion of 'marital infidelity' is very common in these cases. Robbery, mutilation, murder, and every possible misfortune that may happen to a person, are imagined by these insane inebriates as being applied to their case.

"Acting under erroneous suppositions, such persons prepare themselves for the imaginary danger, or assault those who they believe would injure them, or take vengeance on the innocent wife whom they judge guilty of marital infidelity. Oftentimes their mental condition is not suspected, and oftentimes only after they have wreaked their insane fury on those about them.

"And just here, in parenthesis, we would remark that though the acts of the *confirmed inebriate* may fill every grade of crime, from petty theft to homicide, yet those criminal acts which call for shrewdness, mechanical skill, involving as they do the maturing of long-continued plans, well laid and aptly executed, as professional burglary, systematic forgery, etc., the confirmed inebriate is incapable of.

"The burglar and the systematic forger may drink liquor, but they have the fullest exercise of their mental faculties, and the ability to use liquor moderately, so that their hand is steady, their nerves unflinching, and their reason unclouded. This is the universal testimony of the governors or wardens of penitentiaries and prisons in America and Great Britain,

and hence the great distinction between the so-called 'criminal inebriate' over the professional criminal. The confirmed inebriate acts without motive, without the deliberation, without that usual caution and concealment that characterize the criminal who is in a normal mental and physical condition.

"The popular impression seems to be, testifies Mr. John C. Salter, the warden of the State penitentiary at Chester, Illinois, that a criminal is necessarily a drunkard.

"The large proportion of criminals, such as burglars, forgers, and counterfeiters, need clear brains, steady nerves, quick perceptions, to carry out their plans, which would be impossible under the influence of intoxicating drink.'

"The assassin may drink to nerve himself for the deed, but only to that extent, and no more. The alcohol does not prompt the deed; it is deliberately taken to enable them to perform it — a condition quite the reverse of the insane inebriate or the person suffering from 'chronic alcoholic mania,' in which the 'mania of suspicion,' or an acute alcoholic mania is developed. Here the maniac, in his sudden fury, cyclonic in its violence and rapidity, kills those nearest to him without premeditation or motive.

"Hence the insane inebriate, the subject of the monomania of suspicion or persecution, is easily traced to the act committed by him, and his attempts at concealment, if made at all, are illy disguised. He is not an assassin striking from the shadow and then disappearing. His acts are often in the open day and the most conspicuous public places."

The opinions expressed by the authors referred to, and the laws quoted by them, as well as the views stated in the article quoted, may be taken as the "legal status" of the inebriate to-day in the English and United States courts.

But while a great advance has been made in the relation of the law to the inebriate, in regard to his irresponsibility, his testamentary capacity, and his inability to perform legally any

act based on sound judgment, mind, and memory, we might say, however, that "the law is more honored (or rather dishonored) in the breach than in the custom," that it is too often a dead letter, that it is not enforced or its spirit properly observed, that it is not applied as it should be, and not made compulsory. The necessary complaint that should put the law in operation is left largely to the choice of relatives or friends; or, if the inebriate has neither relatives nor friends, to a very inefficient and lax method of applying the law on the part of the authorities. The law should be so amended as to make it *compulsory* or *obligatory* on the part of friends or relatives, or, in case there are no kin, on the part of the local authorities, to place the inebriate under restraint. This compulsory act is not a feature of the modern law. The law should also more strictly exclude the confirmed inebriate from exercising certain legal rights, as to his testamentary capacity, his ability to sign legal documents, to manage his own affairs or those of others, or to perform any legal act or duty that belongs only to a person in reasonable possession of his faculties.

So much, then, for the consideration of "social" and "legal status" of the inebriate in general. Now let us dwell upon more particularly some special points in care and treatment of the pauper inebriate:—

First—The pauper inebriate should be recognized as a *ward of the state*, and his control, care, and maintenance should be provided for by the state.

Second—The inebriate should be isolated and treated as a *distinct and separate class*, in the same manner that the insane and criminals are so separated and classified. To place an inebriate in an insane asylum in his weak mental state, already frequently bordering upon insanity, and subject him to the sights and sounds of a lunatic asylum, would be to precipitate him into a state of insanity. To place the inebriate in the jail or penitentiary would be to fix upon him unjustly the indelible stain of criminal.

“The penitentiary or the jail are neither the proper place for the reformation of the habitual drunkard.”

“Surrounded by demoralizing influences of a prison the work of reformation of the habitual drunkard becomes most difficult, be the superintendent of a purely penal institution ever so able or ever so well inclined.”

The inebriate should not be included with the criminal class unless his inebriety is associated with criminal acts, and then only on the same basis that the criminal insane are so classified and incarcerated, for he has become then, in the large majority of cases, practically insane. At present about one-third of the inmates of the Kings County Penitentiary, Brooklyn, N. Y., are under commitment for “habitual drunkenness,” independent of any crime. The state insane asylums also contain a certain class of inebriates or dipsomaniacs, those suffering from or convalescing from attacks of acute alcoholic delirium, or who are the subjects of alcoholic dementia; a certain proportion of these would be proper subjects for a “State Hospital for Dipsomaniacs and Inebriates.”

In other words, the congested and overcrowded condition of our penal and charitable institutions would not only be greatly relieved, but the dipsomaniacs and inebriates would be placed under a system that offers a reasonable chance, at least, of recovery from their lamentable condition, which is exceptionable, if not impossible, under present conditions.

For a state to properly provide for the care of the pauper inebriate is the exception, not the rule. When a state does not so provide for the special care and treatment of the pauper inebriate as a class, these are then scattered at random through various charitable or penal municipal or county institutions. At present the only institution at all representative (at least, in the Eastern states) that cares for the pauper chronic inebriate as a ward of the state, is the “Massachusetts State Hospital for Dipsomaniacs and Inebriates,” situated at Foxborough, near Boston, Mass.

While private or semi-public institutions for the care of inebriates, or those affected with kindred drug habits, are quite numerous, as far as we know an institution solely supported by state aid is limited to the above instance. This ought not to be so. Every state, every great center of population, ought to have its inebriate asylum, sustained by the state, on the same basis on which the state lunatic asylums are established and sustained.

At present the law, as administered by the municipality in dealing with the inebriate, is faulty and only partial in its effect upon him. "It practically does this: it arrests him, fines and imprisons him for a short period — too short for any benefit to be derived from it," and then lets him go. "The law as administered is like an incompetent physician: it first makes a wrong diagnosis and then prescribes an inert, and therefore inefficient, remedy." It reprimands the inebriate, — it does not treat his case at all, — it looks upon the inebriate as an individual who has the knowledge of right and wrong and full power of volition. It practically regards the act of inebriation as deliberate and voluntary, and therefore proceeds by fines and short periods of imprisonment to lash back into moral decency and rectitude the offender!

Recognizing that the imperative necessity of the state assuming the care of the pauper inebriate as a distinct class, isolating from all other classes which are the wards of the state, and providing a proper place for his distinctive care and treatment, we naturally would consider —

Third — The necessity for "*long term commitments.*"

And at this point let me again quote at length from the same annual report already referred to, in which the writer, deprecating the short term commitments for inebriates, asserts the necessity for long terms of commitments, as follows:

"NECESSITY FOR LONG TERMS.

"A great deal has recently been written and said concerning the expediency of utilizing the chronic drunkard by es-

tablishing workshops in connection with our prisons, in which he may be able to contribute something toward his own support while in custody, and even to lay up a little capital to start with when released at the expiration of his term.

“ The experience of those thoroughly acquainted with the management of penal institutions is that it is utterly impossible to utilize the drunkard who is constantly being recommitted to the jail or the penitentiary unless, after repeated offenses, he be committed for a term of years. On this important subject we cannot do better than to quote from an annual report of General Amos Pilsbury, the late warden of the Albany penitentiary, and father of the present superintendent of state prisons — a gentleman who is acknowledged to have been one of the best prison officials we have had in this country, and who has been ably succeeded by his son, Captain Louis D. Pilsbury. In speaking of this subject he says :

“ ‘ It is for the law-giver to determine whether imprisonment in the penitentiary is the best mode of punishment for intoxication in any case; but if it is designed to have any effect in curing the vice of intemperance, a term of six months should be imposed in all cases of second or further convictions.

“ ‘ The truth is that nothing short of a direct interposition of Divine power can perform the miracle of suddenly converting and turning men from the error of their ways. Human agencies can only hope to accomplish the work of reform by retaining the subject under their operation until the power of old evil habits shall have been weakened by disuse, and new and good habits of sobriety and industry shall have been firmly acquired.’

“ In a recent report of the Board of State Prison Inspectors we find the following language on this subject :

“ ‘ For the large class of convicts having sixty or less days to serve, the superintendent can obtain little or no remunerative employment, so much time being required in these cases for the necessary instruction as to leave an employer small

prospect of a compensating gain. It follows, as your honorable body will readily perceive, that convicts of this class not only fail to indemnify the penitentiary against the cost of their own support, but become, for the most part, a constant drain upon the productive labor.

“ ‘ But it must be remembered, moreover, that many of those short-time men are committed to the penitentiary during the year over and over again, deriving themselves nothing whatever from the transient suspensions of their liberty, while inflicting upon the resources of the institution a steadily growing pecuniary loss.

“ ‘ Besides, this class of subjects makes heavy demands on the time and the attention of our physician, and converts our hospital in too many cases into a place of recovery from attacks of delirium tremens or other consequences of habitual intemperance and evil habits.’

“ ‘ In a comparatively recent address of the English ‘ Howard Association,’ on the treatment and prevention of crime, they say that the system of repeated short sentences ‘ is intolerable.’ They continue:

“ ‘ Repeated sentences of fortnight upon fortnight, and month upon month, add to the difficulties of prison management, and greatly demoralize the delinquents and their companions as a class.

“ ‘ Where a single short sentence fails to deter, it is a proof that public morality and economy alike require the infliction of a longer reformatory discipline, protracted until criminal habits are effectually subdued.’

“ ‘ An eminent authority has recently remarked that ‘ magistrates who repeatedly pass demoralizing short sentences are themselves promoters of crime’; that, to accomplish reformation effectually, long sentences must be inflicted after repeated convictions.

“ ‘ A sentence for a long term, say *two or three years*, after repeated transgressions, to a proper institution, would, in all

probability, not only accomplish the complete reformation of the inebriate, but would enable the officials to make him contribute to his own support by the establishment of workshops; while a law investing the directors of the institution with power to exercise their discretion in the granting of leave of absence in certain cases would undoubtedly have a salutary effect."

These statements present the value of "long term commitments." There is not anything to add, except to emphasize the suggestion that "a law investing the directors of the institution with discretionary power to grant a 'ticket of leave' or a system of 'parole,'" advantageously adopted and now in operation in the management of the insane asylums of this country; also, we would add, that the value of "accumulative sentences" be recognized in repeated or "incurable" cases; also a system of rewards, and the milder forms of punishment, such as the deprivation of privileges, all of which might be instituted as part of the discipline of such state institutions for the care and treatment of dipsomaniacs and inebriates.

Fourth — As to the "*place of restraint*," its locality, surroundings, discipline, occupation of inmates, as well as the consideration of their prospective condition when finally discharged from the care of the institution, let me again quote from the superintendent's report already alluded to on this point:

"For these inebriate prison-birds I would purchase either a large farm or tract of waste land and erect inexpensive buildings thereon, and make the place a strictly remedial and reformatory institution. Let each commitment be for a term of not less than three years, modified by authorizing the managers to grant 'tickets of leave' for the purpose of practically testing the moral and physical condition of apparently hopeful patients — always making subject to rearrest if they return to their former drinking habits. When committed to the reformatory, the first requirement is repose and hospital treat-

ment, including an abundant supply of nourishing food, in each case to be regulated by the physician in charge. When built up those who are physically competent should be trained to field labor, and the weak and debilitated should be taught to work at some light trade, with a view to preparing them to earn a living when their time expires.

“Practically, it is very difficult, indeed, almost impossible, for bookkeepers, clerks, and others who have formerly held responsible situations, to regain the confidence of their late employers; on the other hand, when builders, cabinet-makers, tailors, etc., require the help of additional mechanics, good workmen are asked few, if any, questions, as all that is required is the performance of a day’s work for a day’s wages. I would compel this class of men to learn a suitable trade, and then aid them to find employment, so as to have work to go to when leaving the reformatory.”

“This, in brief, is a description of what such an institution for the care and treatment of pauper dipsomaniacs and inebriates, under state or municipal control, would require. The plan embodies a farm colony, or a large farm of one hundred acres or more, inexpensive buildings (the barrack system of one-story elevation would be best), to each building assigning its particular purpose, as dormitory, dining-hall, recreation or reading-room, hospital, culinary department, bathhouse, etc., as well as buildings for the various industries that shall form the occupation of the inmates in part, and teach them a useful trade. The grounds should be of sufficient acreage to occupy those of the inmates physically able and train them in farm labor. This outdoor work would prove of great benefit physically, as well as mentally, to the inmates, and remunerative to the institution. It has been found that under this outdoor treatment the chronic insane make marked improvement, and sub-acute cases are cured or greatly benefited. The instruction of the inmates in a trade would do much to enable them eventually to secure positions and enable them to sup-

port themselves and prevent an unfortunate relapse, even in hopeful cases, if discouragement should follow their failure to obtain work or to earn their own livelihood.

In such an institution the inmates should be classified or graded and separated to a certain extent. All improper cases, those afflicted with incurable nervous disease, phthisis, or insanity, etc., should be sent to the county hospital or insane asylum. To a certain extent this class of patients should be "selective," the object being to eventually reform and restore the inmate to the social position he may have formerly held, at least to make him a sober and useful member of society. The object of the institution is not to house a certain number of incurable drunkards, afflicted with chronic and incurable disease, either associated with or directly resulting from their habit. Such a course would handicap and seriously interfere with the effectual administration of such an institution, as well as destroy the object for which it was intended — the physical as well as mental restoration of the inebriate. Not a home for "*incurable cases*," suitable only for the hospital or the asylum. Furthermore, we emphatically believe that the two sexes should not be under the same institutional control; or, if this is the case necessarily, the most complete isolation, as well as the strictest discipline, should be maintained, such as is carried out in all well-regulated county or state institutions where the two sexes are conjointly treated.

The whole tenor of this paper is fully in accord with advanced scientific thought on this subject, and the highest considerations from a humane standpoint. Legislation in harmony with the suggestions contained in this paper would relieve the police force and the police justices of much extra duty, and prevent the overcrowded condition of the station-houses, jails, and penitentiaries, by largely doing away with the 'vagrant drunkard,' or, in police language, the so-called 'rounder.' Moreover, prompt and direct committal to rem-

edial and reformatory institutions for *pauper* inebriates would prevent a large proportion of the insanity of which repeated alcoholic excesses are the direct factors. I do not hesitate to assert, that well-established state institutions for the care of such inebriates would *greatly reduce the number of insane* annually treated in the various state insane asylums.

As a matter of economy, and outside of any humanitarian view of the question, it will be found cheaper in the end to treat the pauper inebriate as a *distinct class*, and adopt special methods of treatment, restraint, and occupation for his relief, than to continue in the present methods, which are expensive and ineffectual, and, therefore, extremely unsatisfactory. To this end, the *short-term imprisonment and fines* in cases of habitual drunkards must be done away with, and he must be placed under restraint for a sufficiently lengthy period of time, and surrounded by proper influences, and placed under proper treatment. In every case where the inebriate has been treated as a *special class*, under special conditions adopted for his care and control, the result of such treatment has demonstrated that in every inebriate asylum, both in the United States and abroad, where such institutions have been founded and conducted on correct principles, that from thirty to forty per cent. of those whose history is carefully followed, are reported at sufficiently lengthy periods as 'doing well and abstinent.' Improved methods of dealing with the pauper inebriate will give improved results, and a larger and more gratifying percentage of cures will be effected. But, looking at the pauper inebriate in the worst possible light, and even granting that he is incurable in a certain proportion of cases, nevertheless he still comes under municipal, county, or state care, as much as the chronic or incurable insane, and, when we come down to facts and figures, the economy of his care under proper conditions is no less apparent.

It is estimated that in England one in every one thousand persons are arrested for drunkenness and fined and imprisoned.

THE PREVALENCE OF ALCOHOLISM AND ITS
INFLUENCE ON MORTALITY.*

BY GEORGE W. WEBSTER, M.D., Chicago.

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That the theme which has been assigned to me is not without interest to the medical man, and that it is recognized as one which in no small degree concerns the welfare of the human race, is shown by the fact that within a month the seventh of a series of continental meetings was held in Paris, France, at which the abuse of alcohol was the theme. The French minister presided, the meeting was of an international character, and over 1,600 members were registered.

The president announced that the American contributions and papers showed positive proof that they led all the world in this field, as they did in other things.

The Paris *Figaro*, not a temperance paper, was very pronounced in its editorials on the need of the congress and the danger of alcohol. It announced in headlines as follows: "Alcohol is death to the race. Alcohol will kill emperors as it has killed the native tribes of every country of the world. Alcohol means disease, tuberculosis, decay, sterility, impotence; it is another word for wickedness, cruelty, vice, and insanity; it means misery and the downfall of nations, and the best way to prove patriotism and to be useful to one's country is to fight against alcoholism."

When I received an invitation from the chairman of this section to read a paper before it, I was assigned the topic, "The prevalence and mortality of alcoholic inebriety." This

* Read at meeting of The Illinois State Medical Society, May 16, 17, 18, 1899.

I have modified to read, "The prevalence of alcoholism, and its influence on mortality," and I take it that we desire to discuss the influence of alcohol, rather than the peculiar craze, or crave, or disease which may impel one to drink it. By "inebriety" I understand what Kerr describes as "that overpowering morbid impulse, crave, or craze which tends to drive certain individuals to excess in intoxicants." The synonym is narcomania. The craving is not for alcohol, but for intoxication; the relief or satisfaction afforded by intoxication, no matter whether the intoxicant be alcohol, or opium, or any other narcotic; the latter itself, perhaps, being held in abhorrence. Alcoholic inebriety is, then, one of the forms of narcomania in which there is a mania for intoxication by alcoholic beverages. Alcoholism is defined as "the various pathological conditions, processes, and symptoms caused by the intemperate consumption of alcoholic intoxicants" (Kerr.)

On the other hand, I wish to state clearly at the outset that when I shall speak of the influences of heredity, and of both crime and disease, I shall include both "inebriety" and "alcoholism."

PREVALENCE.

This is a very difficult question. At first thought, it seems only necessary to consult the various tables of statistics and find the answer ready made. But here, as elsewhere, statistics may be misleading. The following¹ may shed some light on the subject.

The average annual consumption, in gallons, of alcoholic beverages is as follows:

	Beer.	Wine.	Spirits.
England,	30.31	0.39	1.02
France,	5.1	21.8	1.84
Germany,	25.5	1.34	1.84
United States,	12.3	0.44	0.84

Col. Carroll D. Wright, Commissioner of Labor of Washington, D. C., in a recent Congressional report,² shows that the

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report of the Treasury Department reports the per capita consumption for the United States for the last year is as follows:

Malt liquors.	Wines.	Spirit.
15.16	6.26	1.00

Totals: Wines, 10,701,406 gallons; malt liquors, 1,080,620,165 gallons.

This shows an annual consumption for each man, woman, and child in England, France, Germany, and the United States of over twenty-five gallons.

If we deduct from the total population one-half for the teetotalers, moderate drinkers of both sexes, together with all children, then it means that *each of the others consumes a grand total of over fifty gallons per year.*

The English drink bill for 1898 was \$772,404,670.00.

The drink bill of the United States for '96 was \$934,813,-314.00.³

Debove⁴ gives the following statistics for 1896,* showing the number of liters per head per annum of alcohol:

	liters	per capita	per annum
France,	14	"	"
Belgium,	10	"	"
Germany,	10	"	"
Great Britain,	9	"	"
Switzerland,	8	"	"
Italy,	6	"	"
Holland,	6	"	"
United States,	6	"	"
Sweden,	4	"	"
Norway,	3	"	"
Canada,	2	"	"

To figure the prevalence of drunkenness it only remains to determine how much a man can drink and remain sober, and how long he may remain a drinker, or a hard drinker, or a drunkard before he becomes an inebriate.

Dr. T. D. Crothers, one of the most eminent authorities on this subject, in a recent personal letter to the author, says, that after a careful study of this question, he estimates that five per cent. to eight per cent. of the population are inebriates.

* These figures are confirmed by report at the recent Congress at Paris, April, 1899. Philadelphia *Medical Journal*, May 12, 1899.

Others place the percentage as high as ten per cent. This demonstrates that alcoholism and alcoholic inebriety are not only prevalent, but *one of the greatest national curses.*

INFLUENCE ON MORTALITY.

A correct estimation of the influence of alcoholism and inebriety upon the death rate is one of the most difficult problems in connection with the study of alcohol. Vital statistics afford us no help. According to the published report of the Department of Health of the city of Chicago, December, 1898, there were no deaths in the city from alcohol during the year.

Statistics of the world attribute only about three out of every one thousand deaths to alcohol.

In order to decide what influence alcohol has upon mortality it is necessary to determine:

(1) Whether inebriety is hereditary; establish a relationship between inebriety and insanity, and between inebriety and crime, and that both increase the rate of mortality. Increased liability to accidents while intoxicated.

(2) Determine whether there are any deaths due directly to alcohol, and those due indirectly to its use. Under the latter heading we must discuss hereditary influences predisposing to inebriety; and second, the inheritance of an increased vulnerability to adverse conditions of all kinds. Third, determine whether it has any influence in lessening normal vital resistance or immunity, thus favoring the occurrence of infection; also its influence on the course and virulence of the infection; and also the effect of alcohol upon the growth of pathogenic germs outside the body.

(3) Determine its influence upon the absolute power of muscle, as this has an important bearing upon both treatment and mortality.

In making this inquiry into this subject, I have appealed to the man of science who has but one object in view, the discovery of truth.

HEREDITY.

The transmissibility of an alcoholic inheritance has been generally admitted by such writers as Rush, Darwin, Morel, Grenier, Aristotle, Richardson, Thompson, Parker, Kerr, Davis, and others.

Dr. Willard Parker says: "We must not forget to speak of the offspring of the inebriate. His inheritance is a sad one; a tendency to the disease of the parents is, indeed, as strong, if not stronger, than is the case with that of consumption, cancer, or gout."

This tendency has its origin in the nervous system. The unfortunate children of the inebriate come into the world with a defective nervous organization.

Kerr says: "The law of inebriate inheritance is as true as the law of gravitation." Again, "In over 3,000 cases of chronic alcoholism I have found one-half with an inebriate ancestry."

Kraft-Ebling disposes of alcoholic inebriety as follows:

"First Generation. — Moral depravity, alcoholic excess.

Second Generation. — Drink mania, attacks of insanity, general insanity, paralysis.

Third Generation. — Hypochondria, melancholia, apathy, and tendency to murder.

Fourth Generation. — Imbecility, idiocy, and extinction of the race."

Morel gives the following:⁵

"First Generation. — Alcoholic male excess, depravity, and brutish disposition.

"Second Generation. — Alcoholism, maniacal attacks, and general paralysis.

"Third Generation. — Sobriety, hypochondriasis, persecution mania, and homicidal proclivity.

"Fourth Generation. — Feeble intelligence, mania at sixteen, stupidity, idiocy, impotence, with race extinction."

Demme⁶ has compared the health history of ten families

of drunkards with that of ten temperate families, as follows: The direct progeny of drunken parentage amounted to fifty-seven, of whom twenty-five died of insufficient vitality in their first year, six were idiots, five dwarfed, five epileptics, one choreic and idiotic, five had hydrocephalons, hare lip, and club foot.

Of the non-drunken stock, there were sixty-one. Five died of insufficient vitality, four suffered from curable nervous affections, two had congenital defects, 81.9 per cent. were sound in mind and body during childhood and youth.

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. Folk, 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."

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. 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.

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."

"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."

ALCOHOL AND CRIME.

"In Sweden⁷ the annual consumption of alcohol between the years of 1830 and '34 equaled twenty-three liters per head, and the number of murders committed fifty-nine; while during the three years from 1875 to 1878 the annual consumption was only five liters per head, and the number of murders only eighteen."

Arthur MacDonald tells us⁸ that of "10,000 murders committed in France, 2,374 occurred in saloons."

"Out of 49,423 arrests in New York, 30,507 were drunkards." Again, "the haphazard life between plenty and poverty is one of the main causes of premature death."

Daily papers show increase of murders after *pay-day*, and on Sundays and holidays.

Eurico Ferri was the first to demonstrate⁹ that in France there is a correspondence of increase and decrease between the number of homicides, assaults, and malicious wounding and the more or less abundant vintage. Also, that during the vintage months there is an increase of crime against the person.

These statements in regard to the influence of alcohol upon crime have been called in question by M. Tammes and M. Fournier de Flaix, the latter admitting, however, that "alcohol is a special scourge for the individual who indulges in it."

It has been proven over and over again that alcohol has a baneful influence on both mental and bodily health, and the nation is made up of individuals. If it increases disease and crime among those who use it, it must correspondingly increase it in the nation.

SUICIDES.

Suicides from drink.¹⁰

England, 12 per cent. of the suicides are from drink.

France, 12 " " " " " " " "

Prussia, 14 " " " " " " " "

Russia, 38 " " " " " " " "

E. Kaspar estimates¹¹ that 25 per cent. of the suicides of Germany are due to drink.

Norman Kerr says¹²: "In over 3,000 cases (of alcoholism) I have found fully one-half with an inebriate ancestry, in addition to six per cent. with a pedigree of mental disease."

"Hereditary craving for alcohol may proceed from parents, neither of whom possessed this craving, but were drinkers only by custom or sociability."¹³

Crothers traced a family history of inebriety in one-half of his cases.

Alcohol and evil disposition, with criminal tendencies, are ascribable to heredity, by Moreau.

Crothers says¹⁴: "Next to syphilis, alcohol is the most frequent cause of disease of the brain."

ETIOLOGY OF INSANITY.

Church says,¹⁵ in speaking of the etiology of insanity: "Alcohol stands first (after heredity) as a single independent cause," ten to twenty per cent. in males.

Clauston says¹⁶: "From fifteen to twenty per cent. of all

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cases of mental disease may be put down to alcohol as a cause, wholly or in part."

In 1884 the legislature of Massachusetts directed Hon. Horace G. Wadlin, chief of its Labor Bureau, to investigate and answer the question as to how much pauperism and crime is due to drink. He investigated 26,672 cases of crime. He reported¹⁷ as follows:

In liquor at time of commission of offense, 21,863, or eighty-two per cent. In liquor when intent to commit crime was formed, 4,852; 4,295 other offenses caused by the habit in 16,115 cases; drink had influenced the crime and ninety-four per cent. were addicted to the drink habit (JOURNAL OF INEBRIETY, January, '99.)

Statistics¹⁸ of the Belgium prison at Louvain show the following: Criminals received in twenty-one years, 2,826. Drunkenness at time crime was committed, 12.4 per cent. In those under a life sentence, 40.7 per cent., and in those condemned to death, 43.1 per cent. Habitual drunkenness was proved in 44.7 per cent. of total received, in 54.6 per cent. of those under life sentence, and in 60 per cent. of those condemned to death.

Dr. Muller¹⁹ estimates the number of suicides in Europe as 50,000 a year, and by an elaborate series of statistics traces to alcohol the primary cause of its increase of late years.

M. Jules LeJeune, ex-minister of justice, says²⁰ of Belgium (QUARTERLY JOURNAL OF INEBRIETY, Jan. 1899, p. 100): "74 per cent. of all cases in the criminal courts come from the use of alcohol; 79 per cent. of all paupers are drunkards; 80 per cent. of all suicides have a similar origin; 45 per cent. of all lunatics come from the excessive use of alcohol."

These recent utterances are significant of a great change of opinion. The denial of any relationship between inebriety and crime, put forth so authoritatively in the face of such overwhelming proofs, can have no possible value.

IMMUNITY.

We must next inquire what the latest word is in regard to immunity. Hektoen says²¹: "Taking a broad view of immunity, the sensibility of living protoplasm is found to be a factor noticeable everywhere, in natural as well as in acquired immunity, against poisons as well as against microbes, and in the simplest unicellular and multicellular organism as well as in the higher animals, including man. An inherited insusceptibility to toxins, as well as to inherited diminution of susceptibility, must be regarded as a well-proved fact. An immunity to living bacteria, the essentially active cells are to be regarded as phagocytes which incorporate living and virulent microbes, prevent their pathogenic action, or destroy them so completely that they are rendered definitely harmless." This cellulo-humoral theory expresses the present knowledge of this subject.

We next proceed to inquire what influence alcohol has upon this "sensibility of the living cell," as well as upon the centers which control and the nerves which transmit impulse, whether of a trophic or other character.

Platinia succeeded²² in producing anthrax in dogs, frogs, and pigeons naturally immune, by subjecting them to the influence of alcohol (Ernst, "Infection and Immunity.")

(Twentieth Century Practice, Vol. xiii, p. 208.)

INFLUENCE ON MUSCULAR WORK.

Nothing in physiological chemistry authorizes us to admit that alcohol has a favorable influence on muscular work. Again it teaches, that while a few grams of alcohol undergo combustion at the temperature and under the conditions existing in the body, the increased radiation of heat more than compensates for this. As for the food value, before a man would get a square meal he would be dead drunk.

This is the conclusion of Bunge, and he is at the head of the modern school of physiological chemistry.

One of the most important questions in relation to alcohol,

and one that has an important bearing on the question of mortality, is the influence of alcohol on the total work product of muscle. This question has been very carefully studied and the results reported by Dr. E. Destree.

He clearly demonstrates²³ that the *total work product of a muscle is greater without alcohol*. This serves to explain why alcoholic inebriates bear pneumonia so badly. The prognosis depends on the ability of the right heart to do its greatly increased work until resolution sets in. The right heart is the portal through which death enters, and its entrance is invited by a heart muscle weakened by alcohol.

It serves to explain also the increased mortality in pneumonia where large doses of alcohol are prescribed. This also harmonizes with the results shown in the Thirty-fourth Annual Report of the Commissioners of Public Charities and Correction of the city of New York for 1893, in which there is a startling relationship between the cost of liquors and the percentage of deaths.

ACTION ON SPECIAL SENSES.

Dr. J. W. Grosvenor has shown that²⁴ alcohol, even in small doses, has a paralyzing effect on the special senses, feeling, seeing, hearing, and weight.

Dr. J. H. Kellogg has ably demonstrated²⁵ that during an attack of any of the infectious diseases the urinary toxicity is greatly increased, and in some, as pulmonary tuberculosis, it is doubled. The activity in destroying these substances, and the kidney in eliminating them, are the physiological processes which stand between the patient and death. He has also demonstrated that the urotoxic co-efficient is enormously diminished by the administration of alcohol, reducing it to one-half after a single dose of eight ounces of brandy.

It seems evident that if in the infectious diseases the urinary toxicity is increased, and that alcohol retards the elimination of the toxic substances, it is not a good thing to use in

the acute infectious diseases, and that some of the mortality in these diseases is chargeable to its deleterious influence.

Fere says²⁶: "Experimental dosing of hens' eggs with alcohol delays and modifies the development, monstrosities and anomalies resulting."

Furer says²⁷: "The generative cells of drunkards are alcoholized and their children degenerate; their resisting force against alcohol is thus diminished. *Evolutionary adaptation of mankind to alcohol is impossible.*"

ALCOHOL ON HEALING OF WOUNDS.

Dr. Kiparsky, in a communication to the Russian Medical Society at St. Petersburg, contends, as the result of experiments of rabbits, that the healing of wounds is retarded by either the acute or chronic alcohol poisoning, as a consequence of the general diminution of the chromatic substances in the epithelial tissues, consequent upon lessened vital resistance and idioplastic energy of the tissues.

Alcohol causes athermatous, fatty, and cirrhotic changes in the vascular renal and hepatic glandular structures, and in fibrous and nervous tissue. As a result, we have arteriosclerosis, fatty and cirrhotic disease of the liver, hypertrophy and dilatation of the heart, gastritis, nephritis, as well as numerous and mental diseases, such as multiple neuritis, insanity, etc. Children procreated during drunkenness are often epileptic, imbecile, or deaf mutes.

One-ounce doses of alcohol depresses and lowers acuteness and activity. The rapidity of thought, the clearness of memory, the capacity to reason, the power to control the will, are all measureable by instruments, and all are lowered by alcohol. We can easily accurately measure the action of alcohol on the senses, and on these alcohol is a paralyzant at all times and in all doses.

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ACTION OF ALCOHOL ON MORTALITY FROM SUNSTROKE.

Dr. W. F. R. Phillips, in a very suggestive paper on "Meteorological Conditions of Sunstroke," gives the following tables.²⁸ The first bears upon the event and the second on the mortality. Eight hundred and forty-one cases were examined:

Using to excess,	140 cases, 30 per cent.
" moderately,	230 " 50 per cent.
" not at all,	95 " 20 per cent.
Total,	<u>465</u> 100
History unknown,	376
Total,	<u>841</u>
Using to excess,	41 deaths, 60 per cent.
" moderately,	22 " 30 per cent.
" not at all,	7 " 10 per cent.
Total,	<u>70</u> 100
History unknown,	70
Total,	<u>140</u>

Alcohol lessens the absorption of oxygen by the blood corpuscles and the giving off of carbonic acid. Every function of the body is thereby affected, is the testimony of Prout, Edward Smith, Harley, Schmiedenberg, Vieronly, Norman Kerr, and others.

Norman Kerr says³⁰: "The experiment of Dogiel, B. W. Richardson, and others indicate that alcohol, even in very small quantities, affects protoplasm, and therefore the entire system. It tends to cause cessation of ameboid movement of the white corpuscles, and, through this, increases liability to suppuration and the sluggish reparative action observed in drunkards. The general effect is to inhibit the vital phenomena inherent in protoplasm, hindering thereby the resistance of the body to infectious diseases, while the multiplication of the various bacilli in the presence of even minute quantities of alcohol would seem to indicate that life and growth of destructive elements are promoted. "The blood is improperly aerated and waste material is unduly retained in the body."

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Ridge says³¹: "Even in minute quantities alcohol favors the growth of many pathogenic organisms, including those of pus and diphtheria."

ALCOHOL AND THE HEART.

Norman Kerr says³²: "The heart failure of chronic inebriates has for the last quarter of a century been continually presenting itself in my experience, often preceded by, or contemporaneous with, dilatation of the muscle. Alcohol has a direct action on the involuntary muscular system, and the heart is more responsive to its dilating action than any other part of the body structure."

ALCOHOL AND TUBERCULOSIS.

"Chronic alcoholism, by lowering the condition of the system, renders more liable to both acute and chronic tuberculosis" (Kerr).

"One of the most efficient prophylactic measures against tuberculosis would be the repression of alcoholism."³³

Lagneau says³⁴: "The increase of tuberculosis is proportionate to that of alcoholism in France."

Dr. N. S. Davis summarizes the results of investigation of the influence of alcohol upon tuberculosis as follows:

"It will be observed from the foregoing collection of facts, that in one-third of the whole number of cases the tubercular disease commenced and progressed through all its stages, while the subjects of it were, at the time, and had been, from one to twelve years previously, habitually using either fermented or distilled spirits. In but little less than one quarter of the whole number the disease was developed in subjects who had for years abstained from all such drinks. It is thus clearly demonstrated that the use of alcoholic beverages, however uniform their administration, and however long continued, neither prevents the development of tubercular phthisis nor retards the rapidity of its progress."

Lanceraux of Paris³⁵ emphasizes the opinion which he has held for thirty years, that alcoholic excesses represent one of the principal causes of tuberculosis. Of course, he recognizes the bacillus of tuberculosis as the cause, but claims that the alcoholism favors infection, by diminishing resistance.

Langneau supports these views,³⁶ showing that the increase in tuberculosis in France corresponds to the increase in alcoholism.

I believe that as alcohol lessens the total work product of the heart, and that it affects the mortality of tuberculosis in two ways. First, by its action increasing the tendency or susceptibility by lowering vitality, and by favoring careless habits of life and dress; and second, that it renders the body more vulnerable to tuberculosis and stands in the way of success in any form of treatment.

Heredity leaves the individual with low defective vitality, enfeebled powers of resistance, a mind less capable of a firm grasp on the affairs of life, less able to adjust himself to his environment, and thus with diminished chances of life, a tendency to fecundity, the offspring dying early.

Indeed the neurotic origin of tuberculosis has for many years been urged by Dr. Mays of Philadelphia. That is, the neurotic, the inebriate inherits an increased vulnerability to adverse conditions of all kinds, and with this an increased tendency to tuberculosis.

Dr. Haycraft, in "Darwinism and Race Progress," declares that criminals, inebriates, lunatics, and consumptives are all born with neuropsychopathic constitutions, and in no other affections does heredity play so important a part.

Dr. Clouston of Edinburg, in a late report, says: "It is surprising how often insanity, consumption, and inebriety appear in the same family, and flow down to extinction among the descendants."

Dr. Sharkey of the London Pathological Society claims that disturbances and lesions of the vagus nerve, by lowering

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the nutrition of the lung, predispose to and become the induc-
of the bacillus of tuberculosis. Hence, all inebriates are pre-
disposed to tuberculosis and more are likely to contract this
disease than are any others.

Crothers says³⁷: "Twenty per cent. of all cases of inebriety die of tuberculosis."

ALCOHOL AND THE DEATH RATE.

The published report of the Bureau of Vital Statistics,
Department of Health, Chicago, for the years 1896 and 1898,
is as follows:

Chicago.	1896.	1898.
Population July 6, 1896,	1,619,226	1,619,226
Total deaths, all causes,	23,257	22,793
Alcoholism,	77	0
Erysipelas,	73	49
Septicemia (Puerperal),	92	114
Tuberculosis,	2,667	2,829
Bright's Disease (Nephritis),	656	1,048
Heart Disease,	1,231	1,237
Nervous Disease,	3,018
Pneumonia,	2,141	2,477
Diphtheria,	956	623
Small Pox (1895, 157; average for last 44 years, 145).		
Typhoid Fever,	751	636
Apoplexy (Cerebral),	471	503
Cirrhosis of Liver,	182	195
Uremia,	110	0
Acute Nephritis,	162	0
Killed by firearms,	51
Manslaughter,	69	77
Suicide,	331	347

ALCOHOL AND THE RUSSIAN DEATH RATE.

An official inquiry into the comparatively larger increase
in the Tartar population of the city and government of Kazan
has, according to the *Kamsko Volshkr Krai*, brought out some
remarkable facts as to the effects of alcoholic indulgence on the
death rate.

The Kazan Tartar, numbering about 640,000, have a rate

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of mortality of only twenty-one per 1,000, while the mortality among the Russians is forty per 1,000.

The general conditions among the orthodox Russians and Mohammedan Tartars are practically the same, except in so far as personal habits are concerned. The medical investigation leaves no room for doubt that the lesser mortality of the Mohammedan Tartars is directly due to their abstinence from spirituous liquors, in which the Russians indulge freely.

At the Dublin meeting of the British Medical Association, a special committee appointed for the purpose reported "that the habitual indulgence in alcoholic liquors beyond the most moderate amounts has a distinct tendency to shorten life, the average shortening being proportionate to the degree of indulgence."

CONCLUSIONS.

(1) Alcohol acts by destroying congenital immunity, increasing susceptibility, favoring by its direct influence the development of pathogenic micro-organisms, lessening the absolute strength of muscles, obtunding the delicacy of the special senses, causing changes in the nervous system whereby insanity is produced, the latter being transmissible; inducing inebriety, which is a nervous disease and hereditary, and increasing the death rate both directly and also by its tendency to exterminate the race, and directly causing such diseases as cirrhosis of the liver and chronic nephritis.

(2) As a result of the foregoing, infection is favored, the healing of wounds retarded, the infection of them by erysipelas facilitated, and the mortality increased.

(3) The liability to infectious diseases, especially tuberculosis and pneumonia, is very greatly increased because of the increased susceptibility, diminished powers of resistance, greater readiness of germ development, less care in providing against exposure, or in providing proper clothing, and also because the portal through which death enters in a case of pneumonia is commonly the right heart, and, its absolute strength being impaired, the mortality is thus increased.

(4) Alcohol is one of the most potent factors in the etiology of cirrhosis of the liver, chronic nephritis, general arteriosclerosis, and the non-inflammatory diseases of the heart.

(5) Alcohol is the chief cause of most of the cases of murder, suicide, and many other deaths by violence and accident.

(6) Alcohol has caused more deaths in Chicago in the last three years than has smallpox in the last forty-three years.

(7) The mortality lists for Chicago are not introduced by way of criticism of the Department of Health, because it does not assign the causes of death, it simply records them; but rather to show that they are misleading and fallacious because members of our profession are not calling things by their right names. It is done out of respect for the feelings of the friends. Why not call smallpox an eruptive fever for the same reason, shut our eyes to its presence, put up no warning cards, and make no effort to stamp it out or prevent occurrence?

You may argue that smallpox is a contagious disease, but I maintain that alcohol kills not less surely.

(8) At least a part of the mortality is fairly chargeable to the medical profession because of a want of knowledge of the action of alcohol, and because of its improper use as an alleged stimulant.

(9) Drs. Kerr and Richardson of England estimate that ten per cent. of all cases of death in England and Wales are due to alcohol.

Dr. T. D. Crothers of Hartford, Conn., estimates that fifty to sixty per cent. of all inebriates die directly from that cause.

Dr. N. S. Davis of Chicago estimates that fifty per cent. of all cases of chronic nephritis, cirrhosis of the liver, non-inflammatory diseases of the heart, cerebral apoplexy, and deaths by violence are due to alcohol. Undoubtedly, we may safely charge more than ten per cent. of all mortality of all large cities to alcohol, thus making the death rate in Chicago alone over 2,300 per year.

(10) To be successful in the fight against alcohol medical men can, more than any others, contribute substantial aid by calling the attention of medical men to this disease of contemporary humanity; by calling things by their right names and classifying and designating alcohol as a *narcotic*, not a *stimulant*, in their writing and speaking about it; by taking the necessary steps in the investigation of its effects, and then a concurrence of opinion in teaching, both publicly and privately, especially as to what constitutes an inebriate, and then his relationship as a diseased person toward the church, the law, and the medical profession.

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INEBRIATE LEGISLATION.

At the opening of the session in Edinburgh University last week, Professor Sir T. Grainger Stewart spoke of the necessity for further legislation in regard to inebriates. He said "there was a class of this kind who could be as definitely recognized as unfit to manage their own affairs as the insane, and he urged that the Legislature should grant powers for their being dealt with in the same way as the insane." It has been often urged by the students of inebriety that the case of the insane supplies a precedent for compulsory legislation which cannot reasonably be set aside in the case of those whom drink has deprived of self-control. This view is now confirmed by Professor Grainger Stewart. But at the Church Congress Sir Willoughby Wade, M.D., suggested a difficulty which would arise when the inebriate, after a few weeks' enforced abstinence from alcohol, recovered his sanity, and, feeling himself in his right mind, demanded his liberty. Could legislation be justified that would still detain such a man in a curative home? The difficulty is one that has no doubt received the attention of experts on the subject, who concur in saying that in a lengthened detention lies the only hope of cure. It is not a difficulty that should stop legislation. It seems to us that not the feelings of the patient after a short period in the inebriate home, but the condition of the patient at the time of being placed in the home, must determine the period of detention.—*Temperance Record*.

INEBRIETY—ITS NATURE AND TREATMENT.

BY T. N. KELYNACK, M.D., M.R.C.P., of Manchester.

Pathologist, Manchester Royal Infirmary; Hon. Pathologist to the Manchester Clinical Hospital for Women and Children; Hon. Pathologist and Bacteriologist to the Manchester Ear Hospital; Demonstrator in Morbid Anatomy, Owens College, Victoria University, etc.

Dr. Kelynack said a reformer had been defined as "one who educates and agitates." Such admirably summarizes the duties of all engaged in the temperance reformation. If we educated more it might be that we could afford to agitate less. The country was in need of an "enlightened conscience" in regard to the matter, but the question was so many-sided and required such thorough and patient investigation that even temperance workers had to strive hard to maintain "an enlightened intelligence" as to its various phases. Not the least important aspect was the scientific and medical. The old order ever "changeth, yielding place to new," and modern ideas were compelling the view that the temperance question was essentially one of public and personal health. Alcoholism, at least in many of its forms, had to be studied and treated as a disease. In dealing with inebriates one is bound to consider the patient as a whole, and to seek for abnormal physical conditions, as well as recognize the more pronounced derangements of the mind.

Even limiting the consideration to inebriety, or that morbid state characterized by an uncontrollable craving for alcohol, the subject was one of appalling dimensions. According to reliable returns there are probably no less than 600,000 inebriates in the United Kingdom. In some the condition arises

*An Address delivered at Liverpool, Tuesday, January 31, 1899.

as a habit, deepening into a vice, and becoming a veritable disease. In others it appears as a distinct morbid condition from the first. In yet another class inebriety was to be considered the most manifest indication of deeper-seated mental derangement. For purposes of precision the medical mind readily accepted the legal definition of an inebriate as "a person who, not being amenable to any jurisdiction in lunacy, is, notwithstanding, by reason of habitual intemperate drinking of intoxicating liquor, at times dangerous to himself or herself, or to others, incapable of managing himself or herself, and his or her affairs."

Inebriety was to be considered as essentially a mental disease, a morbid psychological state. But the cause was clear — a known, definite, physical agent, alcohol, which, in almost any of its forms, was capable of initiating the condition. And legislation must remember that other bodies besides alcohol are only too frequently used as inebriants. Although the exciting cause might be clear, the predisposing influences were many and powerful. They might all be grouped into two classes — one concerning the individual, the other influencing his environment. Physical conditions, perhaps, especially in women, lead to paroxysmal outbreaks of ungovernable drinking. The influence of heredity could not be neglected. Temperament also played an important part.

Inebriety manifested itself in various forms. These were briefly referred to.

But while the clinical aspects of the subject were of extreme interest and great scientific importance, the practical aspects of the question were paramount. There had been long delay in establishing treatment on rational and scientific lines. Alcohol was pre-eminently the great degenerator. It produced structural deterioration of tissue, impaired volitional power, and weakened powers of physical and moral resistance. The undermining of will and judgment made compulsory control a necessity. This was practically the unanimous

view of the medical profession. Penal measures were irrational. Restraint was essential, and of vital importance in holding out the greatest chance of permanent cure. Prohibition must start with the habitual drunkard. Much that is said with regard to the "liberty of the subject" when applied to an inebriate must be ruled "out of order." Inebriates are the weak-willed children of the state. A freedom which is abused must be withdrawn. A liberty which means license cannot be tolerated. An indulgence which leads to death must be suppressed. From the very nature of his condition the inebriate has, in many instances, no desire to be deprived of his liquor. He cannot appreciate the necessity for reform. His clouded judgment converts the suggestions and actions of friends into acts of persecution and cruelty. A dulled perception, of necessity, entails a loss of those finer distinctions between right and wrong which are among the glories of man.

The lecturer then reviewed at length the efforts that had been made to obtain legislation for the inebriate. It was contended that hitherto rational treatment of inebriety had not been given a fair trial. The difficulties of the "Inebriates' Act" for voluntary or non-criminal cases were indicated. In spite of all obstacles, however, much benefit had resulted.

The new Inebriates' Act of 1898, for criminal inebriates, was considered. Temperance workers might accept it with thankfulness, value it highly, and should use it wisely. It was the first fruits of a glorious harvest. It granted only a part of what was required, but it was epoch-making in that it showed that at last the law was willing to admit the need for remedial measures. The humanizing influence of the hospital was to replace the brutalizing conditions of the prison. For criminal inebriates the act, if rightly administered, meant little less than a revolution in methods of treatment. The lecturer indicated the general scope of the act, and urged temperance and Christian workers to consider their opportunity and responsibility in the matter. The act ought to prove of

the greatest educational value to the country, and will stamp the closing days of the nineteenth century as the period when the first real effort was made to adequately protect the victims of alcoholism by the compulsory application of remedial measures.

But the non-criminal class formed an immensely larger body. The pauper inebriate especially should be dealt with. But poor and rich alike were in need of protection. The relatives should have power of direct appeal, and the suffering partner in life should be able to be relieved from the curse. Neighbors should be allowed the right of ridding themselves from a source of danger and demoralization. The desirability of continuing "voluntary admissions" to retreats was also considered. Many reasons demanded the compulsory restriction of inebriates. It was a sin and folly to allow confirmed inebriates to become parents. Incurables should be retained in inebriate colonies.

Reference was made to the so-called "cures" and warning given against many of the "secret" and quackish methods so freely advertised. The lecturer also remarked on the immense force of moral and religious influences on guiding and controlling conditions essentially physical.

"Preventive" measures were strongly advocated. The scientific value of total abstinence should be impressed on the minds of parents and guardians. Family predisposition was to be early recognized, and prompt treatment adopted, before degenerative tissue changes had made cure difficult or impossible. The need for increased means of dealing with the preventive aspect of the question was urged.

Much remains to be done if progress is to be maintained. There is still immense mental and moral inertia to be overcome, profound ignorance to be dissipated, and higher and nobler ideals sought and found — but sooner or later the day must dawn when every one shall be able to say—

“It matters not how strait the gate,
 How charged with punishments the scroll,
 I am the Master of my fate,
 I am the Captain of my soul.”

THE EXPENSE, STUPIDITY, AND SIN OF EXCESSIVE ALCOHOLIC DRINKING.

According to the most recent statistics, we find that the average annual consumption (in gallons) of alcoholic beverages is per inhabitant as follows:

Country.	Beer.	Wine.	Spirit.
England,	30.31	0.39	1.02
France,	5.1	21.08	1.84
Germany,	25.5	1.34	1.84
United States,	12.3	0.44	0.84

Were it not that our minds have been so long obtunded by the figures, we would be struck dumb with the amazing fact that the English drink-bill for 1898 was \$772,404,670, a net increase of over \$10,000,000 on the bill of 1897. And the English Chancellor of the Exchequer is delighted at his \$60,000,000 income from the tax on beer, and hopes it will grow larger. At the same time the Registrar-General reports that the deaths from alcoholism are rapidly increasing! Moreover, what stupidity it shows. If the number of children, and teetotalers, and moderate drinkers are deducted, what hogs must be several millions of people to bring the average of consumption to twenty-five or thirty gallons. What a thick-headed way to get food, if beer is food, or, if it be only a diluted alcohol, what a witless way to buy alcohol. Not only in the direct production of disease is drunkenness a great national curse, but in the indirect results, as Sir Henry Thompson has pointed out, the denutrition from poor food both of the workman and his family, because the money that should have gone for good food has been spent for drink. It is a sad spectacle of blundering and sin.—*Phila. Med. Jour.*

THE PATHOLOGY OF ALCOHOLISM.

By J. W. GROSVENOR, M.D., Buffalo, N. Y.

Alcoholism is a disease which consists of abnormal conditions, caused by the internal use of alcohol. So far-reaching is the influence of alcohol that the pathology of alcoholism covers a very broad field. Hence, in a brief paper it will be impossible to explore every part of the territory included within its extensive boundaries.

Some authors, as Magnan, have divided cases of alcoholism into several classes according to their severity and the symptomatic conditions which they present. For the purpose of this paper it will be sufficient to classify them under two heads, viz.: acute alcoholism, ordinarily called by the laity drunkenness, and chronic alcoholism, frequently termed by the medical profession alcoholic inebriety.

A case of acute alcoholism is a case of acute poisoning. A case of chronic alcoholism is a case of chronic poisoning. No fact has been more clearly and firmly established by chemistry and physiology than that alcohol is an acrid narcotic poison. Its poisonous quality is one of its chief characteristics.

For convenience of investigation and discussion the pathology of alcoholism may be divided into three parts, according to its effect upon different portions of the human organism, viz.: moral pathology, mental pathology, and physical pathology.

Alcohol is a paralyzer, a depressant, and its general effect upon the moral, mental, and physical powers is paralysis, partial or complete, temporary or permanent.

MORAL PATHOLOGY.

The normal human being is endowed with self-control. Somewhere in his nervous system resides an inhibitory force which regulates his moral nature. This force maintains his desires and passions in an equilibrium. Whatever impedes the normal working of the will weakens it and permits immoral forces to bear sway in the conduct of life. Common observation teaches the influence of alcoholism over the moral nature of its victims. The changes in disposition and character undergone by the alcoholic are numerous and positive.

The quiet man when alcoholized becomes animated and energetic; the lively nature, dull and morose; the inoffensive spirit is made brutal; the loving and tender mother has grown hateful and harsh to her children; purity is transformed into licentiousness; fraud and deceit take the place of the soul of honor; the truthful man becomes a liar; he who has had a strict regard for the rights and property of his fellow-man is now a thief; crime in varied forms walks abroad in the shoes of the citizen who was upright and law-abiding; the former respecter of life as a sacred trust commits murder and suicide.

It may be stated incidentally that a case has been reported of an alcoholized man who had the habit of stealing horses. He stole nothing else. Legal punishment seemed to exert no deterrent effect upon this criminal characteristic. Many other cases might be cited to show that alcoholic kleptomania takes the form of monomania.

These exhibitions of the alcoholic are a few of the signs that make known a changed nature and habits. These are some of the results of alcoholization. The alcoholized man has become morally pathologic.

MENTAL PATHOLOGY.

In cases of alcoholism the intellect, the sensations, and the will become impaired; the memory is not infrequently com-

pletely abolished or greatly disordered. It is related that an army officer, a sufferer from alcoholism, after a drinking bout which lasted from twenty-four to thirty-six hours, stoutly asserted that during his alcoholic spree he had visited several places with which he was well acquainted, talked with personal friends, and transacted certain items of business, whereas none of the places had been visited, none of the friends had been seen by him, and he had attended to none of the matters of business which he mentioned.

It is a matter of common knowledge that the intoxicated murderer oftentimes states under oath that he has no knowledge of the crime recently committed. How many of these denials are due to an effort on the part of these alcoholics to shield themselves from guilt, and how many to an actual obliteration of memory for the time being, it is impossible to determine. Without doubt the memory center is positively affected by the paralytic property of alcohol. The faculties of conception, reason, and judgment undergo marked changes in the course of alcoholism. Conception becomes indistinct; reason is swerved from its logical basis; judgment is so warped that it draws false conclusions.

To show the effect of acute alcoholic poisoning upon mental processes, Kraepelin and Furer have made very elaborate tests. The amount of alcohol ingested varied with the different experiments from two drachms to two ounces. The special mental acts upon which trials were made were decision, association, learning by heart, and addition. The experiments were very extensive, embracing in one group 3,600 trials on a single kind of mental action. None of the subjects were at any time more than in a slight degree intoxicated. The conclusion which may be fairly drawn from these tests is that under the influence of small doses of alcohol intellectual processes are embarrassed and disordered in some form or other to a degree which may be accurately determined.

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	Quinine 2 grs.
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	Salol 2 grs.

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Hallucinations of sight and hearing are the result of alcoholism.

Common observation has noted that these mental disturbances are apt to take place in that phase of alcoholism termed delirium tremens. This delirium is the result of the inordinate ingestion of alcoholics. Its victim sees creatures of various sizes and shapes which cannot possibly be within his sphere of vision, a species of zoopsic hallucination; he hears voices which have no real existence. These sights and sounds are figments of his pathologic imagination.

I recall the case of an army colonel who, while suffering from an attack of acute alcoholism, was in the habit of mounting a table in his quarters and looking intently at the ceiling for some person whose voice he heard coming from that direction.

Alcoholic Dementia. Alcoholic dementia is the termination of the status of moderate alcoholic drinking. The condition of simple retardation of the mental processes begun under the influence of a small dose of alcohol has steadily progressed until mental activity has ceased and mind only exists as a shadow. This is the last act of a drama which has had as its moving spirit a periodic or continuous ingestion of alcohol.

PHYSICAL PATHOLOGY.

The Brain. The part of the human organism which is most vulnerable to the pathologic influence of alcoholism is the nervous system. From examination it has been demonstrated by MM. Lallenand, Perrin, and Duroy that a given weight of the brain of an alcoholized person contains a larger quantity of alcohol than the same weight of the tissue of any other organ of the body.

The general effect of alcoholism on the nervous system is poisonous and paralytic. Chemists and physiologists have pronounced alcohol an acrid, narcotic poison. The most rigid, careful, and extensive experiments have proved it to be a paralyzant.

When ingested it passes rapidly to the brain. Repeated ingestions are followed by a continuous hyperemia. Sometimes effusion follows the hyperemia, and probably is of frequent occurrence. Alcohol unchanged has been found in the brains of persons accidentally killed in a state of acute alcoholism. A physician of Troy, N. Y., relates that he was present at the autopsy of a man of that city who had been a drunkard for forty years. When the brain was exposed a distinct odor of alcohol was emitted from it, and a lighted match started a blue flame over the whole of its exposed surface.

Alcohol, by its power of absorbing water, hardens tissue.

Many competent observers and experimenters have ascertained the pathologic condition of the brains of animals and human beings who have died from alcoholism.

The experiments of Dehio, in 1895, demonstrated that during acute alcoholism important changes occurred in the ganglion cells of the cerebellum. Experiments lately made by Stewart have fully confirmed the results obtained by Dehio.

According to Kellogg, the nerve filaments of the brain are shrunken, blunted, and destroyed by alcoholism.

Phillips states that as a result of alcoholism the neuroglia becomes thickened and presses upon the nerve cells, changes their form and thus contributes to their destruction.

Forel believes that there is a shrinking of the alcoholized brain which is irrecoverable.

Jackimoff, after feeding dogs with alcohol, found on post-mortem examination the cells of the gray matter of the brain in a state of disintegration.

Gentles has found the convolutions of the alcoholized brain "narrow, shrunken, and flattened," dura mater thickened and adherent to the cranium, arachnoid opaque, pia mater thickened and adherent to the surface of brain, increase of ventricular and subarachnoid fluid, oozing of blood into substance of brain, vessels running from pia mater to cortex enlarged, tortuous, with marked fatty and atheromatous changes.

Atkins observed that some of the blood vessels of the alcoholized brain become contracted, while others are unnaturally distended; new cells are formed in the cortex, which are called scavenger cells, because they appear to destroy the remains of the normal cells.

Berkley experimented with alcohol upon rabbits. Upon examination of their brains after death he found the walls of the vessels damaged, leucocytes collected in masses, alteration of cellular protoplasm, thickening of arterial sheaths, nerve-cells diminished in size. He easily recognized a microscopic difference between the brain of a control rabbit and an alcoholized rabbit, and has remarked that similar lesions, though not so pronounced, have been found in alcoholized human brains.

In the examination of human brains subjected to alcoholization, Twitchell has found serum in the ventricles and between the membranes; the arachnoid, "water-logged"; vessels of pia mater, dilated; an appearance identical with the wet brain of nephritis; membranous deposits on the surface of the dura mater; coats of the capillary vessels and the nerve-cells degenerated. He states that as one-fifth of the blood flows through the brain, one-fifth of the alcohol absorbed into the blood comes in contact with the brain, and thus paralyzes the gray cells so that they cannot perform their motory and sensory functions; that if sufficient alcohol has been taken it paralyzes the centers of respiration and circulation.

Nothnagel believes that alcoholism is a predisposing cause of cerebral embolism through its degenerating effect upon arteries.

Direct proof of cerebral congestion by alcoholism has been furnished by experiments upon dogs by Neumann and Kremiansky. According to Huguenin, Lancereaux and Kremiansky regarded chronic alcoholism as "the most frequent and most important" cause of pachymeningitis.

Boehm states that pachymeningitis hemorrhagica "has been considered by many as pathognomonic of chronic alcoholism."

Wilks has shown that some of the products of alcoholism as seen in the brain are a wasted appearance of the cortex and a fatty degeneration of the ganglionic cells.

The principal factors in producing these pathologic conditions of the alcoholized brain are the paralyzing force of alcohol and its extraordinary power of absorbing water. The vaso-motor nerves become paralyzed in whole or in part; the blood-vessels lose their contractile character; the blood current is not moved forward with normal rapidity; the impurities of the blood remain an abnormally long time in contact with the cells and neuroglia. The cerebral tissues become poisoned, hardened, shrunken, and disintegrated. The delicate structures of the brain being under these baleful influences it is not surprising that the power of co-ordination is destroyed, mental processes retarded and confused, memory lost, and that oftentimes the outcome of alcoholism is insanity and dementia.

Spinal Cord. The pathologic changes in the spinal cord due to alcoholism are similar to those already noted as occurring in the brain. As observed by Clarke, there is softening, alterations indicative of inflammation, degeneration of ganglion cells, increase of connective tissue in lateral columns, and disease of small blood-vessels.

Erb states that "intoxication with alcohol" is an occasional cause of spinal irritation; that alcohol appears to exert some influence as an etiological factor of spinal pachymeningitis; that chronic alcoholism induces spinal myelitis of a chronic character; that spinal paralysis is produced by alcohol; that, according to Huss, spinal leptomeningitis has the misuse of alcohol as "a very active cause."

Nerves. The general effect of alcoholism upon the nerves is paralytic; it impairs and destroys both their sensory and motory functions. According to Barlow, the substance of the nerves in alcoholism becomes disintegrated, and its fibrous supporting tissue is invaded by new materials.

Forel declares that alcohol poisons the nerves and diminishes their sensibility.

The experimental researches of Ringer, Dubois, Martin, Wood, Cerna, have shown that alcohol lessens "the sensibility of the nerve-cells both in the central and peripheral parts of the nerve structures."

Searcy calls attention to the colloidal character of the axis-cylinders of nerves, and of the nerve-cells, and to the hardening effect upon them of alcohol, which inhibits the movements upon which they depend for their normal functions.

The nervous system is a prominent stone in the foundation upon which rest all the structures of the body. Upon its integrity depend the soundness and normal functions of all the physical organs. It is the source of all human activities. Any injury to its delicate cells and filaments is felt by all the tissues and fluids which they control.

Appreciating these facts, we can realize the disastrous effects upon the human organism of the poison, alcohol, and the disease alcoholism which it engenders.

Testimony is amply sufficient to prove that several diseases of the nervous system are the result of alcoholism.

Multiple Neuritis. It is stated by Wood and Fitz that alcoholism is the most common cause of this disease.

Early observers, among whom was Lancereaux, held the opinion that the pathologic changes of polyneuritis alcoholica were confined to the peripheral nerves and muscles; later observers, prominent among whom was Eichhorst, discovered pathologic conditions in the spinal cord, and even in the brain.

Drysdale lays stress upon atrophy of muscles of the extremities as a marked pathologic change in alcoholic neuritis.

Reunert has made observations on twenty-five cases of alcoholic neuritis, of which he states that thirteen were typical cases of polyneuritis.

Herter gives an account of a child three and one-half years of age who, after drinking twelve ounces of whisky one after-

noon, suffered from multiple neuritis which continued over two months.

So many physicians of large experience have observed that multiple neuritis is the result of alcoholism that little doubt exists as to their relation to each other of effect and cause.

Alcoholic Epilepsy. Stern expresses the opinion that "alcoholism, in its acute and chronic form, may become an important etiologic factor of epilepsy."

Nothnagel states that, aside from heredity, "the habitual drinking of considerable quantities of alcoholics assumes the first place" as an agent which is "capable of evoking the epileptic change."

It is my belief, founded on reliable data, that alcoholism is directly responsible for epilepsy in five per cent. of the cases, and that continually there exist in the United States between 4,000 and 8,000 alcoholic epileptics.

Insanity. That many-sided and variously-defined disease called insanity has alcoholism as one of its causal factors. No intelligent physician can study in detail the history of insanity as related to alcoholism without arriving at the conclusion that quite a large per cent. of all cases of the former are the outcome of the latter. Alienists differ materially as to the extent of the influence of alcoholism in the production of insanity. According to Baer, in the years 1878-9, twenty-seven per cent. of all the male lunatics in asylums in Germany had entered on account of alcoholic causation. Among these were 600 cases of delirium tremens.

In France, in Bicetre, in 1865, alcoholism was put down as a cause of male insanity in 25.24 per cent. of the cases. In Charentin, Marsaing put down alcohol as a cause of male insanity between 1865-70 in 27.87 per cent. of the cases. It is said that forty per cent. of the male lunatics in Austria are alcoholic insanity cases.

In the year 1897 the writer secured the last published reports of the state insane hospitals of forty states and territorie

of the United States. These reports show that of all cases admitted to these institutions in which the cause of the insanity was ascertained, 9.35 per cent. were the direct result of alcoholism. These are very moderate figures, and probably are far from representing the full influence of alcoholism in the production of this disease.

Statistics of this description might be multiplied indefinitely, and doubtless would show that alcoholism is directly one of the pathologic factors of insanity in from ten to sixty per cent. of the cases. It is safe to assert that in all countries of the civilized world thirty-three per cent. of all cases of insanity is the average number due directly to alcoholism.

The indirect influence of alcoholism in the production of insanity it is impossible to compute with much exactitude.

It gives me pleasure to direct the attention of the medical profession to a very able and exhaustive article on "Alcohol Insanity in the Light of Modern Pathology," by Dr. W. Lloyd Andriezen, published in the January (1896) issue of *THE QUARTERLY JOURNAL OF INEBRIETY*.

Alcoholic Craving. The intense craving for alcohol termed dipsomania is not a condition of the normal, healthy human organism. It is pathologic. Alcoholism may not always be its primal cause, but it is surely intensified by that disease and is frequently one of its results. Concerning this craving for alcoholics Forel declares that "it is always the proof of a heavy hereditary burdening." Oftentimes this craving is paroxysmal, and its victim, feeling the foreshadowing of its onset, makes deliberate preparation for its gratification. In many instances so intense is it that only incarceration will prevent its indulgence.

Alcoholic Paralysis. Dr. James Jackson was the first writer to describe this disease. Since his day numerous writers, as Huss, Wilkes, Clarke, Thompson, Lancereaux, Moele, Buzzard, Broadbent, Hadden, Bristowe, Dreschfeld, Hun, have recognized it as a distinct disease. From a study of its

symptomatic and pathological appearances it seems to be closely allied to alcoholic neuritis, if not identical with it.

Further observation, both clinical and post-mortem, is necessary to determine whether these two diseases are one or are congeners whose cause is the same, — acting upon different materials and in different environments.

That alcohol is a paralyzant, even in the small quantities of one or two drachms, has been proved beyond question by the experiments of Ringer, Sainsbury, Martin, Wood, Cerna, Ridge, Kellogg.

Blood. Carpenter has made the assertion that pathologic changes occur in the corpuscles and fibrin of the blood when there is not used more than one part of alcohol to five hundred of blood.

There is microscopic evidence to the effect that the blood corpuscles of the alcoholic are altered in shape, become crenated and shrunken.

Hence they are incapable of conveying the normal quantity of oxygen and hemoglobin.

Griffith states that “spectroscopic examination of alcoholic blood reveals a change in one of its most important constituents, — hemoglobin.”

Thus alcoholism contributes to the impurity of the blood.

As the physical system depends upon a properly oxygenated blood for its metabolism, its waste and repair, its growth and development, it is not difficult to determine that the alcoholized man is ill-nourished and that many of his organs suffer from degeneration.

Heart. It is well known that fatty degeneration of the heart is a characteristic effect of chronic alcoholism. This cardiac condition is due mainly to impaired nutrition or defective oxidation, for both of which alcoholism is responsible. Pearce and Maguire have expressed the belief that sometimes acute dilatation of the heart is caused directly by alcoholism, and have detailed cases to substantiate their belief.

Victor Horsley and Dujardin Beaumetz have given expression to a similar opinion.

Several authors refer to the development of cardiac hypertrophy in chronic alcoholism. The dilatation and hypertrophy are accounted for in part by the atheromatous degeneration of blood-vessels and the paralyzing effect of alcohol on vaso-motor nerves, both of which conditions impose additional work upon the heart.

Arterio-sclerosis is a generally recognized result of the ingestion of large quantities of alcohol.

Respiration. The functions of the respiratory apparatus is diminished and entirely suspended by the paralyzing influence of alcoholism. Lauder Brunton asserts that alcohol "diminishes the activity of the respiratory center of the brain," the respiratory act becomes slower and more shallow.

Respiration has its greatest utility in the removal of carbonic dioxide and the introduction of oxygen into the system. Any disease or influence which hinders these processes produces a pathologic condition which seriously affects the various functions of the body. Cerna, by experiments on dogs, has shown that alcohol "in large amounts produces a depression of both depth and rate of the respiration through a direct action on the centers in the medulla oblongata."

It is important to recognize the fact that a smaller quantity than normal of carbon-dioxide is removed by the respiratory act from a person who is suffering from alcoholism. In proof of this statement may be cited experiments on living human beings carried on from time to time since the year 1813 by Prout, Fyfe, Vierordt, Hervies, St. Laver, Böcker, Davis, Hammond, Edward Smith, Richardson, Lehmann. The red corpuscles of the blood under alcoholic influence take up less than their normal amount of oxygen: a diminished supply of oxygen is carried to the tissues: less oxidation takes place, and hence the diminished elimination of carbon-dioxide by the lungs. Thus alcoholism poisons the system not only directly, but indirectly, by preventing the excretion of waste products.

Alcoholic Phthisis. Several medical writers, as Richardson, Payne, Davis, Thorain, Bell, Kelynaek, Mackenzie, express the opinion that alcoholism is the cause of phthisis pulmonalis. Certainly it can be only an indirect cause, by so enfeebling the system as to render it peculiarly prone to assume this disease. Without doubt the alcoholic is specially liable to it. Some authors state that alcoholic paralysis is quite liable to be followed by pulmonary tuberculosis.

Chronic Laryngitis. Wood and Fitz hold the opinion that the excessive use of alcohol is important as an etiological factor of this disease.

There is authority for stating that singers who wish to preserve the purity and power of their tones have learned to eschew alcohol.

Stomach. The stomach has been a battlefield upon which has been waged many a contest concerning the exact pathologic action of alcoholism.

However great may be the difference of opinions concerning the pathologic effect of acute alcoholism and moderation in alcoholic drinking upon the stomach there is a general uniformity of belief concerning the effect of chronic alcoholism upon this organ.

According to Gentles some of the post-mortem appearances of the stomach produced by chronic alcoholism are "erosion and ulceration" of the mucous membrane, thinning of the muscular coat, increase of sub-mucous connective tissue, "atrophy of the secreting glands," dilatation.

These changes have been noted by many competent observers. Gastric catarrh is a product of both acute and chronic alcoholism.

Gastric Digestion. No intelligent, unprejudiced person would hesitate to declare, reasoning a priori, that imperfect and retarded digestion would follow such pathologic conditions as mentioned above. The experiments of Beaumont upon the fistulous stomach of St. Martin substantiated such a belief.

Blumenau, by experiment upon the digestion of five young men under alcoholic influence determined that "gastric digestion is markedly diminished"; "the secretion of gastric juice becomes more profuse and lasts longer than under normal conditions"; digestive power of gastric juice is diminished; the stomach has less absorptive and motor power.

The experiments of Chittenden and Mendel upon proteid artificial digestion with alcohol showed that whenever the amount of alcohol exceeded two per cent. of the mixture acted upon there was a "decided decrease in digestive activity."

Kellogg, from experiments made upon the living, arrived at the conclusion that "alcohol prevents the formation of gastric juice in the stomach."

Roberts has shown that beer and wine destroy starch digestion in the stomach.

The results of the numerous experimental researches made concerning gastric digestion would seem to leave no alternative to the conclusion that alcoholism interferes largely with the anatomical integrity of the stomach and its legitimate functions.

Liver. Chronic alcoholism diminishes in the liver, as in other organs, vaso-motor influence and produces dilatation of the capillary vessels; the connective tissue is increased by exudation, and thus the organ becomes contracted; there occurs genuine cirrhosis, which has received the name of gin-drinker's liver and hob-nailed liver. Jacobi, in his clinical lectures, has stated that cirrhosis of the liver or interstitial hepatitis in children is sometimes due to alcoholism.

These extensive anatomical changes wrought in the liver by chronic alcoholism must necessarily interfere with its activity in producing bile and must impair its glycogenic function and its power to destroy ptomaines.

A vast quantity of blood passes through the liver, and it is one of the functions of this organ to purify this life-sustaining fluid. Bile is a powerful antiseptic and aids the digestion of

fat. Alcoholism, by interfering with the purifying function of the liver and its bile-producing function exerts a potent deleterious influence on the whole system.

Spleen. Alcoholism is mentioned by Master as one of the causal factors of amyloid degeneration of the spleen.

Pancreas. Friedreich is inclined to the belief that "general chronic interstitial pancreatitis may result from excessive alcoholism"; that its pathologic changes are similar to those of cirrhosis of the liver and kidneys, and hence we are justified in naming it cirrhosis of the pancreas.

Gout. There is evidence to the effect that alcoholism is influential in the production of gout. No doubt diligent and extensive inquiry would discover only a few total abstainers who suffer from this disease.

Kerr found only one total abstainer among 1,500 cases of this disease, the remainder being either moderate or immoderate drinkers.

Kidneys. Glazer, by extensive experiments, has found that alcohol produces irritation of the kidneys, exudation of leucocytes, cylindrical casts, "an unusual amount of uric acid crystals and oxalates."

Chittenden, by experimenting on dogs that had been kept under the influence of alcohol for eight or ten days, found the elimination of uric acid increased 100 per cent. above the normal quantity.

Professor Christison claims that "three-fourths, or even four-fifths, of Bright's disease in Scotland is produced by alcohol."

Pitt states that the kidneys of forty-three per cent. of hard drinkers are hypertrophied.

The amount of extra work by the kidneys necessitated by the consumption of large quantities of alcoholic drinks produces structural changes. A fatty and granular condition occurs; Bright's disease and albuminuria follow.

A partial loss of the eliminating function of the kidneys may be a causal factor in the formation of the calculi.

Twitchell, from post-mortem examinations, has concluded that the kidneys in delirium tremens "are probably always affected." In all his autopsies interstitial nephritis was present and parenchymatous changes were not infrequent.

In relation to the causation of Bright's disease, Flint states that "as a primary affection it occurs especially in persons addicted to intemperance."

Wood and Fitz mention alcohol among the causes of chronic interstitial nephritis.

Gentles represents the alcoholic kidney in a cirrlosed condition similar to that of the cirrlosed liver.

August Smith states that alcoholic kidneys are either swollen or contracted.

The above-mentioned pathologic conditions of the kidneys produced by alcoholism show conclusively that when they are thus affected a normal secretion of urine is impossible. Necessarily albumen and all those morbid products which result from various diseases of the kidneys will appear in the urine.

Urine. Kellogg has used Bouchard's biologic test in determining the urinary toxicity of persons under alcoholic influence. This test determines "the amount of rabbit which might be killed by the quantity of toxic substances produced in twenty-four hours by each kilogram of the patient."

By applying this test to the urine of an alcoholized person Kellogg found that the urinary toxicity was enormously diminished, showing that the toxic substances which should have been eliminated were retained in the system.

Sexual Organs. According to Forel, Demme has proved that degeneration of the sexual glands is a result of alcoholism.

Drysdale states that "venereal desire is frequently entirely destroyed by drunkenness. The testes and ovaries are prematurely damaged by alcoholic poisoning."

Lippich mentions that "drunkenness is a great cause of sterility and abortion."

According to August Smith, "the male sexual organs are affected, the testes atrophied, and drinkers become impotent early in life" through alcoholism.

Mairet and Combermal demonstrated by experiments in Paris that the procreative organs of both sexes suffered degenerative changes caused by alcoholism.

Boehm expresses the opinion that there is only a very little alteration of the sexual functions in the earlier stages of alcoholism; that in the later course of the disease sterility occurs in both sexes.

Flint asserts that under the influence of chronic alcoholism there is a decay of the function of generation.

Hodge's elaborate experiments upon dogs give evidence that alcoholism conduces to impairment of the generative functions and to sterility.

Further experimentation will be needful to determine the value of such testimony.

No author which the writer has been able to consult furnishes an exact and detailed description of tissue degenerations of the sexual organs which occur in cases of alcoholism.

Eye Diseases. Ophthalmoscopic examinations of persons suffering from delirium tremens have revealed congestion of the fundus oculi, enlargement of its arteries and veins, pulsation of veins of the optic disc, an unusually dark appearance of the blood in both arteries and veins.

The weakened and dulled vision of amblyopia is often due to alcoholism.

The oculist, Charles H. May, has given the following list of eye troubles as due to alcoholism: "Congestion of the iris, spasm of accommodation, contraction of the pupil, photophobia, nyctalopia, glimmering sensation in bright light, scotomata (color and white), amblyopia, partial (temporal) atrophy of the nerve."

Several observers have found in the alcoholic an interstitial neuritis, resulting in proliferation of connective tissue and degeneration leading to atrophy of the optic nerve.

These pathologic conditions are similar to those which are found in the alcoholized liver and brain.

Organs of Special Sense. Edward Smith has shown experimentally that alcohol lessens the functional activity of all the senses.

Ridge, by very accurate and delicate instruments, has demonstrated that the ingestion of two drachms of alcohol impairs vision, feeling, and sensibility to weight. Under the paralyzing influence of alcohol the touch becomes less sensitive, the vision less acute, and the sense of weight less discriminative.

Seougal has confirmed Ridge's experiments, and both he and Crothers have determined that there is a like impairment of the sense of hearing.

Richardson, by an electric balance, detected a diminution in the hearing capacity under small doses of alcohol.

Nicol and Mossop, by experimentation upon each other with the ophthalmoscope, found that the nerves controlling the retinal blood-vessels were paralyzed by the ingestion of a tablespoonful of brandy.

Kellogg found by experiment with instruments of extreme delicacy and accuracy, after two ounces of brandy, a diminution in the tactile sense, the temperature sense, and the accommodation power of the eye.

If these small quantities of alcohol will make upon the organs of special sense paralyzing impressions easily detected by instrumental test, it is not difficult to conclude that larger doses frequently and for a long time repeated will produce the profound sensory effects of a pathologic character observed in the confirmed alcoholic.

The effect of alcohol upon the transmitting power of nerves has been shown by Howie. He found that after two glasses of hock a message from the brain to the hand required for its transmission 0.2970 of a second, whereas the same message, before taking the hock, was transmitted in 0.1904 of a second.

By experimenting on the muscular system he learned that two hours after administering two ounces of brandy the degree of muscular force had been diminished one-third.

Skin Diseases. By its general effect upon the system, especially the liver, kidneys, blood, nerves, alcoholism may produce various diseases of the skin, though the direct evidence of such causation in many skin diseases is not very strong. So frequently is alcoholism accompanied by acne rosacea that we are warranted in believing that these diseases hold the relation to each other of cause and effect. Undoubtedly this skin disease is produced by the paralyzing influence of alcohol on the vaso-motor nerves. Thereby the contracting force of the blood-vessels is lessened. The blood-stream is not moved forward with normal rapidity; blood collects in the vessels and enlarges their caliber; acne rosacea is the result.

Micro-Organisms. The effect of alcoholism in lessening resistance to the attacks of micro-organisms has been shown by the experiments of Abbott upon rabbits. The normal vital resistance to infection by streptococcus pyogenes was markedly diminished. He noted that the resistance in some instances was lowered in alcoholized rabbits that were inoculated with staphylococcus aureus. Six rabbits that were alcoholized and then inoculated by the bacillus coli communis died, while three control rabbits that were not alcoholized lived.

As a general proposition, founded on the researches of Massart and Bardet, it may be stated that leucocytes are antagonistic to microbic toxins. May it not be that alcoholism partially or completely destroys this antagonistic property, and thus prevents the leucocytes from performing their legitimate work of ridding the tissues of these toxins?

Temperature. Binz, by experiments on healthy animals with thermometer in rectum, demonstrated that under a small dose of alcohol there was no rise in temperature; under from one to three ounces of alcohol there was a temperature fall

of five-tenths to one degree Fahr. Observations on a healthy man eighteen years of age noted similar results.

Davis and Richardson have also determined that alcohol taken internally lessens bodily temperature.

Reichert has demonstrated that "alcohol not only increases the loss of heat but also decreases its production."

Felton, after experiments upon cats by hypodermic injections of alcohol, concluded that "the tendency of alcohol is to first depress and then elevate the previously normal temperature, and to correct an abnormal temperature."

Although Bunge believes that "alcohol increases the supply of heat it increases also the expenditure of it." He states that "the net result is a diminution of temperature."

It is a matter of common knowledge that health depends largely upon the normal temperature of the body. If bodily heat rises above or drops below the normal point there is a departure from health. The large majority of investigators express the belief that alcoholism lowers the normal temperature, thus placing the physical organism in a pathologic condition.

Elimination and Excretion. Böcker has demonstrated experimentally that alcohol in the living body lessens elimination and excretion, and thus retards molecular changes. These results were verified by the experimental researches of Hammond.

Davis has made experiments along the same line and arrived at the same conclusions, which he has thus expressed: "I have fully satisfied myself that the presence of alcohol in the human system positively diminishes the important functions of respiration, capillary circulation, calorification, and metamorphosis of tissue, and, as a necessary consequence, leads to diminished excretion and to the accumulation of effete matter, both in the blood and the tissues." This view is substantiated by the fact that in the confirmed alcoholic there exists fatty degeneration in various organs.

Chittenden, by experiments on dogs, "found the elimina-

tion of uric acid in the urine to be increased 100 per cent. over the natural proportion," showing that in alcoholism an unusual amount of nitrogenous substances are imperfectly oxidized, and consequently are circulating in the blood and producing a deleterious effect upon the tissues.

This lack of proper metabolism in the alcoholized system is the result of the influence of alcohol upon the blood by lessening its capacity to convey the usual amount of oxygen, by preventing the elimination through the lungs of the normal quantity of carbon-dioxide, and by the paralyzing effect of alcohol on the vaso-motor nerves, thus causing an accumulation of unaerated blood in the capillaries.

Cells and Protoplasm. The microscope has revealed the pathologic changes in the cells of various organs suffering from alcoholism. One of the first changes noted in the cell is a "cloudy swelling"; it becomes granular; the nucleus is "somewhat obscured." These cellular changes have been found in the organs of animals that have died from acute alcoholism. If the alcoholized condition continues fatty degeneration follows and masses of fat are deposited in the cell and take the place of protoplasm. The significance of these pathologic changes is that they take place at the very beginning of physical growth and development.

In summing up the contents of this paper the following remarks may be worthy of attention:

Scarcely any disease, perhaps none, exerts so extensive a pathologic influence as alcoholism on the organs, tissues, and fluids of the body.

The paralyzing effects of alcoholism extend throughout the nervous system, from its center to its periphery. This paralytic effect is seen not only in the body but in the intellect and moral sense.

The principal degenerations in alcoholism are fatty, fibroid, and atrophic. Fat is substituted for normal tissues; alcohol withdraws water from the tissues, and thus they become dry

and hardened and at length assume a fibroid character; through lack of proper nutrition the cells become shrunken and atrophied. By these degenerations the anatomical integrity of organs is destroyed, partially or wholly, and their functional activity is impaired. Thus the whole system suffers and in time becomes a wreck. Alcohol has been aptly termed "the genius of degeneration."

So profound and widely disastrous are the pathologic results of alcoholism upon the individual and the race, and believing this disease may be placed properly in the list of preventible diseases, it is my firm conviction that it is the bounden duty of the medical profession, sanitarians, and boards of health to use their utmost efforts for its complete eradication.

Alcoholism is another predisposing factor. By examining the statistics of a large city, it was learned that in eighty-three families in which the parents were inebriates, there were 410 children, of whom 112 (or over one-fourth) were victims of idiopathic epilepsy. A physician of Munich recently noted an epileptoid condition which he aptly termed alcohologenic cardiac epilepsy. This was preceded or accompanied by dilatation of the heart, and was purely alcohologenic, subsiding completely with abstinence from liquor, in some cases and partially in others. As the heart improved the epileptoid condition disappeared.—*Dr. Mahone, Physician and Surgeon.*

THE LOUISIANA MORPHINE AND COCAINE LAW.

The legislature of Louisiana has passed a law making it unlawful to sell at retail any cocaine, morphine, or opium, or its preparations, except under the written prescription of a practicing physician, such prescriptions not to be refilled. Violation of the law is punished by a fine of not over \$100, or imprisonment for not over thirty days, or both, at discretion of the court.—*Texas Courier-Record.*

THE WORK OF THE LONDON TEMPERANCE
HOSPITAL.*

BY DR. J. J. RIDGE, Senior Physician to the Hospital.

Notwithstanding that this hospital has been doing the work for twenty-five years — having been opened in 1873 — there are still many people, even total abstainers, who do not know of its existence, and many more who do not understand its principles and the motives of its establishment, nor the extent of its operations.

Thirty years ago medical practice might almost be summed up in the words “alcoholic stimulation.” The doctrines of the late Dr. Todd had largely affected the medical mind. Alcoholic liquors were regarded as stimulants of vital force, and as supplying a most nourishing and easily assimilated food to the tissues. Scarcely any disease was treated without some form of alcoholic liquor, and often in large quantities. Not only was alcohol given during the progress of the disease, but its various mixtures (beer, wine, etc.) were regarded as most valuable aids to convalescence; to neglect them was regarded as dangerous to life itself.

So insistent and persistent were large numbers of medical men that a great many total abstainers were induced to abandon their habit during illness, and contracted such a craving for drink during convalescence that they never resumed it. The exaggerated idea of the very great value of alcohol as a medicine and as a preservative of health and strength which this practice led so many to entertain proved most disastrous. The numbers of excessive drinkers, or so-called dipsomaniacs,

* Read before the Seventh International Congress at Paris against the Abuse of Alcohol.

rapidly increased, and the friends of temperance felt that something must be done to show that alcoholic liquors were not so valuable as was supposed, and might safely be dispensed with altogether in disease as well as in health.

The London Temperance Hospital was, therefore, founded in 1873 in a private house in Gower street, London, with seventeen beds.

Such was the prejudice with regard to alcohol that it was expressly stated in the rules that any of the visiting medical staff might order alcohol in a pure form in any case in which he might consider it necessary, and that special notes should be kept of such cases and of the results of its administration. Up to the present time there have been thirty-one such cases, twenty-one surgical and ten medical, of which twenty-two have died, or seventy-one per cent.

The accompanying tables give the statistics presented at each annual meeting up to that just held (March, 1899), by which it will be seen how the work of the hospital has increased both in its "in" and "out" department. In 1881 a new building was opened in the Hampstead Road, by which the number of beds was increased to fifty, and in 1885 a second wing was added and the beds increased to eighty-six. In 1898 another bed was added in a specially constructed "aseptic ward." A sum of five hundred pounds (\$2,500) has just been allotted to the hospital from the Prince of Wales' fund, on condition that twelve new beds were added, and this is now accomplished, as a liberal friend has given one thousand pounds (\$5,000) for their maintenance for one year.

Cases of every description are admitted, of exactly similar character to those admitted into other general hospitals; nevertheless the death-rate has been under seven per cent. of the whole number of 15,274 in-patients, which, as far as it goes, is a strong testimony to the value of non-alcoholic treatment.

It may be added that in consequence of the success of this hospital other "temperance hospitals" have been established

in other parts of the world, while there has been concurrently a very large diminution in the amount of alcoholic liquors consumed in other general hospitals.

The thousands of persons cured in this hospital have undoubtedly received a practical demonstration of the possibility of recovery without alcohol, many of them from the severest diseases and operations, and in no case have habits of intemperance been contracted to their ultimate ruin, as is so frequently the case when intoxicating liquors are employed.

In the extensive out-patient department very many have been saved from following advice to drink alcoholic beverages, which they had been recommended to do by doctors and friends.

This hospital, then, proves to demonstration that the large quantities of alcoholic liquors still prescribed in sickness are quite unnecessary, and in all probability often actually injurious.

TEST FOR THE PRESENCE OF NICOTINE IN TOBACCO.

To demonstrate the presence of nicotine in tobacco smoke, Kissling uses a bottle half full of water rendered faintly acid with sulphuric acid; two tubes pass through the stopper, one dipping into the fluid and having a cigar inserted in the upper end; through the other much shorter tube the assistant draws the smoke in the ordinary way of smoking. When a portion of the cigar is consumed, a few drops of Mayer's reagent are added to the liquid, in which a copious precipitate is produced in the presence of nicotine. Further evidence of nicotine may be obtained by rendering the solution alkaline with soda and distilling. The idea that a picoline base, and not nicotine, causes the reaction described is not borne out by this experiment. Previous investigations by the author also show that tobacco smoke contains relatively a large proportion of nicotine and never more than a very small proportion of picoline base.—*Chem. Zeitung.*

REPORT OF THE SEVENTH INTERNATIONAL
CONGRESS ON THE ABUSE OF ALCOHOL.*

BY CHAS. H. SHEPARD, M.D., Brooklyn, N. Y.

On the fifteenth day of last March two members of this society, Dr. T. D. Crothers and the writer, left New York to take part in the "Septieme Congres l'Abus des Boissons Alcooliques," held in Paris during Easter week, April 4th to 9th. Another member, Dr. J. H. Kellogg, of Battle Creek, Mich., joined us while there.

A pleasant voyage and a little sight-seeing, including a few days in Holland, prepared us to enjoy the meeting of strangers who were working on much the same lines as ourselves. Our credentials were well received, and to the honor of our country Dr. Crothers was made one of the vice-presidents.

This congress was the largest and most successful of the European gatherings held on this subject, and indicates that the people are waking up to a more serious study of alcoholism.

Monday evening, April 3d, there was given a tea, introducing the members to one another. The total registration was between eleven and twelve hundred, and many countries were represented. Among others outside of France and the United States, were Germany, Austria, Russia, Belgium, Norway, Finland, Italy, Greece, England, and Canada — in all, twenty-one countries and colonies. The Belgian, Russian, and Norwegian governments were officially represented by experts upon inebriety who had been appointed to report upon the congress, and Dr. de Hebra, professor in the Viennese Faculty of Medicine, who was given a knighthood by the Emperor, was sent by the Austrian government. Dr. Rudolph Pösch,

* Read before the American Medical Temperance Association, Columbus, Ohio, June 8, 1899.

who was decorated by Emperor Francis Joseph for bravery in nursing three plague patients, was also a part of the Austrian delegation.

The first general session was presided over by M. Jules Le June, Minister of Public Instruction from Belgium. The President of the Congress, Dr. Legrain of Paris, made the opening speech. Then came the secretary's report, by Dr. Boissier, occupying twenty minutes, after which followed a number of five-minute speeches. All were received with a great deal of enthusiasm. There was a statuette of our Frances Willard on the president's table, and some complimentary words were said of the American representatives, as well as of others.

The afternoon session was presided over by M. Henri Brisson, late prime minister of France, who welcomed the delegates in the name of the government, and delivered a powerful address upon alcoholism in France. Then followed Mons. Boyet, delegate from the minister of public instruction; M. Buisson, M. Barbey, M. Hercord of Lausanne, and Professor Graeter of Basle, who spoke principally on the question of temperance education in the primary and secondary schools and colleges.

Among the prominent scientists present with papers were Dr. Baer of Berlin, Dr. Forel of Zurich, Dr. Smythe of Vienna, and Dr. Emil Jordy of Switzerland, but the fact stood out very distinctly that the public sentiment of Europe was about fifty years behind that in America on the temperance question. The title of the congress was significant; it was "Against the Abuse of Alcohol," and yet it was remarkable that such a number of prominent Europeans should gather in the interest of this cause. A notable incident was when Dr. C. Thiron, official representative of the government of Roumania, in a ringing speech, moved that the name be changed to "Against the Use of Alcoholics." This was promptly carried when put to vote.

The opinion is very prevalent in our country that the drinking of wine and beer in France and on the Continent is commendable, and that intoxication is rare. This is shown to be a great mistake, from the fact that France is the most drunken country in the world. Already some of her wisest men have sounded the note of alarm, and the attention of the government has been called to the subject.

During the sessions of this congress a remarkable article was published by M. Carnely, the chief editor of the *Figaro*, the concluding paragraph of which was as follows:

"It would be well for every Frenchman to rise every morning with the thought that he belongs to the race that consumes the most alcohol." The following startling lines were prominently displayed: "Alcohol is death to the race. Alcohol will kill the Europeans as it killed the Indians of the Western Continent. Alcohol means disease, means tuberculosis, means decay, sterility, impotence. Alcohol is another word for wickedness, cruelty, vice, and insanity. Alcohol means misery, downfall of nations, and the best way to prove patriotism and to be useful to one's country is to fight against alcoholism."

In a discourse by Dr. Jacquert it was stated that "in the Department of Eure, where the most drinking is done, there was one drinking place to every three or four adults." In Normandy the women drink more than the men, and the mortality among the children is excessive in consequence.

Statistics show that in France and Belgium the consumption of alcohol increases, while in other countries it diminishes. France leads the list with a yearly consumption of 14.19 liters for each person, while Canada is placed at the bottom of the list with 2.50 liters to each person. If ever France is to be redeemed it must come through the abolition of King Alcohol, along with the deadly absinthe, and the destructive tobacco, and paying more attention to the laws of nature. One good symptom is that Paris is now supplied with good drinking

water part of the time. It seems almost incredible, but it has been publicly stated that when the supply of good water runs short the authorities permit the addition of the impure water of the Seine!

Germany, as well as other grape-growing countries, is becoming seriously affected by the excessive use of spirits. This was demonstrated by the large gathering of government officials and representatives of many sections for the amelioration of the condition of the people, as well as a large number of medical men and clergymen, to protest against the use of alcohol as a beverage. One hundred and fifty papers and addresses were offered during the four-days session, and a free discussion of the many phases of the alcohol question was permitted, particular attention being given to the danger of alcohol as a beverage, as well as the danger of moderate drinking. Both Catholic and Protestant clergymen vied with each other in calling attention to this danger, and emphasized it with much vehemence. A few eminent physicians followed with reasons and statistical facts sustaining the clergymen, and some lawyers and jurists were not behind in giving their evidence. These were received with great enthusiasm by the audience, composed as it was of reformers and representatives of different orders of temperance societies.

Among the delegates to the congress were a large number of women, who carried off the palm for earnestness and eloquence. All the delegates, and particularly the English-speaking ones, were very much indebted to the kind activities of Miss Charlotte A. Grey of London, who did much for the success of the congress. Mme. Selmar, the delegate from Denmark, electrified the audience by the most eloquent and finished address of the congress on the work of women and the church in temperance reform.

No special policy or line of work was adopted by the congress, but among the points insisted upon by the papers was that of teaching the truths to children, the improvement of homes, and the increase of personal vigor, health, and lon-

gevity, the diminution of sickness, crime, and pauperism, and the self-evident proposition that total abstinence is not dangerous, nor the withdrawal of spirits in any way hurtful. It was, indeed, a revelation to Continental Europe to see a thousand men and women of all grades of society gravely discussing a question which was supposed to be confined to a few radical reformers.

In the afternoon of the second day a reception was given to the delegates of the congress by the members of the Municipal Council of Paris, at the Hotel de Ville. A large number of the delegates were present when the thrilling notes of the Marsellaise announced the arrival of the president of the Council and other members of the municipalitie. The president, in a speech, offered a warm welcome to all. M. Dr. Legrain, president of the congress, responded with thanks, and introduced to the mayor several representatives of different countries. Honorable Conrad Dillon responded on behalf of the English-speaking members of the congress. The president then conducted the party on a tour of inspection through the beautiful rooms. Delicate refreshments were furnished, and the occasion was a pronounced success.

Thursday evening there was a banquet, at which about five hundred participated. The most successful after-dinner speaker was a German priest, and this showed that the French people are making some progress toward tolerating the German language, as well as the Germans themselves. A very complimentary address was given to the English-speaking banqueters by M. Dr. D'Aubigne, a son of the famous historian.

On Saturday a special excursion to the palace at Versailles, during which a luncheon was served, was another courtesy extended by the government to the delegates. The congress adjourned to meet again in two years at Vienna. In the evening a cheerful party assembled to take "The d'adieu." Dr. Legrain said he had spared the congress a final summing up of its proceedings, but he could not help feeling that the gen-

eral trend had been in favor of moral suasion, individual effort, and education, rather than of repressive legislation. He felt that the hope was in the individual and personal reform of the habits and customs of the rising generation, and in the name of the young people of all nations he raised his glass of water to the success of the cause.

During a short visit to London we were tendered a reception by the English Society for the Study and Cure of Inebriety, presided over by Dr. Norman Kerr, who, while an invalid, had come fifty miles to give us a greeting. The gathering was held at the London Medical Society's rooms. Dr. Kerr made some exceedingly complimentary remarks, referring to the fact that Dr. J. Edward Turner of America was the first to maintain that inebriety was a disease. Congratulations were in order, to which your representatives responded.

Since our return the papers have informed us that Dr. Kerr has passed into the great beyond. A noble man has fallen, but his bright example will encourage many others to follow in his footsteps of usefulness.

There was also a reception given us on the eve of our departure by the National Temperance Society of London, which was attended by a number of prominent physicians and workers in the temperance field, among others Dr. Sims Woodhead, Professor of Pathology at Cambridge, and Dr. J. J. Ridge of London, who has taken the place occupied by the late Sir Benjamin Ward Richardson, as president of the Temperance Hospital of London, and John T. Rae, the able son of Robert Rae, who has so long been a prominent worker in the temperance cause of Great Britain. We were made to feel thoroughly home and enjoyed their many kindnesses.

In review, we can but express our satisfaction with the trip. We had an opportunity of visiting and enjoying the hospitality of three different nationalities, and were everywhere the recipients of much courtesy, and we feel satisfied that the results of the congress will be far-reaching and give a decidedly important impetus to the cause of total abstinence.

Abstracts and Reviews.

THE PSYCHOLOGY OF NARCOTISM.

BY XAVIER SUDDUTH, A.M., M.D., Chicago, Ill.

Nature intended that man should be a comfortable animal and enjoy to the full the fruits of his labor.

Man has ordered otherwise, and as a consequence in the receding days of the nineteenth century, when art and intellect have reached their highest development, we find man, born to be the favored creature of nature, laboring under self-imposed burdens of society, oftentimes heavier than he can bear. As a natural consequence of his pernicious environment he is frequently found seeking surcease from the pains of existence in self-immolation, temporary intoxication or suicide, the method adopted depending much upon his belief in a future state and his relation thereto.

What are some of the steps that have operated to bring about these deplorable conditions? They cannot be laid to natural causes, because there has never been a time in the history of civilization when the actual needs of man were to be satisfied with as little expenditure of vital force as at present. The cause of the stress of the age must therefore be looked for, not in the physical, but in the psychic domain of man's nature, and it is to this phase of the question that I desire to call your attention to-day.

In that degree that man is able to perform the necessary duties of life by force of habit so does he lessen the labor of existence. The hardest work man has to do in this world is to think. Every psychosis has its neurosis. New experiences or acts are successfully mastered only by the expenditure of thought. The greater part of the absolutely necessary acts

of existence are performed by rote rather than by thought. Thought labor requires nerve action, just as surely as locomotion incurs muscular activity; and while it is true that there is a marked physical difference between mental and muscular action, yet physiologically considered they both express a condition of catabolism that has to be met by metabolism. Ordinary cell wear is not necessarily painful. On the other hand, a certain degree of pleasurable exhilaration accompanies most necessary bodily functional activity. When, however, exercise is carried beyond a certain point, so as to become forced, it soon becomes painful. When weariness ensues as a consequence of functional activity, pleasure ceases and pain begins. Pain is the absence of pleasure according to our major premise laid down in the opening sentences of this paper, and if this be true, then its abolishment does not consist in self-immolation, but in a readjustment of our relations to our environment or its more or less complete reconstruction.

Pain and pleasure are not distinct physical conditions, no matter how intimately they may appear to be related, but mental states, and therefore require careful consideration to differentiate them. Pleasure and pain are often so closely connected that it is with difficulty that they can be separated. Not only this, but the terminology used to express the two conditions is inextricably confused. Many people are said to "cry for joy." In fact, so narrow is the division line between the two conditions that the scale turns upon the mental state of the individual at the time of experiencing any particular sensation, as to whether he suffer pain or feel pleasure. The close relationship between them is thus shown by a case in which the one merges into the other. Continuous stimulation, that at first gives pleasure, in time becomes painful. This leads to the conclusion that only a certain amount of pleasure is bearable by human nature, if furnished without intermission. The system may be surfeited by pleasure as well as borne down by pain. But what is it that suffers? Surely not the physical that alone experiences wear. No! Pleasure and pain are not

conditions *per se*, but mental perceptions of sensations experienced at the time or revived from some previous experience, through thought images brought before the mind by association of ideas. Then again, not only does pleasure easily merge into pain but the very absence of pain, to him who has suffered, is a pleasure. The fullest appreciation of the pleasures of existence are to be had by comparison with painful experiences happily passed. While many of our joys and sorrows are the result of purely physical sensations, yet a considerable proportion of our pleasures and pains are intimately associated with our emotions and are distinctly dependent upon the peculiar physical condition in which the experience finds us. Many of the acutest pains of existence are those of restriction. Man longs to be free, to cast off the burdens of care, for even a short space of time, to secure a respite from the pains of existence — to lose himself; hence his resort to the use of narcotics. Sad delusion! The greatest slave of all is he who seeks his freedom in these deceptive agents. Nine out of ten narcomaniacs will tell you the same story, when asked as to how the habit was formed. "I took it to relieve pain," "to drive dull care away," "to get a little rest," and thus the chains of habit were forged.

Dr. Carpenter says, "that our nervous system grows to the modes in which it has been exercised." That is only another way of putting the fact that we develop along the lines of least resistance, according to the bent of our special inclinations, limited and modified by our peculiar environment. Habits are more easily formed in youth than later in life, by reason of the fact that the organism is in the formative stage and the inhibitive feature of the will is less developed than it is later on. If a young man or woman reaches the age of twenty without having acquired any vicious habits of thought, action, or appetite, ten to one they will go through life free from contamination. Nevertheless, physical states of weakness later in life seem to unman the individual and re-establish, to a greater or less extent, the conditions prevailing in adoles-

cence. Drugs that may be given during the crisis of a disease with impunity, if continued during convalescence are apt to give rise to drug habits, hence the necessity of discontinuing the use of stimulants and narcotics during this stage of the disease and depending upon a nutritious diet and natural remedies to bridge over this critical period when the will is weakened and the moral faculties seem to be more or less clouded.

Narcomaniacs may, for convenience of study, be divided into three classes:

1. Those who have acquired the habit through hereditary tendencies, and who find in the use of narcotics a physical pleasure.

2. Those who, though physically strong, yet are led into the habit by social customs as the result of environment.

3. Those who turn to narcotics for relief of the pains of existence.

The psychologic bearing of the several classes is essentially different when laboring under the spell of the drug. Members of the first class have, in most instances, the warning example of degenerate ancestors; yet so great is the demand of the system for sedation that they brave the dangers and public opinion with a brazen effrontery that is many times astonishing. They have no desire to reform and their course is continuously, progressively downward. With them there is no shadow of turning. They are wholly given over to evil ways and the sooner they end their days the better for themselves and mankind at large.

The second class, considerably larger than the first, much larger in some countries than others, suffers mostly from the direct effect of the drug because removed from the moral stigma under which other classes labor. While its members are seriously handicapped in the battle of life, yet they manage to preserve a tolerable existence, unless the particular narcotic used happens to be hasheesh or opium, and even against the latter the natives of India seem to hold a more or less charmed existence.

It is to the third class, however, that I desire to call special attention, because they are those who dwell among us: Our fathers, mothers, brothers, sisters, and friends. Brought to their condition of enslavement, many times by circumstances over which they have no control, held accountable by an highly intellectual and moral civilization, they suffer, not only from the direct effect of the drug used, but from the goadings of an outraged moral nature. The members of this class, oftentimes forge their chains through years of petty indulgence in the use of the milder sedatives and narcotics. Their case then is one of slow growth and needs to be studied from that standpoint. A diseased condition of the will is established, in which the individual finds himself unable to stand out against what he knows to be sin against the physical body. It was not always so; there were times when, in the early history of the case, had he had the right kind of treatment, he could have broken the bonds of the growing habit with comparative ease. These diseased conditions of the will form most interesting psychological studies and promise to throw much light upon the rationale of treatment. In the main, an entirely erroneous idea of the function of the will prevails. Most persons consider it as a direct motor force only, confusing it with volition, which is the act of the will, and thus overlook entirely its inhibitive aspect. In one sense the will may be said to be dual; but in any event it represents a state of the mind, and is, according to James, "a memory of past acts." Its parents are desire and feeling and its offspring are represented in such mental states as "I wish," "I will" and "I will not," which latter is many times synonymous with "I can not."

In order that feeling and desire may become motor impulses, they must be accompanied by a knowledge of the attainability of the object desired. otherwise a futile or even no effort is made to attain the object desired. We thus observe the difference between "I wish" and "I will" and note that faith is one of the principal attributes of a strong will. The inhibitive aspect of the will which enables its possessor to say

no is largely a matter of education. Uncivilized man knows no master, save want, and when opportunity for indulgence offers, gives full reign to his unhallowed passions. The tendency of civilization is to teach the control of the passions through the limitations of environment. Man thus learns to inhibit his desires and hold in check his feelings through the inhibitory action of his will. He is thereby enabled to contain himself within the bounds of decorum and decency. It is by will power that man is an abstemious animal and when given over to indulgence he is simply evidencing the atavistic principle which so often crops out during the evolutionary process. Civilization teaches man to "wish" and to "wait" for many things in this life, upheld by the hope of their fulfillment in some future existence, if not in this, and also that by restraining his passions and appetite he is serving his own best good.

Continued indulgence in the use of narcotics finally creates an appetite. Like a bad debtor, they promise much and pay little. The system continually cries out for relief that comes not. This irresistible craving is intensified by moral or physical restraint and the habitue is urged on by his vitiated appetite to greater and greater indulgence when opportunity offers. No feat is considered too dangerous to be attempted to secure the coveted dram; no human tie too sacred to prevent the fulfillment of his unhallowed desire; even hope of future salvation is freely given up for the cup that cheereth but to damn. The intensity of the passion for narcotics when once the habit has taken hold upon its victim, points only too plainly to something essentially different from a mere physical appetite. Hunger for food, even unto starvation, shows no comparison in its suffering to the agony of the alcoholic inebriate or the opium fiend when deprived of his wonted potion. Everything points to a diseased mental state beyond the power of any drug to reach it as an *antidote*. While drugs play an important role as alteratives and tonics in the treatment of inebriety yet there is not a "cure" in existence, that has any efficacy, that does not base its permanency upon the "sug-

gestive" methods employed in effecting the cure. While it is true that some depend almost entirely upon "drug suggestion" yet the cures that promise most in permanency of results have incorporated in them a system of psycho-physics, using the term medically, that is successful in proportion as it is scientific and comprehensive.

Inebriety, in all its forms, is beyond question a neurosis, and permanency of cure depends upon establishing an absolutely altered mental state, together with the maintenance of a healthy environment until such time as the individual has fully regained possession of his will, and developed sufficient moral stamina to withstand the temptations of the open saloon and social life.

SOME QUESTIONS.

In his address before the British Medical Association, Sir Wm. Broadbent says: "Morphia suspends the activity of the nerve centers. But how? What chemical or molecular change takes place in the tissues? How is it that the slightest change in the composition of the morphia molecule radically alters its effects? The physician cannot tell. The salts of potassium and of sodium are almost exactly similar. Yet a minute quantity of the former injected into a vein will paralyze the heart and destroy life, while the latter may be turned into the circulation wholesale with no bad result. Why is it? Why is so simple a substance as prussic acid so deadly a poison? A thousand of such questions may be asked. None of them can yet be answered. We know that these things do thus and so. How they do it we do not know; but until we do medicine will scarcely become an exact science. That we shall one day attain such knowledge is confidently to be expected. That must be the work of chemistry; and when we remember that the science of chemistry is scarcely more than a century old, and when we consider the bewildering scope and importance of its achievements in that century, it is surely not too much to hope great things from its future labors."

THE BIOLOGICAL STUDY OF INEBRIETY.

We noticed a pamphlet on the temperance question from a biological standpoint in the last number of the journal. The author, Dr. C. A. Reid, has evidently aroused some sharp criticism and attracted more than usual attention to his peculiar views. Briefly, he argues that excessive use of spirits is evolution, and only through great excess can sobriety and elimination be obtained. He thinks natural selection will from great excesses bring about sobriety, and that all measures to stop the use of spirits are useless, "that the world must be thoroughly drunk before it can be thoroughly sober." This argument is among the rare specimens of literary "ground and lofty tumbling," in which opinions, theories, and reasoning are served up in a spectacular, bewildering manner. In a criticism on Dr. Reid's paper before the English Society for the Study and Cure of Inebriety, by the well known Dr. Kerr of London, occur the following extracts:

"Dr. Reid appears to think that nations acquire an immunity against alcoholism because he assumes that nations that once deeply indulged are now temperate. He asserts that Greeks, Italians, South Frenchmen, Spaniards, and Portuguese, inhabiting the south of Europe, were in ancient times much more drunken than at the present day. What are the facts? Take Italy. Only last year Signor Giovanni Rochat, in a paper on *L'Alcoolismo*, lately published at Turin, set forth that the national reputation for sobriety was in danger, that there was in Italy a great increase in the number of places where the intoxicants were sold, a great increase in the quantity of wines and spirits consumed, and a great increase in the number of cerebral maladies due to alcoholism. Signor Rochat, after sorrowfully reviewing the malign influence of excessive drinking on the health, morals, and social state of the Italian population, suggests remedial measures to aid in staying the alarming progress of the alcoholic plague, in the shape of temperance teaching in the schools, the formation of temperance societies, and the spread of temperance literature.

Again, take southern France. It is true that the more southerly portion of la belle France has been generally more sober than the northern parts; but the modern ravages of alcohol have far surpassed any of which we have ever before heard, as having occurred in Marseilles, Toulon, and other towns. Turn we to Spain, we can trace no reliable history of ancient intemperance on a large scale, and, though there are ominous prodromata of deeper indulgence in the future, on the whole the Spaniards are upholding their traditional time-honored soberness. The attempt to fasten on ancient Greeks the character of general habits of intoxication, or the Spartan custom of exposing drunken helots to their gilded youth, is a fiasco, as their venerable practice was their mode of impressing on the youthful and impressionable the gross evils arising from excess, an object lesson of temperance in the training of the rising generation in sobriety and self-restraint.

If we turn our attention to Britain we read in the pages of Diodorus Siculus that the ancient Britons generally drank water, only on feast days indulging in the excessive drinking of comparatively mild fermented liquors made from honey, barley, and apples. Frequent intoxication was, speaking generally, practically unknown till after the more deeply indulging Anglo-Saxons, Danes, and Normans had settled in our country, they having brought their well-formed habits with them. For a long period thereafter the mass of the people drank only their comparatively weak mead and ale, the famous drinking bouts at feasts being usually confined to the clergy and aristocrats. Wine drinking was introduced from the continent of Europe, principally through our commercial and other intercourse with France and Spain till, still later, the practice of spirit drinking was introduced into Britain from Holland on the return of our soldiers who had gone to the assistance of the Dutch in the warlike struggles in the Netherlands. So far from our having been once drunken and being now sober, we have as a nation become drunken who were formerly temperate.

“ If we carefully observe, where do we witness any national or racial immunity to alcohol? I see nothing in the whole range of historical records to prove the existence of such an immunity. On the contrary, I see the once sober country of France now, according to recent calculations, the largest consumer proportionate with its populousness of intoxicating beverages. There was a time when the Anglo-Saxon race occupied the unenviable pre-eminence of the mightiest alcoholic prowess. To-day we are declared by Professor Jules Denis to have only the third place in the consumption of alcohol per head of the population. To what cause or causes are we indebted for this lessened indulgence? Not, verily, to an acquired immunity to alcohol, but to the great and growing number among us who entirely abstain from the use of all alcoholic intoxicants. We are indeed more susceptible than ever before to the witchery and domination of all narcotics. Our brain pressure is heavier in the struggle for bare existence; the greater demands on our nervous energy from the greater rapidity of modern life arising from telegraphs and telephones have rendered our brain a more ready prey to the magic power of alcohol and its congeners. Not to biological immunity, but to the wider diffusion of knowledge that alcohol is a poison to brain and to body, and to those altruistic motives which have inspired so many of our fellows to the habitual practice of abstinence from dangerous alcoholic liquors for the good of others do we owe our greater temperance as a people and as a race.

“ That heredity is a predominant factor in predisposing to inebriety, few scientific medical observers of the disease of inebriety or narcomania (a mania for intoxication by any narcotic) will care to deny. A long tale of the previous history of inebriate cases attests the truth of narcomaniacal transmission. Whether this fateful inheritance descends through the alcoholic alteration of the original cell (or its nucleus), which Weisman holds to be transmitted without change from its predecessor, as a continuous germ plasm, retaining through

succeeding generations the same elements and constitution; or whether, after Lamarek and Herbert Spencer, acquired characters are transmitted, the fact of inebriate heredity stands revealed in a very large proportion of instances. A fierce controversy has been and is being waged on these theories, especially on Weisman's hypothesis. How can the original cell, after it is surrounded by and contained in a living human body, be unaffected by the condition of the animate envelope which embraces it within? How can it grow and develop prior to the birth of the child, during the nine months of intra-uterine life, unmodified by the healthful or unhealthful condition of the mother? Yet what warrant have we for concluding that in all the successive stages of the developing growth of the pristine germ plasm, that living organism is absolutely independent of the blood condition, the good health or ill health of the womb and of the mother in which the growing living creature is housed and protected and cherished?

"On the peripheral nerve terminations of the grown man and woman, scientific medical post-mortem inspection and microscopical observation have shown us that alcohol has effected physical changes in very minute structures, as minute as those of the germ plasm. Why, then, should we not, as Dr. Henry Rayner thinks, hope one day, by the use of the microscope, with chemical reagents, to be able to detect the alterations, if any, which alcohol may produce on even the germ plasm?

"As has been very properly pointed out by Dr. Thomas Morton (*Inebriety Society Proceedings*, No. 42), the insane heredity in many inebriates, though it goes to prove that inebriety is a neurosis, does not prove the transmissibility of an acquired taste for alcohol. But though the disease of narcomania is a mental condition exhibiting a powerful tendency or strong impulse to intoxication on the application of an existing cause. I have seen a few cases of children, male and female, in which there had been noted a constant restlessness and uneasiness allayed for the moment only by sips of an

alcoholic intoxicant, accompanied by so great an inclination to drink more as to render the peremptory withdrawal of the beverage absolutely necessary to prevent drunkenness. The difficulty in such instances is to eliminate the possible alcoholic poisoning of the unborn babe by the drinking of the mother while bearing and nursing the child. An acquired taste for alcohol is one thing, but the abnormal pathological mental state which I have ventured to designate 'inebriety' and 'narcomania,' is another thing, the latter being the diseased mental state which we see so often descending from parent or parents to child.

"So much for the possibility and probability of alcohol affecting the germ plasm through the alcoholic disturbing, disordering, and poisoning of the blood, tissues, and functions of the fertilized mother. As A. K. Cherril remarks, Weismann himself concedes that appearances are in favor of the inheritance of acquired characters. We, as skilled observers, have ever before us in a prolonged experience of medical attendance on families for a generation or more, the appearance of parental diseases reproduced in some of the immediate offspring, even in the earlier stages of sons' and daughters' existence. As with certain prominent features, characterizing either mother or father, or a blend of the features of both father and mother clearly displayed on the face of most of the children, so we are called upon to treat in the latter maladies for which we have had to treat one or both parents. We have to combat medically in the daughter unmistakable symptoms of the phthisical or scrofulous diathesis which the girl has clearly inherited from the mother who succumbed to one of these fell diseases. Why, now, are we able, by the aid of modern medical research, to oftener successfully overcome the transmitted abnormal tendency? Simply because we have learnt the lesson of heredity more accurately and intelligently, and we apply to the threatened young life every therapeutic antidote to the disease, the seeds of which we feel sure have been implanted in the youthful constitution. We add to this

counteraction of the disease every proper means of strengthening the tender system, that it may throw off and resist the insidious approaches of the hitherto latent affection.

“ Thus, as medical wagers of the battle against disease, we are ever confronted with what appeals to our scientific acumen and common sense, as clearly instances of the transmission of acquired characters. Neither of the deadly maladies could possibly, so far as we can see, have descended from the original germ plasm of the fertilized first woman, these diseases being of a lethal type.

“ Disease is not normal, but a departure from the pristine normal healthful condition of our first parents in the ‘ long ago.’ Neither can it be an evolution or effect of the process of natural selection; so that, in the first instance, it must have been acquired. Here, therefore, as we medical men have so often had to see the descendance of the various diseases, we have a proof of the transmission of acquired characters. We have an apt and all too prevalent an example of this in the history of inebriates. In some three thousand cases, I have traced a genealogy of either inebriety or insanity as a preceding mental defect, in just over one-half of these cases; and many other medical authorities (such as my friend, Dr. T. D. Crothers of Hartford, Connecticut, and the records of the Fort Hamilton, American, and the Dalrymple, English, hospitals for the treatment of the disease of inebriety) have had a similar experience. The greatest transmission of narcomania has been from inebriate parentage (single or double), but from atavistic and collateral relatives and progenitors there has also been a substantial proportion. So overwhelming have been these inebriate manifestations of inheritance, apart from the long and expensive family trees of inebriety of the Jukes family in America and the Phulltain family in Scotland, that I am not at liberty to doubt the reality of this transmission any more than I am at liberty to dispute my own existence. Yet no one will deny that the overwhelming morbid drink impulse, the intoxication mania, is an acquired character.”

ALCOHOLISM IN CHILDREN.

At a meeting of the New York Neurological Society, held on April 4th, Dr. George W. Jacoby presented a little boy, four years and a half old, exhibiting symptoms which in the adult would at once lead to a diagnosis of alcoholic paralysis. In spite of the tender age of the patient this case was indeed one of alcoholic paralysis. When the child was first seen, on February 20th, it was stated that he had been well up to four weeks previously, at which time he had had severe colic without vomiting or constipation. Then the left knee joint had become swollen. Eight days previously he had been noticed to be unsteady in walking. It was found that the boy had received from a half to a full tumblerful of beer daily ever since the age of six months. Examination revealed extensor paralysis of the hands and legs, with a reaction of degeneration in all the muscles. The extensors of the thighs were unaffected, and there was no sensory disturbance. The speaker quoted some recent statistics regarding the habitual use of alcohol in a large German city. The municipal authorities had undertaken an investigation among the school children, and had found that, of a hundred children, sixteen drank no milk. Twenty-five per cent. of the children had never tasted brandy, but had habitually drunk beer or wine. Eight per cent. had received their daily portion of brandy, "to make them strong." He thought there was an almost equally large percentage of children among the German and Irish population here who were habitually given alcoholic drinks. This case, he said, emphasized the cumulative effect of small doses of a poison long continued.

Dr. William M. Leszynsky said that eight or nine years ago he had reported a typical case of multiple neuritis occurring in a child, about six years of age, who had been given beer and whisky by its parents, in order to make it strong. He agreed thoroughly with Dr. Jacoby regarding the prevalence of this vicious habit in this country.

Dr. Joseph Collins said that he had had two such cases under observation within the last two years. One of the patients, a child of seven years, was now passing through the second attack. This child had been in the habit of drinking beer. He had not completely recovered his muscular power when the second attack came on. The speaker had been impressed with a phenomenon presented by all the cases that he had seen, and it was present in the case just exhibited, namely the remarkable pallor of the cutaneous surface as compared with the redness of the mucous membranes. In this connection, he remarked, it was interesting to note that Hughlings Jackson had recently recorded himself again in favor of treating chorea entirely by the use of port wine.

The president, Dr. Frederick Peterson, remarked that it was very unusual for an alcoholic neuritis to exist without sensory symptoms.

Dr. Jacoby said that there was intense tenderness over the nerve trunks in his case, but no general hyperæsthesia of the skin. — *N. Y. Medical Journal.*

CLIMATE ON DELETERIOUS EFFECTS OF ALCOHOL.

Professor J. A. Sikorsky publishes some surprising statistics in regard to the differences observed between the southern and northern provinces of Russia in the number of fatal accidents due to abuse of alcohol. Averaging fifteen to twenty-two per thousand inhabitants in the south, they range from seventy to one hundred and ten in the north, although the consumption is almost a liter less per capita. These statistics are particularly valuable for comparison, as the alcohol is universally taken in the same form, brandy. He draws the conclusion that external cold increases the toxic effects of alcohol by tripling the chances of intoxication.—*Semaine Méd.*

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The "New Voice" has become a most attractive family paper which is fast winning a place in homes and firesides of the best people in the country.

We always feel grateful for the weekly visits of the *Scientific American*. So many new facts are coming out which are recorded here, giving a rare interest to each issue. Munn & Co., of New York, are the publishers.

The *Homiletic Review* of Funk & Wagnalls is a most excellent magazine. The papers are very stimulating and helpful to all readers.

THE HISTORY OF THE FIRST INEBRIATE ASYLUM IN THE WORLD, at Binghamton, N. Y. By Dr. J. E. Turner, the founder. Also a sketch of the projection of the Woman's National Hospital.

This large bound volume of five hundred pages is a graphic story of the projection and organization of the first asylum in the world, and its trials and difficulties. This work is of most absorbing interest to all students of inebriety, and should be in the library of every home and asylum in the land. We have recently bought from the publisher the last of the edition, and as the book is out of print these few volumes will be very rare in the near future. It is a large, cloth-bound volume, well illustrated. Copies will be sent from this office for sixty cents, postpaid.

NERVOUS AND MENTAL DISEASES. By Archibald Church, M.D., Professor of Clinical Neurology and of Mental Diseases and Medical Jurisprudence in the Northwestern University Medical School, etc., and Frederick Peterson, M.D., Clinical Professor of Mental Diseases in the Woman's

Medical College, etc., New York. 305 illustrations. Price, cloth (net), \$5.00. W. B. Saunders, Philadelphia.

In many respects this is one of the best works on this subject which has appeared for a long time. Some of the chapters are almost models of clear, condensed presentations of the best known facts on the subject. The arrangements of topics are very clear and practical. Chapter I deals with The Anamnesis, followed by the General Physical Diagnosis. Then the Muscular System, Trophic Conditions, Electrical and Sensory Conditions are followed by the Special Senses. Part II takes up the Cerebral Meninges and Cranial Nerves. Part III considers the Brain Proper, while Part IV treats of the Spinal Meninges and Spinal Nerves, and Part V of the diseases of the cord proper. Part VI embraces Diseases of the General Nervous System with Known Anatomical Basis, and Part VII the same without known anatomical basis. Part VIII considers Symptomatic Disorders. This portion of the book ends with short article on Hypnotism, which closes thus: "Suggestion, however, is a mighty aid to the physician, and without producing hypnosis, positive and intelligent assertions can accomplish all that is likely to be done by hypnotism short of the somnambulistic stage. A fair realization of the part suggestion plays in therapeutics is one of the recent achievements of the most progressive medical minds."

Mental diseases is treated by Dr. Peterson. The etiology and symptomatology of insanity are given a very clear setting, and much stress is laid on diagnosis and exact methods of examination and treatment.

To the general practitioner this is the best volume which he could have in his library on these topics. To a student, it is a very satisfactory work. We commend it most heartily.

WHAT SHALL WE DRINK? A physician's study of the alcoholic question. By Dr. John Madden, Professor

of Physiology in the Wisconsin College of Physicians and Surgeons.

“The more concentrated the alcoholic liquor ingested, the more intense the inflammation of tissue. At the same time an equal quantity of the potable alcohols will sooner exhibit their characteristic symptoms if largely diluted with water.”—*Dujardin-Beaumez and Audige.*

“Nothing from a physician’s standpoint is falser than to think that the evil influence of alcohol is lessened through the increased substitution of beer for the stronger alcoholic drinks.”—*Dr. von Strumpell, Milwaukee Press of Owen & Weihbrecht Co., 1899.*

This book of two hundred and twenty-five pages is written for the purpose of grouping the general facts (now well authenticated) concerning alcohol and inebriety for the physician and intelligent laymen so as to form an accurate basis for farther and more extensive studies. The following titles of the table of contents give one a good idea of the book:

Historical; the constituents of alcoholic beverages; the food value of alcoholic beverages; alcohol as a stimulant; the effects of alcohol upon digestion and assimilation; the general pathology of alcoholism; alcoholic heart diseases; alcoholic irritation of other organs; effects of alcohol upon nerve tissue; the influence of alcohol upon embryonic tissue and heredity; alcohol as a factor in the production of insanity; the attitude of the medical profession toward alcohol; who become drunkards, and why; what is inebriety; intermittent or periodic inebriety; constant or habitual inebriety; popular fallacies regarding alcoholic beverages; shall the physician cease to prescribe alcohol; effects of alcohol on civilization; what is the best means of combating the alcohol evil.

Many of these chapters are very clear and well written. The historical grouping of the use of alcohol in the past is very full and interesting, and many of the statements are new to the literature of the subject.

Altogether this work is a very excellent contribution to the literature of inebriety, and will be welcomed by all, both specialist and layman. The spread of such works are of inestimable value for the promotion of correct views on inebriety. Copies of this work can be had of the author.

THE VITAL RESOURCES CONTRIBUTING TO CAPACITY, HEALTH, AND LONGEVITY; INCLUDING ALSO THE GREAT LAW OF THE EVOLUTION AND PROGRESSION OF THE HUMAN SPECIES. By Jerome Kidder, M.D., New York. Published by the author, 820 Broadway, 1878.

This work contains a great variety of most suggestive illustrations on double personality, heredity, maternal impressions, mind over body, psychology, and latent qualities of the brain and body. The conclusions which the author draws from these facts are suggestive, if not always conclusive. One central fact is made very clear, that all these phenomena of mind and body are only the operations of fixed laws, which, although unknown, move on with absolute certainty. As a contribution to this great truth this work is most valuable. To all students of these psychological topics this work is very useful and helpful and will fill a place not occupied by any other book at present. Copies can be had of the author, New York city.

MEXICO, OLD AND NEW; A WONDER LAND.

By Rev. Dr. S. H. McColleston, Marlboro, N. H. Universalist Publishing House, Boston, 1897.

This is a most charming volume of travel in Mexico. The author is a most genial, entertaining observer with a rare, fascinating, descriptive style, combining narrative, moralizing, history, philanthropy, and bright humor. This is one of the few books which must be read without stopping. It is a rare treat to travel with such a guide in his work, and one feels better for the experience. Dr. McColleston is an author of sev-

eral works of travel of equal interest, which are very highly prized, and he is undoubtedly one of the finest writers of travels in this country.

JUVENILE OFFENDERS. By Wm. Douglas Morrison, Editor of *Crime and Its Causes*, *The Jews in Rome*, etc. New York: D. Appleton & Co. 1897. 320. Price, cloth \$1.50.

The study of the born criminal cannot be very well pursued without a thorough reading of this present volume. Perhaps nothing has been written upon the subject of crime in youth which has attracted so much attention as this little book of Dr. Morrison's, and certainly nothing has been said relative to the treatment of juvenile offenders and the employments of methods looking to the transformation of the young criminal into a useful citizen as valuable as the present volume. If anything is to be done for the criminal class the work must be done while the child is young, for if criminal habits can be abstained from in youth, as stated by the author, the individual is not likely to take up crime as a trade later in life. We commend the work for careful reading.

In a very able address on state medicine before the American Medical Association at Columbus, by Dr. D. R. Brower of Chicago, occurs the following passages:

"An important factor in the cause of crime is intemperance. Fully fifty per cent. of the criminals arrested in Chicago are inebriates, and the police reports of New York show about the same proportion. Ferri has shown beyond question that in France crimes increase and decrease with the more or less abundant vintage, and we may safely attribute at least some of the increase of criminality and pauperism in the United States to the increase of intemperance; and it may be estimated that alcoholics are the direct or indirect cause of probably seventy-five per cent. of all crime committed.

Editorial.

OBSESSIONS AND MORBID IMPULSES IN INEBRIETY.

The uncertainty and extreme variability of the alcoholic impulse has been a mystery to many persons. Why do persons previously temperate drink to intoxication on the eve of most important events, such as death or marriage, success or failure, or at times when the best judgment and brain power are required? Why is the drink obsession so dominant at these critical periods, and dormant or unnoticed at other times? Why should it appear at the most inopportune moments, and when least expected? Why should it occur suddenly without the slightest apparent exciting causes?

These questions have been puzzling, and are usually explained as moral lapses or the dominance of an evil spirit. Usually they occur in persons of neurotic, unstable, nervous organizations; persons who have previously used spirits, and are abstainers, and neurasthenics, and those of enfeebled organization and mental control.

Commonly they are seen in abstaining inebriates or moderate drinkers, and in those who are emphatic in their assertions to never use spirits again. In these cases the sudden or gradual possession of an idea to use spirits crowds out every other thought and question of reason and judgment. This is not always a dipsomaniac impulse, but the presence of an idea which grows slowly or quickly on a background of reason and facts to justify its presence.

The former is a delirious impulse which grows more imperative and dominating with opposition, the latter is a reasoning, imperative idea which is not always present, but intrudes

unexpectedly and remains persistently, and is under the control of the reason in a large degree. These occur often in abstainers, who have previously drunk but are now temperate. The idea of the need or great temporary advantage from the use of spirits will come into the mind and grow from opposition and specious reasoning. It may be overcome by the judgment for a time, but will come back on every occasion and gather reasons to sustain its materialization. The mind divides into two opposing parties, one calling for the use of spirits, the other objecting, and this controversy goes on, sometimes very intense and painful, then subsiding. After a time one or the other triumphs, and the drink impulse is restrained or gratified. The higher reason is intensely depressed, if the reason wins a degree of exultation with trepidation is apparent. These internal conflicts with the drink obsessions and impulses are largely dependent on some physical state which can often be known and broken up. A cathartic, emetic, or shower bath, or sharp exercise, or anything to produce a revulsion, seems to overcome this idea for a time. This is the explanation of many of the remarkable cases of cure, which seem to come from some powerful medicines. But unfortunately they are only the temporary cessation of an impulse which will return sooner or later. This obsession to use spirits is built up and encouraged by the arts of the retailer, who arranges fluids and bottles to stimulate the sight, taste, and smell. All unconsciously they use psychological means to stimulate the drink impulse. In many cases the contagion of company and surroundings are most powerful favoring causes and evils for the growth of this obsession. In some cases the pronounced anæsthetic action of spirits is so grateful and leaves so permanent an impression that the desire to repeat it is always present.

Dr. Legrain says the symptoms of depression are often almost absent, especially in patients of weak intellect. In these individuals the prodromic stage often lasts a long time, far beyond the limits indicated, and the syndrome has its real origin

in a series of mental conditions, which lead on to the impulse, and the suddenness of the latter is therefore only apparent. The preparatory conditions are these: (1) The nerve-endings in the mucous-membrane of the digestive apparatus have on one occasion been impressed by contact with some stimulant. (2) These impressions are retained by the mind in the form of well-defined images. (3) The properties of the liquor absorbed have produced psychical satisfaction or some special sensation. (4) The sensation is recalled and sudden appetite awakened without any real need. (5) The desire to reproduce the sensation becomes imperious and returns under the form of obsession. (6) The obsession becomes impulse, thus completing the syndrome.

In certain neuropathic persons this imperative idea seems to be active in fostering opposite thoughts and desires. A vivid and strong statement of the evils of using spirits creates an impulse to procure them. The more vivid the evils are described the stronger the desire is to test them. Often the most solemn promises to abstain give new force to the obsession to try them. In a temperance experience meeting this battle with the drink impulse is painfully conscious in the delirious statements and emotionalism of the speaker. Of course, some form of mental enfeeblement furnishes the soil, and in many cases an anaesthetic or half imbecile state prevents its recognition only in a general longing for some condition of relief. When the inebriety is recurrent these imperative ideas appear either openly or masked, and may be manifest in a great variety of emotional irritable states that are only appeased when spirits are used. These imperative ideas and obsessions are very common, and not recognized even by the persons themselves, only as cravings and longings which are partially under control. In some cases they are painful struggles because concealed, and in others possess the man so completely as to destroy all consciousness of their import.

INEBRIATE ASYLUMS.

America has the largest number of homes and asylums for the treatment of inebriates in the world. England has the next largest number, and Switzerland is third in the list. In England all inebriate homes and asylums are under government inspection by an official called inspector of inebriate asylums. He visits and reports yearly to the government. In Switzerland all such homes are under local laws of the town or canton, and receive government inspection.

In this country there is no restriction, inspection, or control of any kind, except in a few cases where the state or county has organized such asylums. Here any one can open an asylum at any place and at any time, and for any kind of treatment. Doctors of every degree, clergymen, reformers, hotel and saloon-keepers, and men with and without reputation, charlatans, and inebriates of every degree, and even criminals, have a free sway to open homes and asylums for the care and treatment of inebriates. It is literally a great "free race" for the cure of inebriates, without any responsibility or accountability to law, to public sentiment, or even to inebriates themselves. Inebriates who claim to be restored boldly assume superior knowledge and expertness in the treatment. They assert that the subsidence of the drink impulse is a cure, and remedies given which are followed by a distaste for spirits are specific. It is also asserted and believed by many that any one can successfully treat inebriety in any place, if they only have the proper drugs. At one time there were over a hundred homes in this country for the cure of inebriates by secret remedies and so-called specifics. Now there are less than half that number, and these are steadily declining. The number of legitimate asylums in this country is not far from thirty, many of which relieve cases of mild insanity and nervous disease. All are under careful management by men of character, and most of them have a legal standing and government inspection. In all other asylums the practical principle is chemical re-

straint, applied to all alike, concealed with pretentious deception, and expectations which can never be realized. The results of chemical restraint applied indiscriminately on the assumption that all cases are the same, are disastrous. In the same way the indiscriminate opening of asylums by anyone on any theory, and by any drugs, for the personal treatment of the inebriates, is equally dangerous. The inebriate and his friends deserve at least some consideration, and should be protected from becoming worse in their efforts to recover. On the Continent no one can open a home for the treatment of any disease by secret remedies. All secret remedies must secure a government license to use them, and the formula be put on file at the government office. In England no one can open an asylum without license, and come under some legal inspection. It is a curious fact that in America, where the first scientific treatment for inebriety in asylums began, and has for years been continually on the most advanced lines, there should be such a confusion of theory and practice. Public sentiment has been strangely indifferent, and welcomed the quack and charlatan, and permitted anyone to engage in this treatment without the slightest restriction or measure of responsibility to any one. For years the Society for the Study of Inebriety and its journal have been working to secure a full legal recognition of the disease of inebriety and its proper treatment in legitimate homes and asylums. While fully recognizing the wide diversity of opinions and therapeutic measures used, they have constantly urged that inebriety and its treatment in asylums should be free from secrecy and deception. Also that homes for its treatment should be under some restrictions and responsibility, and conducted by reputable men, open and free to public scrutiny. The present want of recognition or control of the efforts to cure inebriates is at least lamentable, especially where inebriety is studied on the most advanced lines, and is so well known. The treatment of inebriety should be raised to the same level of that of any

other disease, and all homes and physicians who attempt this work should be above deception, pretense, or suspicion.

THE INTERNATIONAL CONGRESS AGAINST THE
ABUSE OF ALCOHOL.

The meeting of this Congress in Paris from the 4th to the 9th of April was in many respects the most remarkable gathering of the closing years of the century. In numbers over twelve hundred were registered, and four or five hundred more attended as interested spectators. Over half of this number were professional men, of which one hundred were physicians, the remainder were lawyers, teachers, and clergymen. The others were government officials, reformers, philanthropists, and interested laymen. The topics discussed were very general, ranging all the way from the most passionate appeals and terrifying descriptions of the evils of alcohol to the most critical analysis of their physiological action and the most exhaustive balancing of figures and reports of influence of spirits on the social, economic, and hygienic welfare of the race.

A number of very eminent men presided in the general and sectional meetings, and the city of Paris and French government recognized the Congress in a public reception and excursion, and other favors.

The lay press were mildly sympathetic and reported the proceedings briefly. The medical press made brief references, and altogether the congress and its work seemed to have awakened a wondering interest in the public mind. It was the impression that little new scientifically was brought out in this congress, but many old facts received a new confirmation and setting, and the anaesthetic action of alcohol was reasserted with more emphasis than ever. The spirit and enthusiasm of the congress was intense and revolutionary, and in this respect it was remarkable as an unmistakable indication of a change

in the current beliefs of the value of alcohol, both as a beverage and medicine. The disease of inebriety and asylums for the treatment and cure was the subject of several papers of considerable interest. The influence of climate on the poisonous action of alcohol was the theme of one paper. The influence of food in the causation and the relation of tuberculosis to inebriety was discussed in several papers. Most of the addresses and papers seemed to concentrate on the value of total abstinence and the dangerous action of alcohol on the organism. Very little was offered in the matter of treatment, even by the physicians. But the various anti-alcoholic societies' delegates urged the value of their work with great enthusiasm. The devotion and contagious earnestness manifest in all the sections of this congress, with eagerness to learn everything new, was a most significant sign of a new spirit of inquiry which will change the theories of the past concerning alcohol and its use, and demand the evidence on which they are based. This was the seventh biennial meeting of leading men and women of Europe to discuss the evils from alcohol. From a small gathering at first, up to this monster international congress with delegates from nearly every country in the world, the growth has been distinct and rapid. The scientific spirit of inquiry has begun in Europe, and alcohol and inebriety, with all its attending evils, can not be concealed longer by theory, prestige, and custom. Another meeting was announced to take place at Berlin in June, 1901, and already preparations have begun for this gathering.

The awakening of the beer and wine drinking countries of Europe to the dangers of these drinks as beverages and to the poisonous action of alcohol on the body is a most startling sign of revolution and evolution. This great gathering of the middle and upper classes to discuss this subject is the unmistakable evidence. The few pioneers in America and England rejoice, and the new century will open with a rapidly accumulating army of research along the frontiers of this great impending evil of alcohol, and its influence on the race.

Dr. Shepard's report of the congress in this issue will be read with much interest.

DR. NORMAN KERR.

The death of Dr. Kerr at Hastings, Eng., May 30th, will be most keenly regretted by every student of inebriety in the world. Dr. Kerr, through his writings and most persistent efforts, had become known as the pioneer and leading authority on inebriety in the world of science. His books and numerous pamphlets have literally opened up a new field of science and made it possible to understand and correct evils that were unknown before. To those of us who knew him personally his death will be a sad bereavement, and his memory will remain vivid always. A biographical sketch of his life will appear in this Journal at a later date.

The following resolutions were prepared by a special committee of the "American Association for the Study and Cure of Inebriety, June 5, 1899:

WHEREAS, Almighty God, in his inscrutable providence, has seen fit to remove from this sphere of earthly activity our friend and associate, Dr. Norman Kerr;

Therefore, be it Resolved, That while we bow with humble submission to the divine will, we recognize the fact that a really great man has been removed from our midst in the height of his usefulness and influence.

Resolved, That on the death of our associate and friend both science and medicine have lost a pioneer leader, the study of inebriety a close and observant student, and the great drink problem one of the leading original workers of the age.

Resolved, That in his character and steadfast continuance and fidelity to the principles he advocated Dr. Kerr has left a lasting impression on the age in which he lived, correcting error and giving enlarged scientific and humanitarian views to the cause to which he devoted his personal influence, his professional talent, and his life.

Resolved, That to his family and friends, and "The Society for the Study of Inebriety" of London, of which he was for so many years the active and honored president, we extend our sincere sympathy in the irreparable loss which we have all sustained.

Resolved, That these resolutions be printed in the next issue of THE JOURNAL OF INEBRIETY, the organ of this association, and that a copy of said resolutions, properly engrossed, be sent to the family of the deceased.

The appointment of Dr. R. Welsh Branthwaite to the office of government inspector of inebriate asylums is a very pleasant recognition of one who has become a leader and scientific student of inebriety. Dr. Branthwaite has been the well-known superintendent of the Dalrymple Home from its organization many years ago, and is particularly fitted for this appointment.

Error dies hard and slowly, and a frantic crowd of mourners stand round watching for some signs of returning life.

Professor Atwater's reported discovery, that small doses of alcohol are not injurious, thrills with joy the hearts of the mourners, who eagerly give it the widest publicity possible.

Years ago, Dr. Richardson, of London, announced as the result of a long series of exact experiments, that alcohol in both large and small doses, was a depressant and anaesthetic. This was received in silence, and from that time to the present a large number of scientific investigators have confirmed and added to these statements a great variety of facts, from laboratory researches and clinical experiences, gathered from all over the world. Yet there is rarely any mention made of it in the public press. A belated physician has recently discovered that there is no such disease as inebriety, that it is only a habit always under the control of the will. The press gives the

widest publicity to this statement, which is echoed with joy and satisfaction by many persons. The experiments and studies of a quarter of a century are put aside as unworthy compared with this statement.

Thus error dies hard, and the mourners go about the streets in tearful expectation that their favorite theories will yet live, and not die and be forgotten.

Alcoholism is a very important and difficult etiological factor to dispose of. The saloon is such a powerful factor in our political system that it seems to be impossible to have legislators enact laws that will regulate properly this great traffic. The way to accomplish positive results is for physicians to spread information among the people as to the baneful influence of intemperance, and so educate the old and young as to the powerful influence of this great factor in politics, so that it may be neutralized. *Legislation is needed for inebriates* — authority to place them in prolonged confinement, during which they may undergo such treatment as may be necessary for their cure.

The South seems to be in greater danger from the cocaine habit than the North, and the public's attention has been directed to the danger from the fact that druggists were selling large quantities of cocaine to the negroes done up in five and ten cent packages, and as a result crime was very much on the increase. This has caused two states, Louisiana and Texas, to enact laws regulating the sale of cocaine, which would be a wise example to follow in every state; then, with the co-operation of the physicians, it would be a comparatively easy thing to check this growing evil.—*Charlotte Medical Journal.*

Clinical Notes and Comments.

ALCOHOL NEUROSIS.

BY J. STRACHAN, M.D.

It must be borne in upon the mind of everyone who has any lengthened experience in medical practice that there is a disease of alcoholic intemperance — that there are men and women who have no more power to resist “drinking to excess” if they “drink” at all, than they have to prevent the symptoms and the course of any other disease, the poison of which has entered and is working in the blood.

This neurotic intemperance possesses several features which serve to distinguish it from the common vice of occasional and deliberate drunkenness, and it is of great importance that the distinction should be fully recognized.

1. Whereas the *vice*, once so prevalent and even fashionable among the men of all classes, is now all but confined to what are called the lower orders, and is being driven ever lower in the social scale, the *disease* is confined to no class and to neither sex, and instead of diminishing seems decidedly on the increase, as is shown not only by the number of cases to be seen in every community, but also by the increasing number of “retreats” and homes for inebriates, and the more and more pressing calls for legislative restraint for those so afflicted.

2. While the vice of drunkenness is very much a matter of occasion and opportunity, and is perfectly under control when a sufficiently strong motive is operative, the disease is to a great extent periodic in its onset, and quite unaccountable in its course. The occasional drunkard is, as a rule, a habitual drinker, and indulges to excess only on occasions of conviv-

iality; the neuro-inebriate may have long intervals when he has no desire for and does not take stimulants, but has periods of resistless craving which run a more or less definite course. As the disease progresses, however, such intervals tend to become shorter, and the intoxication more or less continuous, culminating at times in delirium tremens or convulsions.

3. The occasional drunkard seeks companionship in his cups, and is generally more or less noisy and uproarious in his intoxication, but the victim of this disease inclines rather to shrink from observation, and is generally quiet and morose under the influence of alcohol.

The craving is for relief from suffering. Persons presenting the alcohol neurosis are very susceptible to the alcoholic stimulus; a comparatively small amount produces exhilaration. This is followed by reaction amounting to an extreme degree of nervous depression. A repetition of the stimulus gives immediate relief, but at the expense of further reaction and still greater depression and more urgent craving for relief. More and more is required to keep off, as it has been expressed by a sufferer, "the horror of getting sober." Here it is, the first glass of whisky, which does not carry with it any moral delinquency, and according to the usual drinking customs of the country, is very difficult to avoid, which does the mischief. The attack usually culminates in severe gastric irritation and complete nervous prostration, perhaps delirium tremens, on recovery from which the craving is found to have passed off, and the patient is full of good resolutions. For a longer or shorter time all goes well, and there is not even any desire for stimulants. Then the patient — he still is a patient, although he does not know it — feeling himself stronger, or feeling dull and low-spirited, for such neurotics are subject to fits of depression quite apart from the use of stimulants and are easily upset by business worries, etc., thinks that a glass will set him up and let him get on with his work. An attack follows and runs its course as certainly as an attack of fever when the poison enters the system. — *British Medical Journal*.

SIGHT-SEER'S HEADACHE.

There are, no doubt, very many important uses for antikamnia, of which physicians as a rule may be uninformed. A five-grain antikamnia tablet prescribed for patients before starting on an outing, and this includes tourists, picnickers, bicyclers, and, in fact, anybody who is out in the sun and air all day, will entirely prevent that demoralizing headache which frequently mars the pleasure of such an occasion. This applies equally to women on shopping tours, and especially to those who invariably come home cross and out of sorts, with a wretched "sight-seer's headache." The nervous headache and irritable condition of the busy business man is prevented by the timely use of a ten-grain dose. Every bicycle rider, after a hard run, should take two five-grain tablets on going to bed. In the morning he will awake minus the usual muscular pains, aches, and soreness. As a cure and preventive of the pains peculiar to women at time of period, antikamnia is unequalled and unaccompanied by habit or unpleasant after-effect. If the pain is over the lower border of the liver or lower part of the stomach, or, in short, be it headache, sideache, backache, or pain of any other description caused by suppressed or irregular menstruation, it will yield to two five-grain tablets. This dose may be repeated in an hour or two, if needed.

W. A. Baker, M.D., Clark's Mills, Pa., says: "I have had occasion to try *Celerina*, and am highly pleased with the results. I have used it with marked success in nervous prostration. A lady, 64 years of age, of nervous temperament, was stricken down with congestion of the right lung. After the congestion disappeared, her nervous system failed to recover, resulting in prostration. After trying several remedies, I commenced using *Celerina* and gave teaspoonful doses every six hours, with steady improvement, until restored to normal condition."

The drug house of G. F. Harvey Co., of Saratoga Springs, has a most enviable reputation for placing on the market some of the most excellent preparations of standard drugs. The *Rickine* is a preparation which has attracted much attention lately.

The strong probability is that the *Fellows' Syrup of Hypophosphites* is one of the most valuable proprietary and legitimate drug prescriptions on the market. Its enormous use is a certain indication of its popularity.

We have always given *Horsford's Acid Phosphate* a very high place in our list of nerve remedies, and found it reliable and of great value in many cases.

Listerine is a household remedy, and is used very generally in the West and South. Its value is well attested in innumerable cases.

Wheeler's Tissue Phosphates has a great popularity in the New England States, and is a very useful remedy.

We have always found *Maltryme* with *Hypophosphates* an excellent remedy for the poison cases of alcohol and opium. It is in many respects equal to the so-called "Gold cures" so highly praised. It is a far more safe and rational therapeutic combination than other more pretentious drugs. We urge our friends to try it as a home remedy. It will be found useful.

In inebriety it is often a question of good blood, and how to restore the faulty states of the blood cells. *Bovinine* answers this most satisfactorily. In two days its effects are apparent, and in a week it has worked marvels in every respect. *Bovinine* is a rare tonic in many of the toxic cases from alcohol, and should be used freely.

Pond's Extract is a standard remedy which has won a place in the homes of half the nation. Rivals and imitations have tried to divide the patronage but failed. The same remedy of our childhood days appears as usual, and, like the brook, "goes on forever."

The *Hudson Lithia Water* of Buffalo, N. Y., is one of the exact combinations that are a pleasure to give. It is a distilled water, so many grains of lithia and other salts to each gallon. No waters on the market are more perfect and pure. They make others and various mineral waters of exact and definite qualities that can be ordered with precision and certainty. We commend them most heartily.

Boston, Mass., Jan. 28, 1899.

Malt-Diastase Company,

1 Madison Ave., New York.

Gentlemen:

I have recently made tests upon some *Malt-extracts Plain* to determine the number of parts, by weight, of reducing sugars, that one part of the extract will produce from the starch within a given time, thus showing their comparative diastasic activity.

I purchased the samples in the open market, and the following result may be of interest to you.

The figures represent the number of grammes of reducing sugars (calculated in terms of *Maltose*) that one gramme of the extract forms, when in contact for 30 minutes with an excess of arrowroot starch paste, and are the average of two determinations.

0.3603,	. . .	A diastasic malt, plain.
4.4531,	. . .	A diastasic malt, plain.
6.2314,	. . .	<i>Maltzyme</i> , Plain.

Respectfully,

J. W. BAIRD, S.M., Ph.D., M.D.,

Professor of Analytical and Organic Chemistry.

Battle & Co., the famous chemists of St. Louis, have introduced a new chemical compound called *Ethol*. Its nature seems to be that of a special corrector of degenerate states of the fluids and tissues of the body. In carbuncles it has made a most profound impression. Dr. Creel of Central City, Ky., has reported a number of cases which have been most successfully treated by this drug. Other states of breaking down of tissue have been checked by this new drug. It is safe to predict that a most valuable preparation has been put on the market, especially coming from this firm.

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II. All such institutions organized and conducted in proper conformity with the laws of the several states in which they are located are entitled to representation in this association.

III. The active membership of this association is composed of physicians in good and regular standing who are actively connected with such institutions or who have been honorably retired from active service in connection therewith.

IV. Physicians not connected with such institutions, and members of boards of direction of such special hospitals, asylums, etc., are eligible as associate or lay members of this association upon payment of the dues of membership.

V. The object of the association is:

First, to promote the scientific study of alcoholic inebriety and kindred drug habits, and to encourage desirable and special legislation with reference to the care and control of alcoholic and other drug inebriates.

Second, to isolate the chronic pauper inebriate from the insane and criminal class, and secure the erection and maintenance by the several states of institutions for the segregation and special treatment of chronic pauper inebriates, and to incorporate farm colonies, or other forms of institutional relief, which shall combine medical care with proper occupation, judicious control, and discipline.

Third, to secure in all states the special supervision and inspection of all institutions for the care and control of inebriates or other drug habitués.

Fourth, to discourage and prevent all efforts to treat alcoholic inebriety or the opium or other drug habits with secret drugs and so-called specifics, and to prohibit the sale of all nostrums which claim to be absolute cures and which contain alcohol, opium or its alkaloids, or other pernicious and harmful drugs, or which contain substances which are inert and so are fraudulent impositions on the public.

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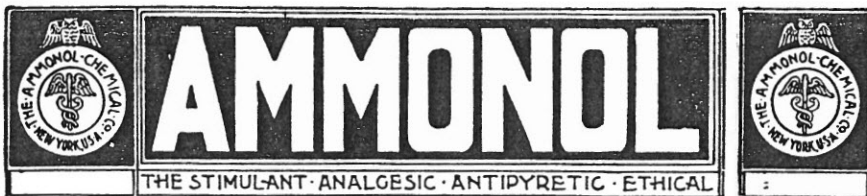
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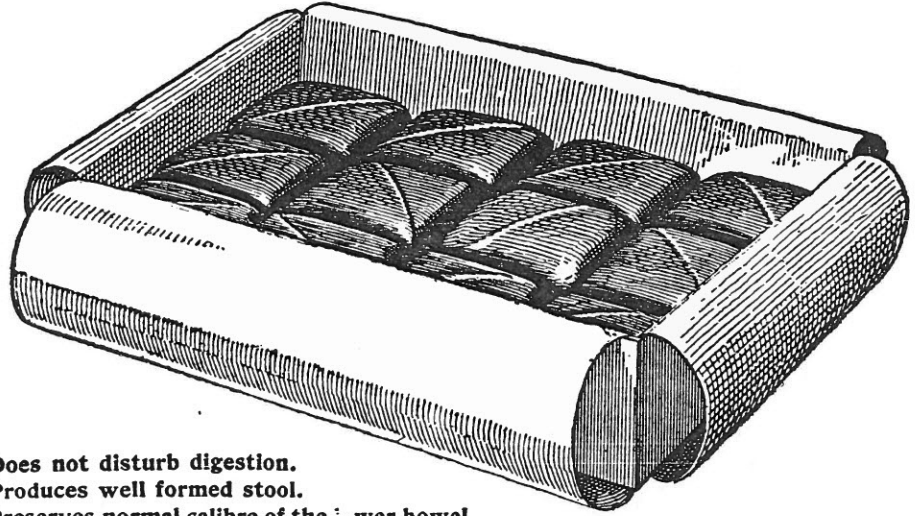
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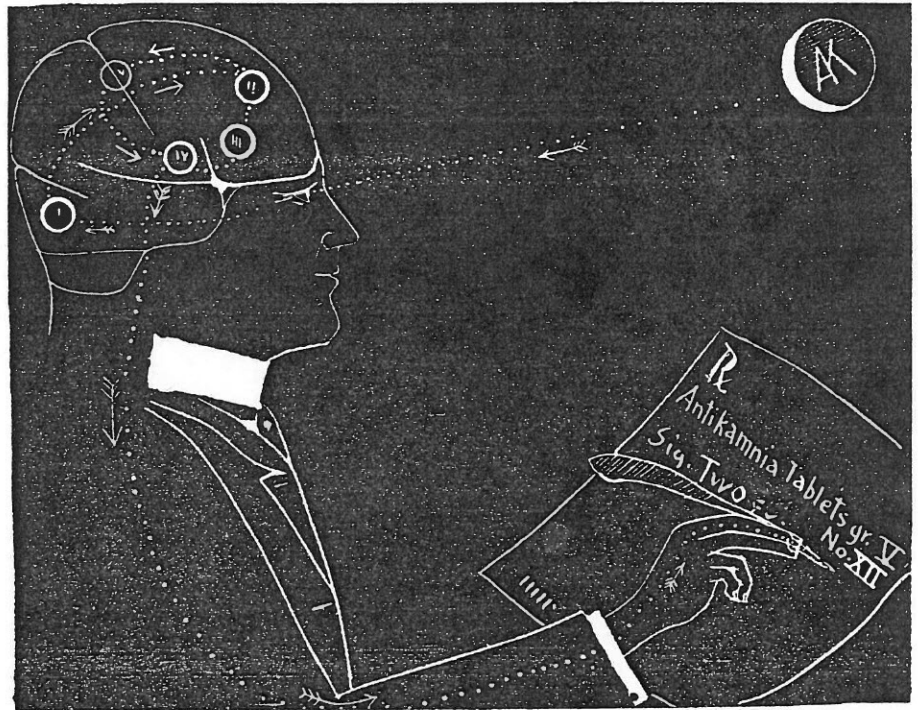
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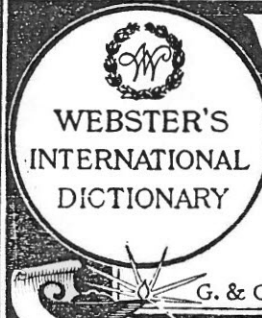
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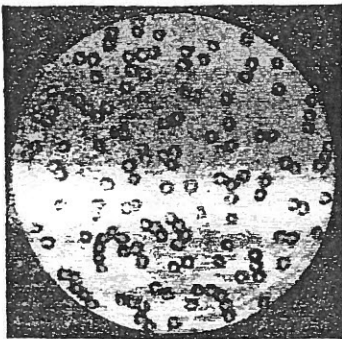
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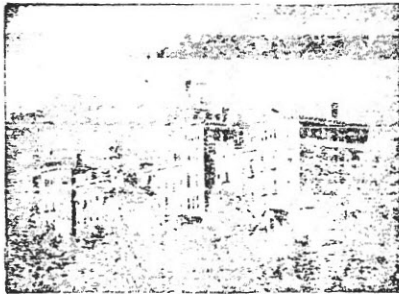
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