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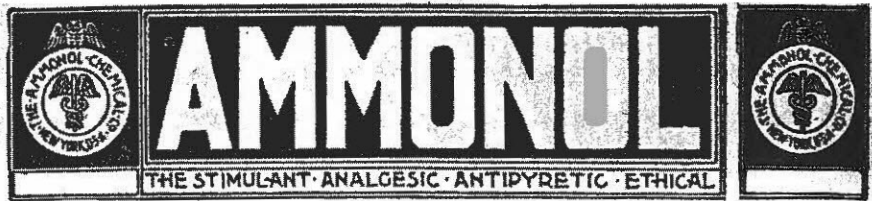
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A STUDY OF THE CAUSES AND NATURE OF
DIPSOMANIA.

BY P. C. REMONDINO, M.D., SAN DIEGO, CAL.

Prof. N. S. Davis gives the most appropriate history of a classic case of periodical dipsomania imaginable in his description of those uncontrollable recurring periodical spells of drunkenness that are the ruin of so many promising men, and the bane and source of so much misery, unhappiness, and humiliation to so many families. "During their period of drinking," observes Prof. Davis, "most of this class of patients give themselves up to unrestrained debauchery and vice, until their money is exhausted, or their stomachs refuse longer to tolerate the alcoholic drinks, when they stop as suddenly as the paroxysms commenced, and in two or three days return to their customary work with as much correctness and diligence after the usual interval as any other citizen. As the years pass by, in nearly all of these cases the intervals of sobriety become shorter, the periods of debauch recur more frequently, and are more liable to end in delirium tremens or permanent gastric, hepatic or renal disease; or, escaping these,

in the final development of alcoholic dementia. The most singular features presented in the history of these periodical drinkers are the recklessness of their periods of drinking while they last, and for the most part, the practice of total abstinence during the intervals. During the former, their mental emotions and illusions are such as prompt strongly to acts of impetuosity, and the indulgences of unprovoked jealousy, while in the interval the larger portion of them, at least, are chaste, upright, affectionate, and deeply humiliated by their previous conduct. And yet, despite their earnest resolutions and pledges, when the time comes round, the most trifling circumstances, often without the slightest apparent reason will cause them to plunge themselves into another debauch. Members of this class are to be found in all the ranks of society, and it has long been a mystery, not only to their friends, but to physicians and moralists as well, why men of this class — intelligent, refined, and eminently respectable as many of them are, at least in their early years — can continue to repeat such apparently causeless periods of revelry and disgrace, of the consequences of which they are as fully conscious during the interval."

Professional men of the best order of minds, as if to accentuate the relationship or continuity existing between insanity, crime, and genius, and that all departures from mediocrity give us a divergence from that which is strictly normal man, furnish some of the saddest and most striking examples of the combination of a high order of intelligence, refinement and respectability that are often found associated with periodical dipsomaniac outbreaks. Some of the recurring and most inveterate cases that have fallen under my observation have been bright and intelligent men, men mentally far above the ordinary, and endowed by nature and education with the highest ethical ideas concerning both morals and the requirements of society. One of my earliest cases was of a most peculiar nature. This was a middle-aged physician and a bachelor.

He was a highly-gifted man, mentally and morally, and had possessed as well as improved every opportunity for a thorough and most liberal education. Physically, he was all that he could wish, and otherwise than the periodical attacks of this affliction he was always in the enjoyment of the most excellent health. As above remarked, his was the most peculiar case that I have ever met, and his peculiarity resided in the manner he took to usher in one of these spells, and the very unique manner he took to make it a success. With him it was no accidental beginning, — his spells never began by any drinking; alcohol was no factor in his disease. The psychological processes that brought on the irresistible need for that oblivion and subsequent crisis that he found only in heavy drinking, came on slowly and from some obscure cause, and when fully under the influence of the spell, — a veritable mental aberration, — he would begin his preparations for a long and vehement debauch with all the secrecy of a conspirator and with the watchfulness, ingenuity, and irresistible impulses of a kleptomaniac. For days he would cautiously gather his stores of brandy, gin, and whiskey, or whatever other alcoholic beverage he could procure, for the coming event, and secrete his bottles in the most likely places to escape immediate detection. His hunting boots, hunting case, gun case, spaces in his bookcases in the rear of his books, the sleeves of his coat, spaces under or between his mattresses, and every conceivable hiding place were well stowed with bottles of the best and strongest liquors before he would allow himself to touch a drop. When all was ready, his spell of debauch would be inaugurated at nightfall. Being missed at his meals, and at his accustomed places by his friends, who always feared the cause of his disappearance, he would be found in his room in a glorious state of intoxication. He would walk rigidly with tensely rigid frame, hardly be able to articulate, and his eyes would have a wild, fixed, and unnatural stare, and seem to be more or less protruding. It was really pitiful to see this in-

telligent and proud man now attempt to act the considerate and courtly gentleman that he always was in his moments of intervals of strict sobriety. The search for his bottles would then begin, but he always managed to profit by past experiences, and have some new source of supply from some obscure reserve store hidden away elsewhere, and from this and what few small bottles would escape detection he would finish his spell, an ending that always came when his stomach refused longer to hold any liquor. A week of hard retchings, vomitings, stomach and headache followed, with desires to commit suicide, with continuing spells of deep contrition and self-reproaches, and when able to again take some food and stand on his feet he would depart for a couple of weeks recuperation, away from home and be himself until the occurrence of a new attack.

Another case, also a physician, would generally begin his debauched spell by attempting to regain a lost appetite or to improve a digestion impaired by over-professional work through some tincture of cinchona or other alcoholic tonic taken at a drug store. At times, so over-worked that he could no longer either eat or sleep, he always fancied that he could safely take a little of such stimulation to bridge him over and place him on his feet again. The results were always the same; the first dose so unnerved him mentally and physically, and so robbed him of resistance, that he would resort to a second, and then to a third, for the purpose of steadying himself. Then he was hopelessly gone, and he would take to whiskey with something like a frenzy. The length of the spell then depended entirely upon the rapidity with which he would either drink himself into a state of helpless stupor or upturn his stomach. There was no turning in the tide with him, no matter how drunk or partly sober he might be, until his stomach absolutely refused any more drink. Then followed days of intense neuralgic headache, gastralgia, heavings, contrition, and repentance. When himself again, he

would take a bath and clean shave, array himself in his best, indulge in the most moral reflections, read and moralize over Carpenter on the "Use and Abuse of Alcohol," and other such kindred works, and then prepare a most elaborate lecture on temperance, or rather on the benefit and needs of total abstinence, which he would deliver with great profundity and feeling before some local temperance or total abstinence association, and rejoin some temperance lodge, which would receive him as a brand saved from the burning. After this he would remain a most exemplary teetotaler until some new accident again hurled him from grace. This interval of strict sobriety and total abstinence would at times be some months, or even of one or two years' duration. On a few occasions his spells were inaugurated by a condition of mental depression or of moral discouragements due to domestic difficulties or professional worries. He had always entertained the highest opinion of moral and professional ethics, and the apparent success of the thieving Pecksniffs and the Uriah Heeps in the profession, as well as of the quackishly inclined, — in other words, the too common and too frequent triumph of the vicious over the too confiding and unsophisticated, — was more than he could bear at all times, and the resulting moral, depressing, philosophizing train of thoughts engendered would gradually land him in such a demoralized and pessimistic mental state that a debauched spell, inaugurated to raise his spirits, would be the only apparent escape or termination. Melancholia or physical depression were his banes.

In two other cases, both men of education and of far more than ordinary intelligence, the attacks would be brought on, not through any mental or physical weakness, overwork, or previous despondency, but through the influence of a peculiarly male hysterical condition of the whole nervous system, that prohibited the least mental or nervous excitement, as the latter was sure to terminate in a drunk. In both of these men, any weighty business transaction of any order, commit-

tee work on social or business lines, taking part in any great social or municipal event, were alike incentives that brought about that unfortunate condition of weariness of brain and nervous system from over-excitement that called for immediate stimulation.

In one of the above cases there would be an induced condition of mixed exaltation and depression, of grandiose ideas as to what he should do, suggest, or how he should act, and fears of not being able to carry out his ideas, or that some stupid co-worker would either interpose some asinine objection or spoil the work whenever engaged upon any mixed or unusual undertaking, such as leading or taking part in any public function. This would unnerve him, and to remedy the condition he would resort to some elixir of the valerianate of ammonia, or some other medicinal nervine as night would come, the fear of a restless night and a consequent shaky condition of his nerves on the following day, which would not enable him to appear properly, would drive him to indulge in more nervines and in an hypnotic, and then he was gone—literally gone; body, mind, and morals—as nothing but whisky, key, brandy, or champagne seemed to his idea to be able to restore the shattered equilibrium. From this on he would secrete himself in various places of refuge until found by his friends, who would take him to his room and watch over him until by a succession of relapses that gradually grew less severe, he would finally resume his mental and physical level and be himself again.

In the other case, as small an exciting affair as a prospective purchase, as that of a new carpet or any large household article, the selection of a new dinner service, or any larger transaction like the prospective purchase of a lot, were the one and all sufficient causes for the beginning of a mental and nervous shakiness, and for the start of a spell of debauchery that would probably last for months, as in this case there was not that vehement desire either to reach oblivion or to at once be

braced up by drink as in the companion case, but it was simply a slow and steady keeping up of a certain amount of steam pressure, as it were, without any particular aim in view. In forty-eight hours he would forget all about the unpurchased carpet or lot, and by morning his lungs, kidneys, and skin would always sufficiently work off the effects of the greatly superfluous amount of alcohol imbibed on the previous day, so as to prevent anything like a condition of continued stupidity. He would simply be uneasy, unsteady, and nervous, so as to require more steadying drink on the next day. During this drinking he would eat anything accessible, mostly cold eatables, raw meat, raw eggs, and fruits, with occasionally bread in large quantities. As to the liquor that he drank, that seemed immaterial. Any brand of beer was as welcome as either wine, whiskey, or brandy, although strong sherry wine was then his preference. A powerful and unaffected stomach was in this case his worst and finally fatal enemy as it enabled him to drink continuously for months.

Many of these cases of periodical dipsomania that belong to the above order — those in which there cannot be said to exist either a habit of drinking, or a love of any alcoholic beverage, or any habitual desire for stimulation — are highly emotional creatures, fully as emotional and fully as sympathetic and as easily aroused in their feelings as any of the southerly European races to which they rarely belong. A meeting with an intimate friend after a long absence, or a parting from such a one departing for a long voyage, or any unusual occurrence that may bring their emotions into active play, is apt to bring on that physical and psychological state of embrangement from which it is almost an impossibility for them to recover their normal poise without the intermediate resort to some stimulants. Such natures should well understand their disposition and physical and physiological weaknesses and realize that they can no more subject themselves to such trials in safety than you can bring flame and gun-cotton together with-

out a combustion, and depend wholly upon prophylactic precautions.

It is curious to note the retroactive effects of music upon the emotions, and the impulses as exemplified among different temperaments. Pathetic music will drive some to drink, and I have seen cases wherein the immediate individual emotional environments became so accentuated by the effect of this form of music as to bring on a sudden suicidal determination, just as the "Marseillaise" spurs all the latent belligerency of the French of the south into martial frenzy. As St. Augustine wisely observes, there are perils which we should not attempt to overcome, but wherein discretion is the better part of valor and where it is more prudent to flee. An emotional nature, which knows by experience that its poise cannot be disturbed without risks, should by all means avoid all causes of disturbance and not subject itself to any trials in which it will surely be vanquished, so that whatever the bard may say about the man who has no music in his soul, such natures had better avoid music that is not of the lightest order.

To the psychologist, there is nothing in the field of medicine that offers a wider or more interesting range for study, observation, or analytical comparisons than the subject of inebriety, a subject which need by no means be confined to the alcoholic variety of the disease, as any of the toxæmic diseases may, in more than one sense, fall in the same category as the victim of autotoxæmia, from whatever cause the latter condition may arise, may exhibit some of the abnormal psychological processes that are the characteristic attributes usually assigned to alcoholic inebriety. If our anatomical and physiological construction is so fearfully and wonderfully made that the slightest unbalancing may at times lead to the wrecking of the whole machinery, we should not overlook the fact — a subject that has been well analyzed by Carpenter, Bain, and many other able and lucid writers — that the psychological part of man is generally liable to be more or less

affected, and that, in any degree of intensity, from an almost unobservable degree of eccentricity to that of violent mania, between which extremes every degree and order of inebriety occupy a most conspicuous position.

Without descending into the chilly levels of pessimism, it can be safely asserted that man is, after all, but the child and sport of circumstances and largely the result of environment. His stupidity and his imbecility, or his criminality, are all conditions that may wholly rest — aside from hereditary or environing influences — upon some slight cause or foundation, as a chronic state of intestinal indigestion and its concomitants, or upon some trivial physiological defective action, and how little of a separate or independent existence that faculty which we call the mind enjoys aside or uninfluenced by our bodily state is something that the psychologist alone can understand. Morality and its offsprings — chastity, sobriety, industry, wealth, comfort, and respectability — are not, after all as they are too often represented, such heaven-born attributes, as any accidental shifting of our bodily health or physical condition may quickly make or unmake them. An accident or an illness may convert the most philanthropic or benign individual into a cruel and rapacious pirate, or a like accident may convert a cruel and vicious debauchee into an evangelist, as happened in the well-known case of Saul, who afterwards became the foundation and pillar of Gentile Christianity. We too often ignore the undoubted possibility and probability of a physical foundation for an inebriety, confining our exertion and appeals to the awakening of what we look upon as the blunted moral and ethical sense of the mental man who is as powerless to assist or resist the impulsion of the physical cause, as if he were being dragged out to sea by a resistless sea undertow, or being crushed in the embrace of a gigantic octopus.

Dr. Joseph Parrish, in commenting upon the injury that results to the inebriate from society insisting that the disorder

is the result of a purely moral and ethical instead of some physical wrong-doing, very aptly observes: "When society comes to learn that the cause of inebriety is primarily in the disturbed relations between different organs and functions of the human system, and especially, that children come into the world bearing with them the vestiges of disorders that have lingered through one or more generations, light will begin to reflect its brightness upon new and improved practical methods. When society comes to add to this fact of inheritance, the other fact, that by adapting the educational, social, and hygienic surroundings of the growing generations to its physical necessities, much may be done to arrest or counteract the development of the craving for drink, additional luster will be imparted to the recuperative and restorative measures that will appear a new revelation to the advanced intelligence of such a period."

Some years ago, in a paper entitled "Ventilation and Impure Air as Prophylactic or Causative of Disease," which I presented before the American Public Health Association at its Charleston session, the full text of which appears in the sixteenth volume of the transactions of the association, when dealing with the influence of an impure air in the generation of vice in general, I remarked as follows: "The connection between the habitual or excessive use of stimulants and the development of insanity is too well acknowledged to require more than mere mention, except that we may add that it is among the lower classes who use the excess of liquor that we find the greatest amount of lunacy; and to observe further, that by insufficient analyses of our subjects we oftentimes connect and mingle co-existing conditions as cause and effect, and often place a result as a primary cause. In this respect we must not forget that among the poor there is an inherent tendency to infirmities, mental and moral, as well as physical — a condition due to the deterioration caused by want, lack of proper nourishment, anxieties, suffering, and lastly but not

least, the foul air that the many must of necessity continually breathe. Liquors and stimulants are the causes to which all the miseries, and physical as well as mental afflictions, of the poor are attributed — as if poverty itself were no misery and did not carry in its train sufficient ills aside from the use or abuse of alcohol. The premature mortality, so excessive with the poor, their various ailments, feeble-minded, rachitic or consumptive children, depravity, moral degradation, idiocy, and insanity, — in fact, all that may happen, either in the line of physical or moral degradation, — are attributed to alcohol. Alcohol with them has become a necessity, owing to the morbid condition of blood and tissues induced by foul air.

“A reviewer on Acton’s work on prostitution mentions the swarms of child prostitutes that infest the low quarters of London, whose existence he attributes to ‘a brutal stupefaction of the moral senses, resulting from an utter ignorance of what is good or evil. Were I to review the reviewer, I might ask how simple ignorance can cause brutal stupefaction of the senses, either moral or otherwise, when, as shown by Leffingwell the most illiterate parts of France and of Scotland are the most virtuous. In the present age we fully understand that for all effects there must be a specific self-sufficient cause. It may not be found at once, but we should neither jump at a conclusion nor cover our ignorance in the matter by a mere figure of speech. Saying that their mothers drank alcoholic liquors, and that inheritance, precept, and example have lowered and debased them, even if they are too young to have drunk themselves, does not satisfactorily explain the existence of the swarm of child prostitutes, or how they arrived at the ‘stupefaction of the moral senses.’”

The overworked housewife of the poor, with mind and body in a constant state of irritability while nursing her child at her breast, but too often gives to the child along with its milk the foundation for those neurasthenic manifestations that in later life will call vehemently for stimulants. Moralizing with these

persons is a useless and cruel performance. What they need is a rectification of their neurasthenic condition as far as it is practicable or possible. These people cannot have too much choice as to habitation, occupation, or any other social condition, hence the hardship that we encounter in dealing with their cases.

To give proper and accurate advice and have the patients follow it are two altogether different things. Many families have sons whom they are pushing on to an end that is perfectly visible to those who can take into account the fact that the boy is simply attempting the impossible, and that a physical, if not a consequent moral and mental breakdown will be the inevitable results of his efforts. Many men could have a comfortable existence in some small trade or mentally untrying business, or probably do still better as small gardeners, raisers of berries or other small fruit, or if attending to a small poultry yard, with nothing more to contend with than the occasional perverse and persistent vagaries of some individual rooster, whose head can be promptly chopped off and the annoyance stopped, will persist in bringing their frail and sensitive natures in conflict with rawboned and unfeeling barbarians in civilized garb, and then, wrecked mentally and physically through the inconsiderateness of the position in which they have placed themselves, rush to morphia, chloral, sulphonal, or beer, whiskey or brandy, in deadening doses, either to keep up their moral courage or themselves upright, or to enable them to eat or sleep.

In one of the cases first mentioned I attempted all in my power to induce the party to change his business and give up any further attempts at public life, as I full well realized the futility of any remedial measures as long as the predisposing causes could not be removed, and the patient would not remove himself away from the determining or exciting causes. Under these conditions there was but one inevitable ending, and that came during a fit of added despondency. In

another case I urged and pleaded to have a clergyman give up his pulpit and his charge, and to avoid all attempts or causes for either mental labor or anxiety. A gradually encroaching nervous and brain affection soon brought him to that pass that his poor sluggish brain would only functionate under the stimulus of a spur, and in time he actually appeared in the pulpit under the influence of liquor and with a tongue too thick for utterance. In this case, the Rev. S. W., whom I treated in the late sixties, and who I was subsequently informed died some years afterwards of a softening brain in St. Luke's Hospital, New York, the subsequent diagnosis was undoubtedly "alcoholism," as a cause of the disease, but alcohol had had nothing to do with the beginning of the disease that eventually and imperatively called for alcoholic systemic support and brain stimulus. Close application to Greek and Latin, and to his other studies in a theological seminary, with a brain and nervous system inheriting but feeble stamina from some defect incurred in childhood, were the real causes of his malady and subsequent general wreckage. Had the man been placed when a youth in some occupation that would not have called for any great special brain work, he and his nerves and brain might have reached an old and respectable age without ever thinking of stimulants. We are not sufficiently careful or considerate in these regards, and afterwards blame alcohol for doing evil, when neither its absence nor unuse could by any possibility have saved the man, and while we must admit that its use granted some temporary relief, that it also tended to make the march of the disease more rapid, we must not forget that the patient was, in the beginning, in an abnormal physical and psychological condition, and that whatever may be said to the contrary, he was enabled through liquors to obtain the only possible degree of comfort or relief. In such a case it is not a question of morality or vice, as the man's condition of disease has placed him beyond either: it is only in most cases a question — and

that, only for want of intelligent professional advice—reaching the grave by the shortest, most convenient, and most civilized, as well as the most comfortable routes.

In many of the cases of dipsomania there exists the greatest obscurity as to their causation. As suggested by Prof. N. S. Davis, "the strictly periodical return of active phenomena, the tendency to gradually shorten the intervals as the years passed, and the observance in many cases of the fact that each returning debauch was immediately preceded by certain mental conditions, have led to the suggestion that these patients were laboring under some obscure disease of the cerebral nervous centers and analogous to that of epilepsy and other recurring neuroses. It is alleged by many writers that a large majority of this class derive their persistent tendency to periodical drinking from hereditary influences. One of the facts adduced in regard to such influences is sufficient to render it probable that they had been potent in some cases while they are wholly inadequate to explain the origin of many others. It was the increasing conviction in the minds of psychologists and philanthropists that the phenomena of this class of inebriates were founded on actual morbid conditions of the nervous structures, aided by hereditary disposition, that caused it to be separated from ordinary cases of habitual intoxication, and drank as a form of mental aberration under the name of dipsomania or methomania.

The unfortunate tendency to stimulants by so many of these cases, who through diseased processes, and totally independent of any previous alcoholic indulgence, have become in the end, confirmed inebriates, have led many to ascribe to liquor causes and results of which it was innocent. This is not said as an apology to the ordinary and senseless manner of using alcohol, as it deserves none, but because such views tend to obscure from our view the real causes and processes that have been instrumental in bringing the patient to such an unhappy state, and thereby prevent us from insisting upon

the timely application of those medical and preventive social and economic remedial measures which may save our patient and his friends and relatives, a life of misery to one, and one of humiliation and constant worry to the others. Alcohol has, unfortunately, through its social and individual abuses and misuses, too much to its account, but we should not on this account use it as a too general scapegoat, and that, too, to our detriment, as there exists sufficient in the exigencies of civilized existence, that we either must guard against, or are helpless against, to wreck a good share of mankind without any assistance from alcohol.

Some years ago I read an article in one of our periodicals detailing a number of cases that were said to have been totally wrecked by the injudicious prescribing of alcoholics, and among other cases there was one reported to Dr. Crothers, which gave the history of a case somewhat analogous to that of the clergyman above mentioned, except that in this case, there was a most undoubted history of neurosal diathesis existing on both parental sides. In youth he was physically wrecked during his seminary studies, and when in charge of a church and in the pulpit he gave way under the strain. After a revival he retired exhausted to the seashore and drank a bottle of porter daily. This did not seem to agree with him. The amount of alcohol in the porter was undoubtedly too great, as it gave rise to some fever, and to some other disturbances. This showed that very evidently there existed something more than functional exhaustion. Several years afterwards he went to Europe and drank wine freely and felt better. Some effort should have been made to keep him in the more humid and calmative climate of Europe. It was this, probably, more than the wine, that assisted toward his temporary recovery. Soon after his return to America he simply collapsed, wine no longer stimulated him, and he was then placed on whiskey, and the last heard of him he was an inebriate and a physical and mental wreck. The question

that arises in connection with such cases is, Are they really cases of inebriety, or is the condition of inebriety a purely secondary affair, depending upon some other physical element?

One of the above order of cases with a gouty family history once fell into my hands, in whom, after long watching, I decided to anticipate the attack of intoxication by beginning with the first evidences of mental irritation by moderate but regular doses of salicylate of soda and colchicum taken with some carbonated lithia waters. This did what no other treaties, pledges, or the most stubborn efforts had ever accomplished before. He stopped drinking, and by a timely recourse to the remedies he thenceforth avoided all further needs of giving way to what had formerly been an irresistible proclivity. There was a strong gouty and rheumatic history in his ancestry, one brother had asthma, and another suffered from periodical attacks of migraine. On these histories and some physical evidences that presented themselves in the case, very analogous to the slowly approaching disturbances that mark the stage of invasion of an attack of gout or of migraine in some persons, led me to follow the plan of treatment that proved successful.

Several years ago a patient afflicted with chronic malarial poisoning was advised to go to the south of Europe in the hope that a constitutional reaction would take place, which would place him in a better state of health. The person had previously to his first malarial attack enjoyed perfect health; ancestry on both sides had been sound in all particulars. Exposure to the hot days and cool nights on the Virginia peninsula during the war had induced an attack of typhoid malarial fever which had left him with an abnormally acting liver, enlarged spleen and a degree of kidney inadequacy. He was subject to dumb ague on the least provocation, was anemic with an asthenic heart, imperfect digestion and poor assimilation. He was totally unfit to maintain any degree of con-

tinued mental or physical exertion. He followed the advice given and went to Europe. Six months were sufficient to restore him to his former health, and with six months more to give the change some show for permanency he felt equal to a return to the United States. Six months after his return he more than lost all gained ground with the added complication of a pulmonary affection with occasional hemorrhages which soon so reduced him that the case looked hopeless. A removal to southern California arrested the rapid down-grade march of the patient, and after some three years of stationary conditions he gradually began to improve, and is now in a very fair state of health, but requiring constant watching not to expose himself either to the weather or to over-exertion.

The above case is simply related as in many dipsomaniacs we encounter the same analogous pathologic tendencies, only whereas in the above case the conditions were more due to blood and organic changes, in the dipsomaniac they are more apt to be psychic or neurotic, with possibly a similar blood deterioration as a basis. A climatic change may, in the majority, act most beneficially, but, in the majority, we may also look with certainty to a relapse on their return. Not only can we look for a relapse, but for an outward and rapidly increasing march of the diseased processes. A patient sent to Europe should remain there for several years, and even then his return should be tentative. If unable to take the European journey, I should advise as a substitute a removal to some of our insular possessions, where are to be obtained the more humid, equable, and sedative climates.

The bases upon which a dipsomaniac tendency may rest are so varied and so numerous that much discrimination will be required to tell what is best for the patient. Some may require a change of climate, whilst in others a mere change of occupation may be sufficient. Some may be cured by change in their social or business habits; and in others a cause may be discovered to reside in some organic or physical ailment,

or in some obscure constitutional taint. Again there are cases apparently so grave on the surface as to seem irreclaimable that might easily be satisfactorily treated by hypnotic suggestions. Cases that are claimed as cured by the various nostrums and inebriety specifics that periodically flood the market belong to the latter-named class, and are the result of either auto-suggestion or of hypnotization, and no form of treatment can be made to cover the vast field of causes upon which the disorder may rest. In many cases, as experience has amply proven, the unwise and too indiscriminate employment of these nostrums, specifics, and proprietary cures may simply hurry the march of otherwise probably remediable disease processes.

An unfortunate error was made in Dr. Boeck's article "The Influence of Alcoholic Liquors on Mental Work" on page 53 of the *Journal* occurs this sentence: "Stimulant alone without consecutive paralysis is only observed when the dose of alcohol is very weak. As soon as it is raised to 7.5 grams the paralyzant action is manifest." The printer makes the figures read 70. grams instead of 7, which is a very serious mistake.

The French Minister of Public Instruction has called attention to the insufficiency of the demonstrations and studies against alcohol in the colleges and public schools. He declares that a crusade should be inaugurated in all the colleges and schools of the country, showing that alcohol is one of the greatest evils which the nation has to contend with, and that instruction should be given and carried on in all the schools of the country.

On page 9, in footnote, Roseman's results should read "the expected increase in the secretion," and not "elimination."

THE STUDY AND TREATMENT OF ALCOHOLISM.

The New York Academy of Medicine has recently given two evenings to the consideration of the above subject. The following is a summary of the papers and discussions as it appeared in the *Medical Record* and *Medical News*.

Dr. Braunlich said that the cases of acute alcoholism which come for treatment at Bellevue Hospital may be divided into three classes: First, acute alcoholic intoxication; second, delirium tremens; third, alcoholic mania. Occasionally other complications of alcoholism are seen in the alcoholic ward — as melancholia, alcoholic neuritis, alcoholic epilepsy, and epileptic mania, brought on by over-indulgence in spirituous liquors. These last conditions are rare, however, for, as they are either chronic or need treatment especially for their mental trouble, they are usually transferred to other departments. The most frequent form of alcoholism is an emotional, boisterous stage. This is treated routinely by a dose of thirty grains of potassium bromide and fifteen grains of chloral hydrate. These remedies are repeated in an hour if the patient's symptoms continue. The patient is persuaded to get to bed as soon as possible, and after a few days' rest can usually be discharged without more ado.

A second important class of cases are the dead-drunks. For these a stomach tube is used immediately after their entrance, and their stomachs thoroughly cleared of any alcohol that may be present. External heat is then applied, and the patients are rolled in blankets. One-thirtieth of a grain of strychnine is administered hypodermically, and one to two minims of the fluid extract of digitalis. There often exists in these cases an acute gastritis with very persistent emesis,

which increases the prostration and further disturbs the patient. For this, morphine is given in doses of one-fiftieth of a grain, subcutaneously, every fifteen minutes to one-half hour until the patient is able to retain fluid. Fluid is first given in very small quantities, not more than a drachm of milk or water at a time. Even this is not repeated frequently until the retention is assured.

When symptoms of delirium are manifest in chronic alcoholic patients the sudden withdrawal of alcohol has been found to be dangerous in certain cases. If symptoms of cardiac failure assert themselves, a little alcohol must be allowed as a stimulant to the circulation. Other circulatory stimulants should be freely employed. Of these, aromatic spirits of ammonia and tincture of digitalis have been found most effective. It must not be forgotten by the advocates of the sudden and complete withdrawal of liquors that these remedies contain a certain amount of alcohol, and that this is one good reason for the benefit they do. Strychnine is given hypodermically in doses of one-sixtieth to one-twentieth of a grain, according to the necessity for stimulation. Atropine is given in doses of one one-hundredth-fiftieth to one-fiftieth of a grain. Where there is much excitement, sodium bromide is given in doses of thirty grains to one drachm; one-eighth of a grain of morphine is given hypodermically and one-hundredth of a grain of hyoscine. A wet pack proves very soothing, and its use will often obviate the necessity for the administration of strong hypnotic drugs. After the stage of excitement is past, forced feeding is the treatment especially indicated.

After an attack of delirium tremens, the patient must be tempted to take as much food as possible for at least a week or ten days. One of the members of the visiting staff at Bellevue uses so many eggs for his alcoholic patients that there has been a protest from the commissary department of the hospital because of the expensiveness of this article of

diet at certain times. At least six to eight eggs a day should be used by convalescent alcoholics. They are the most easily digested concentrated food that can be used. After an attack of delirium tremens it must be remembered that patients are very prone to suffer from almost unquenchable thirst. Water should be given very freely then, and nurses should be instructed to see that at least every hour some water is offered to the patient, or a fresh supply placed beside him. The aqua ammonii acetatis may be used freely and will be found to be very refreshing and stimulating.

ALCOHOLIC MANIA. — For this condition the best drugs to produce quiet are morphine and hyoscine. Patients need to be carefully restrained and usually require the services of a special attendant. Where the mania lasts for some time, patients are not kept in the ordinary alcoholic ward, but are transferred to the insane pavilion. Alcoholic neuritis runs so chronic a course that very few cases are retained in the alcoholic ward. Epileptic mania, due to alcoholism, is transferred to the insane wards. All of these cases of mental aberration due to alcoholism should be closely watched as regards the development of organic disease, and especially pneumonia. It must also be borne in mind that pneumonia in alcoholic patients often causes a delirium that may for a time simulate maniacal excitement and lead to a mistake in diagnosis.

TREATMENT AFTER ACUTE ATTACK. — For the anorexia which so often follows an acute attack of alcoholism, a prescription containing ten minims each of capsicum, nuxvomica, and ginger is often of great service. For this state of anorexia and general relaxation, exercise in the open air has been tried, but it was found that where patients walked much their convalescence was slower. Rest is an important element in the treatment of the exhaustion which follows acute alcoholism. If the alcoholic gastritis is severe, capsicum is contra-indicated, because it is so irritant. In a number of cases of wet brain, lumbar puncture was tried. In

some of the cases, improvement followed, but there seemed to be very little, if any, direct effect. At the beginning of excitement, such as may come on sometimes after an excess and its effects have passed off, thirty grains of bromide and fifteen grains of chloral repeated if necessary will prove a useful remedy. In general, forced feeding and sufficient stimulation are the important elements in the treatment of alcoholic cases after acute symptoms have passed off.

CLASSIFICATION OF CHRONIC ALCOHOLISM. — Dr. T. D. Crothers of Hartford, Conn., said that all inebriates may be grouped under three heads: (1) The paroxysmal, (2) The delusional, and (3) The senile or demented. Under inebriates are included all who take alcohol to excess. Alcoholism means simply a poisoning of the system. Inebriety is a pathological condition having a definite cause and recognizable symptoms, and the taking of alcohol to excess is usually only one of its symptoms. Paroxysmal inebriates are those who take alcohol to excess periodically and then abstain sometimes for long intervals. The intervals are often regular, but may be irregular. There is often a precise uniformity in the return of the impulse to take stimulants, which it is difficult to understand. The attacks are sudden, and there seems to be a distinct neurotic cycle in the organism. A man of distinction who suffers from periodical attacks of inebriety has his impulse to take stimulants return every ninety-one days and some hours. At that time no consideration is able to inhibit the impulse. It is a true insane idea, an imperative emotion. When such attacks recur, they often come without premonitions. After some experience, however, the patient is able to recognize that an attack is coming. If he should be prevented from procuring stimulants, an almost maniacal state develops. Another intelligent patient has his impulse to take alcohol return every ten months. He has put himself under a doctor's care several times, but has not succeeded in preventing a return of the morbid impulse. Many

patients, conscious of these recurring impulses, go to a hotel in a distant city for some days, drink to their satisfaction in their rooms, and then return to business. Others go to sanatoria and reformatories in the hope to put off the temptation.

These drink storms return at such irregular intervals in most cases that it is often hard to determine their causes. Usually a condition of exhaustion has supervened in the patient just before the impulse takes possession of him. Often the attack is preceded by a period of overwork, nervous strain, mental worry. Often it is accompanied by unusual excitement and mental disturbance. Such patients, if interfered with, have moments of destructiveness and are prone to use abusive language, though at other times they may be utterly unaccustomed to it. This condition represents the true dipsomania. A thirst for spirits seldom grows into this maniacal impulse. The dipsomaniac may have more or less repugnance to alcohol between his attacks. The neurotic basis of the affection is thus made clearer and the necessity for its treatment as a nervous and mental condition made more emphatic.

DELUSIONAL INEBRIATES.—The first symptom of this condition is often an increased confidence on the part of the patient in his power to overcome the drink thirst. He knows that he has tendencies to take more spirituous liquor than is good for him, but feels sure that whenever he wishes he can break up the habit. This delusional condition extends after a time also to other subject-matters. The patient is sure that he is able to accomplish other things quite beyond his power. When on any special occasion he fails to overcome this habit he offers the most childish explanations and considers them amply sufficient. Some of the reasons given are the typical reasons of insane minds. At times in these cases, paresis develops and the picture is one of delusions of grandeur. As a rule, such patients develop a boundless confidence in remedies

of all kinds, and especially drink remedies. The more secrecy is attached to a method of treatment, the surer are they of its efficiency. These constitute most of the class of people who set themselves up as examples of wonderful cures. Their relapse into their old habits is only a matter of time. After a while such patients develop other delusions, especially those of persecution. They insist that friends are forcing them to suicide. Electricity appeals strongly to their imaginations, and they are frequently convinced that friends are using electrical contrivances on them for the purpose of torturing them. Such patients are prone to intense jealousy. As the result of these delusions of persecution they may themselves in turn become persecutors and commit violent acts.

SENILE OR DEMENTED ALCOHOLICS. — These are patients usually of feeble mentality who drink almost without purpose. Where alcohol is not easily obtained they do not take it. They do not drink while in the country, but drink almost continually in the city. Very often these patients are degenerates from birth, and the wear and tear of life would seem to have used up all their will power. Sometimes this senile or dementic alcoholism develops as the result of brain injury or shocks. This traumatic form is rather easily recognized. At times dementic alcoholism is the result of exhausting disease. Not infrequently it is the terminal stage of the paroxysmal form of inebriety. Sometimes such patients go into the saloon business for no other purpose than to be in a position to take stimulants at all times.

The first and most important element in the treatment of inebriety is thorough control of the patient under circumstances that make the getting of alcohol an impossibility. For this to be successful a change of surroundings and external conditions with a home among strangers is absolutely necessary for severe cases. An asylum at a long distance from his home is the best beginning of the treatment. If the

patient is in the midst of a paroxysmal drink storm when he comes under treatment, the question of the withdrawal of spirits is of importance. Notwithstanding the tradition in the matter, the sudden withdrawal of spirits will not cause delirium if baths and salines are used freely. The taste for alcohol may be overcome by giving two ounces of quassia every two hours, until a feeling of disgust for alcoholic drinks is produced. Other bitter tonics, notably cinchona, produce this same effect. An adjuvant remedy in these cases is apomorphine, which may be used in doses of one-sixtieth of a grain, until nausea is produced, and this will limit the craving for alcohol. The stimulant effect of alcohol may be replaced by *nux vomica*, given in good quantities. A quarter of a grain pill may be given every two hours.

After the effects of an attack of acute alcoholism have passed off, two serious conditions usually remain. One is a poisoned condition of the system, due to the presence of alcohol and its products in the tissues — the other is starvation, due to the anorexia. The poison should be eliminated from the system as rapidly as possible. For this, hot air baths, or, if these depress, electric light baths should be employed.

Electric light baths are given by placing the patient for some time in a flood of electric light. It has been shown that perspiration occurs more freely, even at the same temperature of the room, when the skin is exposed to strong light. A rapid and intense elimination of poisonous products occurs through the skin. After this free sweat a feeling of exhilaration takes the place of the sense of depression, the patient becomes more restful and sleeps well.

Alcoholic excesses often lead to the concealment of organic disease until these affections have developed to an alarming stage. This is especially true of tuberculosis. The effect of alcohol and of the toxin of tuberculosis are not unlike. Members of the same family that suffer from the toxins of alcohol and from the toxins of tuberculosis may exhibit

similar symptoms. This accounts for the insidiousness with which the tuberculosis may develop.

Narcotics must be used with caution, and so far as possible only the milder drugs of this type employed. Lactucarium, lupulin, and valerian are important drugs in this respect and will produce much more quieting effects than is usually thought. Bromide of soda is a useful remedy, and is preferable to the bromide of potash, but should be given in sufficiently large doses. Where marked restlessness exists, fifty to one hundred grains of the drug should be administered as a dose. If syphilis exists with the alcoholism, mercury and the iodides must of course be given. They will be found to control many of the symptoms which were supposed to be due to the alcoholism and will save the use of stronger narcotics.

Arsenic is very good remedy for its general tonic effect. Phosphate of soda should be given continuously for some time after an acute attack of alcoholism. It acts as a hepatic stimulant and its eliminative action makes it very valuable. The other indications are for rest, food, and frequent warm baths. These baths are particularly useful because of their eliminative action. The mental treatment of alcoholism is very important. The influence of suggestion and good example must not be lost sight of, and the patient must be provided with constant mental diversion so as to keep from brooding over his condition. There is no specific treatment for alcoholism. Sometimes the drink craze proves to be self-limited. The last remedy that has been used is then thought to account for the change that has taken place. The reason for the alteration in the patient's character seems to be some change in the brain material. The hope is that a change like this can be led up to by institution treatment.

Dr. J. D. Quackenbos said that hypnotism is an efficient remedy in the treatment of alcoholism. It has not thus far been employed to the extent that its success justifies. Hypnosis reveals the fact that there is in human nature a dual

personality. Each self has a distinct consciousness. The primary self is employed with the ordinary business of life. The secondary self is concerned with the automatic actions of life. It apprehends intuitively and does many things that the primary self is not able to comprehend. One personality does not shade into the other. They are essentially distinct, although they may influence one another for better or for worse. Hypnosis brings out the subliminal or submerged self. The influence of this personality can be employed to overcome the want of energy in the primary self. Dipsomania yields readily to hypnotic suggestion and in these cases hypnotism is, as a rule, easily employed. During the state of intoxication, hypnotism cannot be employed. Just before a drink storm, however, hypnotic suggestion may prove most effective. Most observers are agreed that there is an intimate relation between the use of tobacco and alcohol. When tobacco is used to excess the alcohol habit is usually a concomitant, and when drink storms come on they have often been preceded by a period of greater use and abuse of tobacco than usual. The periodicity of dipsomaniac attacks is quite marked. The longest period that Dr. Quackenbos has seen was three years. Often it will be found that spells of crankiness, lowered inhibition, and lack of resistance to irritation immediately precede the outburst of acute dipsomania.

Once a patient has been brought under the influence of hypnotism, carefully thought-out suggestions should be impressed upon him. He should be told, for instance, that alcohol will disgust him, that he will not be able to bring a glass of liquor to his lips, that the abuse of it with food will cause the food to disagree with him. Then the mental picture should be impressed upon him of the effects of alcohol. The meretricious attractions of the barroom should be set off by picturing to him, while in the hypnotic state, the delights of a chaste home life. Apprehension of the results of alcoholism should be aroused and at the same time promises

given of glorious success in his effort to overcome the habit. In giving these suggestions, sincerity is absolutely necessary. They must be in the nature of an inspiration. The words must not be mere lip work, nor a rote lesson. There must be a reciprocal transfer of personality. The hypnotic subject recognizes in his trance state at once any disingenuousness or lack of candor that may be present. The consent of the patient must of course be obtained; otherwise he will not respond to suggestion. It is not enough for him to come to receive hypnotic suggestion for the cure of his drink habit, merely because friends have insisted on it. He must have a sincere desire himself. While in the hypnotic state this desire must, however, be thoroughly awakened in a vacillating spirit. This can be done by pointing out the dangers there are in alcoholism. The treatment must not be abandoned too soon, and it must be remembered that it does not guarantee against relapse. No remedy nor set of remedies that we have will guarantee against relapse in any disease. As in rheumatism, tonsillitis, and diphtheria, one attack of dipsomania predisposes to others. Even though the patient is cured for the time, the disease may return. In addition to hypnosis, other therapeutic methods should be employed at the same time. The patient should be thoroughly stimulated by means of strychnine or coca, if that is deemed necessary.

In acute excitement and restlessness, bromide of potash and chloral should be used freely. In the milder form of restlessness the valerianates should be employed. Dr. Quackenbos has had under treatment forty inebriates. In about fifty per cent. of these cases that are still under observation there has been no relapse. The longest cured case passed from treatment about a year ago. Thirty-three per cent. of the patients have been lost sight of; seventeen per cent. are known to have relapsed. About one-half of these latter cases were known to be hopeless from the beginning. Where degeneracy exists and alcoholic deterioration of the brain has

already taken place; hypnotism does not produce its usual effect, and relapses are not infrequent.

In closing the discussion, Dr. Crothers said that suggestion with or without hypnosis is very useful in the treatment of alcoholism. The damaged brains of alcoholic patients do not, however, hold impressions long. Impressions are only superficial. The pietist and the moralist have shown us how transient are the effects of suggestion though they must be tried even unto ninety-nine times and occasionally they do produce lasting good effects. In answer to a question, Dr. Crothers said that after fifteen years about thirty-three per cent. of patients that have been under his care are without relapse. Some of the patients have been more than twenty years without taking liquor. In one case, after eighteen years of abstinence, the drink habit was re-established. It is very difficult to give any prognosis in individual cases, or to calculate the average of cures.

The second evening the treatment of inebriety was considered. The vice-president, Dr. Charles L. Dana, introduced the subject of the evening with a few remarks. He said that unfortunately the effects of alcohol on the human race had been considered in the past chiefly by sentimentalists, and little had been heard from the medical profession regarding the scientific aspect of this subject. He had himself carefully studied 350 cases of alcoholism observed at Bellevue Hospital. The most frequent form was periodical dipsomania, and the next pseudo-dipsomania. Over two-thirds of the whole number had begun drinking before the age of twenty, and all before thirty. As a rule, the drunkard did not live more than fifteen years, and it was seldom that the human organs could outlive more than three thousand intoxications. Death usually occurred from pneumonia, meningitis, delirium tremens, insanity, or alcoholic dementia.

Dr. Herman M. Biggs said that in his early experience at Bellevue Hospital he had seen a large number of cases of cir-

rhosis of the liver, and the common history had been that of indulgence in large quantities of spirituous liquors — ten to twenty glasses of whiskey a day. But this has all changed in the last fifteen years, and it was the exception to obtain such a history at the present time. The vast majority of the patients now gave a history of taking from one to three drinks of whiskey a day, and four or five pints of beer in the same time. With this change in the mode of drinking there had been a change in the character of the lesions observed. Cirrhosis of the liver was relatively much less frequent, while the degenerative effects, such as disease of the heart, the myocardium, the blood vessel, and the kidneys, were much more common. Some years ago he had looked up the records of deaths at the health department, and had found that during the last twenty years there had been only a very small increase in the number of deaths recorded as due to alcoholism, hepatitis, and cirrhosis of the liver, in spite of the very large increase in the population. During this period there had been an increase of nearly 150 per cent. in deaths from disease of the heart and blood vessels, while the population had increased only from fifty to sixty per cent. Almost the same was true of diseases of the kidney. In the last twenty years, lager beer had largely replaced the Weiss beer formerly used in Germany, and during this period the death rate from disease of the kidneys had greatly increased. These facts appeared to find their explanation in the change in the type of drinking, *i. e.*, this combination of spirituous and malt liquors.

Dr. M. Allen Starr said that in the majority of individuals sherry produced a quarrelsome mood, while, on the other hand, port tended to exert a soothing effect. Champagne produced apparently a decided exhilaration of the flow of thought, while Burgundy made one think more slowly, and by no means added to the feeling of conviviality. Whiskey, brandy, and gin had very different effects on the individual;

hence we should remember that we were not dealing with the effects of alcohol *per se*, but with the effects in certain combinations. There was no known disease of the spinal cord produced by alcoholism, although we knew of distinct effects upon the nerves and upon the brain as a result of alcoholism. The alcohol seemed to affect the parts of the brain which were the most highly organized and developed. The highest centers were the ones first attacked; the intermediate centers and the lower centers of the brain and spinal cord did not seem to be specially susceptible to alcohol. The pathology of alcoholic insanity was to-day most clear and distinct. Berkeley had shown that the alcohol acted upon the brain by dissolving, as it were, the dendrites, and so rendering the cells incapable of receiving impulses from other cells; hence the lack of co-ordination and loss of memory so evident in all conditions of chronic alcoholic insanity.

The hypodermic use of strychnine and atropine was now generally agreed to be the chief measure of usefulness, together with proper attention to the nutrition in cases of acute alcoholism. He did not think it was very common to find a recovery from chronic alcoholism of the type of periodical drinking in which there was an entire cessation of the drinking between the attacks. This form, he believed, was more a matter of moral obliquity than of true insanity. The diagnosis of insanity could not be made from a single symptom; there must be something more than a mere tendency to drinking on which to base the diagnosis.

Dr. Starr thought the physician or the family should be able to control these persons legally. A certain amount of moral suasion seemed to be of much more service than anything in the way of medicinal treatment. Most of these individuals were neurasthenic, and if their neurasthenia could be improved their power to resist the drink impulse could be augmented. He was of the opinion that any measure of a religious or of a social character that could be brought to

bear on these individuals was well worthy of trial, and he would confess that the only reformed drunkards of whose fate he had knowledge were those who had been saved, not through medical but through religious influence. After an extensive experience with various institutions he did not hesitate to say that he did not know of a single one in which it was not comparatively easy for the inmates to secure alcoholic liquors. If we could legalize the commitment of a chronic alcoholic for a certain period to a place where he could be kept free from alcohol, it might be possible to save some of these unfortunates. It was well worth while to make an effort in that direction.

Dr. Alexander Lambert said that he had not gone into a minute study of the alcoholic patients in Bellevue Hospital because he had long ago lost all faith in their statements. Certainly there was a great difference in the symptoms presented by those who had been accustomed to drink good liquor and those who had indulged in the vile spirits of the east side saloons. Of the 24,300 patients in Bellevue Hospital last year, over one-fourth went through the alcoholic ward. Last summer he had tried the effect of threatening the "repeaters" with the workhouse, and had found that in the ensuing six weeks the number of these repeaters had been reduced from sixty to twelve; while in the year following, where no such threat had been made, there had been the normal percentage of repeaters. When it had been discovered that this threat was not to be carried out, the usual number of male repeaters came into the wards. Among these patients there were many who had taken the various "cures." Unless we had some law, as in Connecticut, which would permit the detention of the alcoholic until sufficiently recovered to be allowed to go out, the outlook from treatment must be most discouraging. Regarding the question of heredity, statistics were cited to show the enormously large number of defective and diseased children among the progeny of alcoholic parents.

Dr. James Ewing said that he had been interested in the study of the effects of alcohol on the ganglion cells. The cases were conveniently divided into two main classes, viz.: (1) Those which were acute, and (2) Those which were very chronic. In the brains of those dying from delirium tremens the appearance was most characteristic, particularly the great venous engorgement on gross examination. On microscopical study with the aid of Nissl's or Golgi's stain, one found changes which were apparently identical with those observed in sunstroke, tetanus, and hydrophobia. There was a complete disappearance of the reserve nutriment or chromophilic bodies. The distribution of the lesions showed that there was a general circulating poison. He had found the lesions in the motor cortex as well as in the less complex cells of the frontal lobes. As a rule, the spinal cord cells did not show such marked lesions as did the ganglion cells of the brain cortex. Several systematic attempts had been made to reproduce in the lower animals the same condition as delirium tremens of human beings, but so far these had all been failures, because if sufficient alcohol were given it acted as an irritant, causing the death of the animal. These experiments perhaps justified the deduction that alcohol acted chiefly on the more highly organized cells of the nervous system. Such lesions as were produced resembled those of chronic alcoholism in man. The chronic abuse of alcohol was followed by distinct lesions in the human subject, though not so marked as in the acute cases. In the brain of the average chronic alcoholic, one found an evidence of wear and tear in the deposit of pigment, usually in large masses in the ganglion cells. Those who were engaged in making autopsies in the hospitals of New York city, he thought, would bear out the statement that the visceral lesions of alcohol were more prominent than were those of either tuberculosis or syphilis.

Dr. Joseph Collins said that it was generally conceded that the habitual inebriate could be reached by legislation.

Strangely enough, New Zealand and Switzerland had led the world in this important matter. Nearly all of the provinces of the Dominion of Canada had passed effective legislation for the care of the inebriate, but legislation for this class in the United States had been spasmodic, desultory, and wholly unsatisfactory. The author then reviewed the laws bearing on this subject that had been enacted in various countries.

Dr. S. A. Knopf said that alcoholism was a pronounced factor in tuberculosis. Statistics showed that twenty-five per cent. of children committed to sanatoria for the treatment of scrofulous and tuberculous diseases had alcoholic parents. It should be remembered that there was a very prevalent opinion among the laity, and to a certain extent among physicians, that alcohol was a most important agent in the treatment of consumption. If alcohol were given in quantities sufficient to control the temperature it would convert the phthisical patient into an alcoholic. As to the treatment of inebriates, the speaker said that he approved of moral suasion, arguments, and hypnotic suggestion. Poor restraints and poor cooking were potent factors in the production of alcoholism.

Dr. G. L. Peabody said that the last speaker had sounded the true note when he had called attention to ignorance of the effects of alcohol as a cause of alcoholism. This ignorance was common among people who were by no means ignorant on other matters. They were disposed to think that there was no particular harm in drinking spirits so long as one did not get actually drunk; they did not know, or else ignored, the pathological effect of continued moderate drinking. In these days of working under high pressure, the fatigue experienced toward the end of the day was a cause of indulgence in alcohol. Many business men thought they must take some alcoholic beverage at night, either with or before their dinner. At one time the Massachusetts State Board of Health had analyzed twenty or thirty specimens of "bitters" found in the

market. Many of these were recommended as substitutes for alcohol, and as conducive to temperance, yet they were found to contain from forty to fifty per cent. of alcohol. The fact was commonly overlooked that sherry wine was not really a wine in the dictionary sense of that term, but really a flavored spirit containing from thirty to forty-five per cent. of alcohol. Ladies would often take sherry wine because it was called a wine, though they would shrink from taking any spirit.

Dr. Peabody said that he had been told by a physician that in the so-called "gold cures" it was the practice to give daily hypodermic injections of strychnine and atropine, the solution being of a golden color, but not containing any gold. After the treatment had been carried out along this line for a certain length of time, the patient was told that he could, if he so desired, go to the sideboard and help himself to liquor in the presence of the physician. Some would accept this invitation. They would then receive what was apparently the customary hypodermic injection, but it was not really so, the physician having smuggled in a dose of apomorphine. Of course, when shortly afterward, the patient vomited the liquor, he would be profoundly impressed and disposed to believe the statement made to him that after having gone through the "cure" it would be impossible for him to "digest and retain" liquor, even if he saw fit to take it.

The French governor-director of railroads has written to the different societies opposing the use of alcohol that all the government roads have agreed to the following: First, to discharge all employees who persist in using spirits and wine while on duty; second, all persons who continue to drink shall be dropped from the pension rolls of the company and will not participate in the endowment funds in case of an accident. All restaurants on the roads are forbidden to sell spirits to the workmen.

MANAGEMENT OF THE VICTIMS OF DRUG
HABITS.

BY DAVID PAULSON, M.D., CHICAGO.

To attempt to deny that the sad victims of morphine, cocaine, and allied drug habits are not alarmingly on the increase would be to ignore the ordinary every-day experience of the average physician, even though the reliability of available statistics were doubted.

It is of course impossible to obtain satisfactory figures as to the exact number of drug fiends in any given locality. It has been estimated that there are 60,000 morphine devotees in one of our large American cities. An Eastern physician, whose reliability cannot be questioned, and whose extensive experience in this direction entitles his opinion to a large degree of respect, has estimated that ten per cent. of American physicians are slaves to some form of opium.

It is not the purpose of the writer to discuss at length the various causes that account for this universally conceded increase in the use of sedative-producing drugs, but rather point out some of the leading features in the successful management of these unfortunate cases. However, a few leading causes may be indicated:

First, the high tension under which modern society is existing, and the failure to properly support such a pressure by using the simple, natural, and nutritious dietary of our forefathers.

Second, the patent medicine firms, owing largely to persistent and extravagant advertising, and partially because

there is still lurking in the average mind a superstitious reverence for drugs put up under mysterious names, and by concealed methods succeed in selling annually eighty million dollars' worth of these substances to the American public. Fortunately, many of these substances are harmless, and therefore injure the patient's purse rather more than they ruin his nervous system. But, unfortunately, the patent medicine man is beginning to discover that the invalid is beginning to demand something more substantial than mind cure, and that opium will satisfy this demand in the most substantial manner, and will produce the most reliable and substantial testimonials regarding the magic effects of their particular nostrum. But often some of the enterprising invalid public discover that there is a cheaper way of smothering pain than by buying high-priced patent medicines, and so, by various means and contrivances, they soon secure the genuine article; and for a time congratulate themselves upon their fortunate discovery.

Third, the lessened ability, or, at any rate, the refusal of the average patient of to-day to endure any pain, no matter how legitimately they have sown for the same. The average patient knows well enough that the physician has something in his medicine case that will apparently juggle away pain. The fact that nature exacts its penalty by making the nervous system a little more sensitive to pain after each of these apparently harmless injections has little or no weight with the patient, even if the physician should take the pains to explain the philosophy of the same. It is immediate relief that the patient demands, and subsequent consequences resulting from securing the same have no weight on his mind.

There is a large class of peculiarly constituted individuals who acquire the habit with a readiness that is certainly surprising. An intelligent physician who came to the Battle Creek Sanitarium several years ago assured me that he had been using the drug only eight days previous for some trifling ailment, and I had no reason to doubt his statement; yet it

had already fastened its grasp upon him so thoroughly that he could not, unaided, shake it off. Undoubtedly this is an exceptional case; nevertheless it serves to illustrate how quickly drug habits can be acquired by certain individuals.

Different Methods of Cure.

1. ABSOLUTE WITHDRAWAL WITHOUT ANY SUBSTITUTION OF SUPPORTING MEASURES. — There are cases on record where prisoners and others have been absolutely deprived of the drug at once, and no medical attention given to them, other than the allowance of ordinary rations and ordinary physical restraint. That some of these cases have made successful recoveries would certainly not be sufficient reason to lead us to ignore all the resources at our command and adopt such a barbarous procedure.

2. THE SUBSTITUTION METHOD. — To simply switch the patient off from a dangerous drug to one less harmful is almost invariably a delusion and a snare; for in most cases it means that upon the least physical let-down after the patient's recovery that he resorts to the substitution drug, and, more directly, because it does not furnish him all the solace that he anticipated, in a fit of desperation he returns to the original drug.

The majority of the several hundred cases treated at the Battle Creek Sanitarium the last few years and in our training school wards in connection with the Chicago Medical Mission, as well as at our Chicago branch of the Battle Creek Sanitarium, are largely drawn from those who have been treated by the substitution method, but who almost immediately after leaving the physician's care drifted back again into their original habit.

3. THE TAPERING OFF PROCESS. — This method has many enthusiastic advocates, and undoubtedly many have been successfully cured by it. The main objection to it is subjecting the patient to such an unnecessarily long and la-

borious struggle. Furthermore, to maintain the permanency of the cure in many cases it is essential that the patient should have clearly fixed in his mind a decisive moment when he recognized that he obtained the victory. There are many patients who spend a good share of their lives alternating between tapering off a drug habit and then tapering back to it again.

4. THE RAPID WITHDRAWAL OF THE DRUG, SUPPORTING THE PATIENT MEANWHILE BY THE RATIONAL APPLICATION OF PHYSIOLOGICAL REMEDIES. — What such a patient needs at this critical reconstructive period is physiological stimulation, rather than artificial, and this means the thoroughgoing utilization of all that science has demonstrated will naturally assist the patient.

It is my purpose in this article to outline in a general way such a line of treatment as we have found to be eminently successful in the management of these cases. To attempt to specify absolutely in detail would necessarily be useless, as each case must be treated to a greater or less degree in accordance with their individual conditions. Patients are at once assigned to a nurse whose training and experience particularly fits him to command the confidence of the invalid. It is practically useless to attempt to cure these cases without constant attention by a trained nurse; friends of the patient cannot at all be relied upon in these cases, and the patient needs constant attention, night and day, during the first few days. The cunning that the average morphine fiend can display in secreting morphine tablets would do justice to a government spy. One of my own cases will serve to illustrate this. I had every reason to suspect that he was using the drug, and finally discovered that he had the tablets stored away in the cap of his fountain pen, which I had allowed him to use in bed for writing. It seemed to very naturally quiet his mind, for obvious reasons, of course. So, careful but discreet scrutiny must be exercised to prevent the patient stowing away some portions of the drug and using it on the sly.

One of the most important factors in the successful management of these drug victims is that the ax must be laid at the root, as it were, and not only the morphine or cocaine be banished, but also liquor and tobacco or any similar habit upon which the patient depends to secure unearned felicity. For if one of these habits retain its grip upon the patient it will only be a question of time when it will fail to satisfy, and the original Samson of the materia medica must again be called to the rescue. Some contend that it is better to get cured of one habit at a time, but in a personal experience with over fifty of these cases I have become fully convinced that the most successful and safest plan is to do precisely what an individual would who had several fingers in the fire. He would not stop to philosophize in reference to the wisdom of withdrawing them one at a time. In my experience it is a significant fact that the several cases who have relapsed were in each instance those who persisted in the use of tobacco.

Suitable Diet.

The food should be such as absorbs readily, and introduces nothing into the system that will tend to excite the already over-irritated nerves. Kumyss, hot malted milk, buttermilk, and abundance of fruit and fruit juices are ordinarily well tolerated by the stomach, even when the patient is at his worst. Flesh food, with its irritating waste products and particularly beef tea, when used almost immediately aggravate the patient's condition.

Method of Treatment.

The patient has generally taken a little more than the average dose before he puts himself under the physician's care, and so, during the first twelve hours, the only duty the nurse will have is to watch his half-stupid patient and see that by some means or other he does not secure fresh supplies of the drug during his waking moments. At the first appear-

ance of fidgetiness and restlessness on the part of the patient he should be brought in a wheel chair to the bathroom and given a neutral galvanic bath, with the water at just the temperature of the skin, with a mild galvanic current passing through it. This has a marvelous soothing effect upon the nervous system; the patient not infrequently in a few moments dozes off to sleep while in it. The patient will receive nothing but benefit by remaining in this for an hour, and even longer. After the bath is given, a gentle massage should follow, and, after a short rest, hot fomentations are applied to the small of the back or to any other point where the patient begins to recognize pain. This ordinarily affords temporary relief. Immediately following this it is a good plan to envelop the patient's entire body in a sheet wrung as dry as possible from water at about the temperature of eighty degrees. Around this is wrapped enough dry blankets to promote a moderate reaction, but not sufficiently to produce perspiration. This is a remarkably sedative measure.

As soon as the patient begins to feel uneasy in this it is removed, and at this stage a certain class of patients can often be made comfortable by simply wheeling them back and forth in the hall in a reclining wheel chair. Often an hour or two can be passed in this manner. Then the patient may be put back into the neutral bath. Perhaps after this he is given a mild application of galvanism to the spine. If the heart's action seems to be weakening, cold compresses applied over the cardiac area or alternate applications of hot and cold will be found much more effective and safer in these cases than the internal use of any of the various heart tonics. If there is considerable prostration on the part of the patient, a small dose of morphine is given, and later on another one; but the thorough-going and constant application of physiological measures so nearly meets the patient's needs that in a large number of cases the patient does not even ask for another dose; he voluntarily holds off until he considers that he will

need it worse, and is surprised to find at the end of thirty-six or forty-eight hours that he is really improving. The patient can scarcely be made to believe that the long-looked-for goal has been reached — that he is actually a free man.

The ordinary attacks of diarrhoea that generally set in upon the withdrawal of the drug are anticipated by giving the patient from the very start, every two hours, liberal doses of some one of the compounds of bismuth and adding to this at the first appearance of the diarrhoea moderate doses of fluid extract of coto bark. This ordinarily serves to control the diarrhoea.

During these thirty-six to forty-eight hours the patient has perhaps only secured snatches of sleep, and now that the struggle with the morphine is over, it is necessary to direct the attention to that which is so highly essential for the permanency of the cure; namely, the cure of the patient himself. He frequently imagines that he is cured when he still has persistent insomnia and is weak and nervous; and if he discontinues treatment at this point it will be a miracle if the previous few days' efforts have not been entirely thrown away. The patient must begin to have moderate tonic treatments in the form of various hydropathic measures, reducing the temperature of the water daily, as the patient's capacity to react increases. He still requires a neutral bath in the evening, and perhaps another one some time during the night. He must be thoroughly impressed with the fact that several hours' natural sleep is worth more to him than a whole night of simply non-existence produced by a large dose (and small doses have absolutely no effect) of some sleep-producing drug. In many instances there is but little difficulty, in other cases it takes several days before the nervous system will become sufficiently reorganized to adapt itself to normal conditions; but patient and persevering efforts will invariably succeed.

It is useless to allow the patient to remain camping on the ragged edge of disease; he must be gotten into the current

f health; he must be built up onto solid and substantial strength and vigor. As his ability to digest increases, he is allowed a more liberal dietary of well-toasted breads and grain preparations, and some of the easily assimilated nut preparations should be added to his bill of fare. A system of exercises adapted to his case must be daily carried out; in other words, he must personally assist in working out his own physical salvation. In the bathroom he is given hot and cold jet douches, salt-glows, wet sheet pours, and other hydropathic measures that will encourage in building up a good sound fund of vital resistance, so that he shall not be tempted to fall back upon some such artificial support as morphine in some unlooked-for physical emergency.

When the patient is put through such a process in a careful, conscientious manner, then he is invariably in a few weeks restored to his former place in his family and in society.

Habitual cigarette smokers are barred from positions in the operating department of the New York, New Haven & Hartford Railroad. H. A. Ives, who has charge of making the examinations, says:

In signals: the green stands for safety and the red for danger, and confusion of these colors has caused many accidents. This test is also a sure indication of whether a man is a cigarette smoker or not.

"If an applicant is an habitual cigarette smoker, he is almost sure to be more or less color blind. The constant use of tobacco also injures a man's color sense, but failure on this account is found only in elderly men. The excessive use of liquor is also indicated in this way, although other tests usually stop a hard drinker applying for a position before he gets to this examination."

RECENT DECISIONS ON QUESTIONS OF
INEBRIETY.

The following are taken from the journal of the American Medical Association and other authorities, and show how the questions of responsibility are coming into notice:

DEATH FROM AN OVERDOSE OF MORPHINE. — A policy of life insurance contained this clause: "In the event of the death of the insured from suicide, whether sane or insane, within three years from the date hereof, the liability of the company shall be limited to a return of the premiums paid on this policy." Its construction was called for, or rather the question of the company's liability thereunder was raised, in the case of *Brown vs. Sun Life Insurance Company*, where the insured died from an overdose of morphine. This leads the Court of Chancery Appeals of Tennessee to say, to begin with, that it is a proposition of law, supported by authority as well as reason, that this and similar clauses in policies of insurance, conceding them to be valid, are not infringed by the accidental and mistaking of an overdose of medicine of poison or by the unintentional taking of his life by the insured. The principle or rule, on cases of this character, it goes on to state, is equally supported that suicide or intentional destruction by one's own hand is not presumed. The presumption is otherwise. The company interposing the defense of suicide, whether sane or insane, must overcome this presumption, and satisfy the jury or court trying the case by a preponderance of evidence that the self-destruction was intentional. Here, there was no evidence that the insured was insane. He was of foreign birth, about fifty-eight years of age, and subject to rheumatic attacks. Less than three

hours before his death he called for twelve grains of morphine. Asked by the druggist, who testified that he saw no evidence of derangement at the time, whether he desired it put up in proper doses, he replied that it was not necessary, as he knew how or in what quantity to take it. He had no relatives to benefit by dying and leaving them to get the proceeds of the policy and his other effects. Nor had he been disappointed in love, or in any scheme of business of money-making. Sometimes, however, when suffering from rheumatism, he drank to excess. Under these circumstances, taking the facts in connection with the legal presumption stated, the court holds that it was proper to find as a fact that the insured did not designedly take an overdose of the drug for the purpose of ending his life, although it thinks that the question of whether he purposely took an overdose of the drug, or innocently, ignorantly, or accidentally did so, was about evenly balanced.

INJURIES IN CONSEQUENCE OF EFFECT OF INTOXICANTS. —
The Court of Appeals of Kentucky states one of the exceptions from the insurance contracted for in the case of *Campbell vs. the Fidelity and Casualty Company of New York* to have been of injuries, fatal or otherwise, received in consequence of having been under the influence of or affected by intoxicants. And it says that there seems to be a dearth of direct authority upon the question of what injuries may properly be said to have been received in consequence of having been under the influence of or affected by intoxicants. This clearly, it holds, does not include injuries such as disease resulting from the direct or indirect effect upon the system of the intoxicants. But it thinks that this language applies to injuries received in consequence of the effect of intoxicants upon the nerves, the mind, or the disposition of the insured. For example, it applies where a man's nerves are so unsteady from the use of intoxicants that he loses his balance upon the edge of a precipice and falls; where his mind is so affected by

their use that he does not see a present danger, but deliberately walks into it; or where his passions are so excited, and his temper so warped, that he recklessly does acts in themselves dangerous, or which naturally tend to produce dangerous results from others. Under this view it follows that it is not necessary, in order to come within this exception of the policy, that the insured should be so far under the influence of intoxicants as to be in what is ordinarily termed a state of intoxication or drunkenness, but only so far under the influence of or affected by them that incapacity, nervous or mental, or the excitement of passion, should be such that injury results in consequence of it.

ALCOHOLIC INSANITY AS DEFENSE TO CRIME — In *State vs. Rigley*, the Supreme Court of Idaho holds that where the evidence shows a party made an assault with intent to commit murder, and the defense of alcoholic insanity is set up, it must clearly appear from the evidence that the party making the assault had no deliberate intention of doing so from motive of revenge for a real or imaginary injury. The kind of alcoholic insanity which simply tends to accelerate the party in seeking revenge for either a real or imagined injury, and which is directed solely against the author of such injury, the court declares, is a very different disease from that which is motiveless, and results in a mere "delirious fancy and a muscle raised obedient to its impulse."

INTOXICATION NOT NEGLIGENCE *per se*. — In *Sylvester vs. Town of Casey*, an action brought to recover for personal injuries caused by a fall on a defective sidewalk, the Supreme Court of Iowa condemns, as an incorrect statement of the law, an instruction: "Intoxication is evidence of contributory negligence." It holds that unless it appeared to have been negligence for the plaintiff to be on the walk in an intoxicated condition, or unless the evidence showed that his intoxication in some way aided in bringing about his injury,

his condition would not be available to the town as a defense. Intoxication it does not consider negligence in itself.

NON-EXPERTS CAN GIVE OPINION ON INTOXICATION. — The testimony of an expert, the appellate term of the Supreme Court of New York holds, in *Donoho vs. Metropolitan Street Railway Company*, is not required to give an opinion on the question of intoxication, but the evidence of a non-expert witness in characterizing the action of a person as that of an intoxicated person is admissible.

DRUG INSANITY STILL DEFENSE. — By article 41 of the Penal Code of Texas, neither intoxication nor temporary insanity of mind, produced by the voluntary use of ardent spirits, shall constitute any excuse for the commission of crime; but evidence of temporary insanity produced by such use of ardent spirits may be introduced by the defendant in any criminal prosecution in mitigation of the penalty attached to the offense for which he is being tried, and in cases of murder, for the purpose of determining the degree of murder of which the defendant may be guilty. Before that provision was passed, the courts held that such insanity excused unlawful acts. And the Court of Criminal Appeals of Texas now holds, on the second appeal of *Edwards vs. State*, that until the legislature makes a similar express exception of insanity produced by the recent use of cocaine and morphine from the defenses which one accused of crime is authorized to make, a discrimination must be made between insanity produced by the voluntary recent use of such drugs, and that from such use of intoxicating liquors, and that the former still remains a defense.

CANNOT TESTIFY AS TO SOBRIETY OF PATIENT. — The Supreme Court of Iowa apparently sanctions the rule that a physician may state the fact of his attendance upon a patient, but not his condition, even as regards sobriety. For example, in the personal injury case of *Finnegan vs. the City of Sioux City*, the plaintiff had said that he was not treated

for delirium tremens at the time of treatment for his injury. His attending physician was called as a witness by the defendant, and it was sought to be shown by him that the plaintiff at this time had delirium tremens. But this testimony was excluded by the trial judge, and the Supreme Court holds properly. The matter asked for, it says, was in the nature of a confidential communication, privileged under Section 4608 of the Iowa code. Facts learned by a physician while in the discharge of his duties as such, it declares, are within this section.

COUNTY NOT LIABLE FOR TREATMENT OF PAUPER INEBRIATE.—The Supreme Court of Wisconsin holds, in the case of Putney Brothers Company vs. Milwaukee County, that neither the county board nor any county officer has authority under any specific statute of that state to contract with a private person or corporation for the medical treatment of a pauper for what is termed "inebriety" and entail a liability therefor upon the county, his board being simply a minor incident of the treatment. Inebriates may, indeed, it says, be received into county asylums, under certain restrictions, and may be committed to a county poor-house, and the county become liable for their care in whole or in part, but the statutes seem to go no further. Thus, it appearing that the legislature of Wisconsin has provided certain methods by which inebriety or habitual drunkenness may be dealt with, the Supreme Court thinks it plain that it has excluded other methods, and that the general provisions requiring the county or town to care for and relieve paupers refer to necessary food, clothing, ordinary medical treatment, and the like, and not to medical treatment looking toward the cure of inebriety as a disease. There is, therefore, it insists, no authority resting in any officer or public body to incur liability for such treatment. And such being the case, there can, it holds, be no ratification by the county, as a county cannot ratify the

unauthorized acts of its agents which are beyond the scope of its corporate powers.

SALE OF INTOXICATING LIQUOR IN COMPOUNDS. — Under the law, the Superior Court of Iowa says, in the case of *State vs. Gregory*, a registered pharmacist has a right to compound and sell drugs and medicines, even though they contain intoxicating liquor. But where, as in that state, he is not allowed to sell any preparation or compound intoxicating in character, that might be used as a beverage, whether or not a compound is such that a sale thereof is inhibited is not a question of law, but of fact for the jury. And, in a prosecution for keeping a liquor nuisance, or an unlawful sale of intoxicating liquor, the test would seem to be, and the court holds that the jury should be instructed, that if the liquor sold was compounded with other substances as to lose its distinctive character as an intoxicant, and no longer desirable for use as a stimulating beverage, and was in fact a medicine then the sale of it by a registered pharmacist did not violate the law.

MINNESOTA LAW FOR TREATMENT OF INEBRIATES VALID. — Chapter 260 of the Minnesota Laws of 1897, entitled "An Act to provide for the Treatment of Inebriates by Counties, and Prescribing Rules Governing the Same," the Supreme Court of Minnesota holds, in *Murray vs. Board of Commissioners of Ramsey County*, is unconstitutional, in that it is special legislation as to the affairs of counties, and is not uniform in its operation throughout the state. By this act an attempt was made to remove the objections pointed out by the Supreme Court when it held that a former similar act was invalid which applied to the whole state but attempted to confer powers and duties upon the probate judges beyond the jurisdiction authorized by the constitution. But the limiting, by its terms, of the operation of this second act to counties having a population of 50,000 or more, the Supreme Court does not think a proper classification for legislation of this char-

acter. Nor if the primary purpose of the law was to protect the public from the results of drunkenness by curing the inebriate does it think it defensible to limit the cure to one patient to each 10,000 of population. The purpose of the law being to provide a bounty to needy inebriates, to the end that they might be cured of their disease, and the public thereby incidentally benefited, there was, and could be, the court declares, no reason, necessity, or propriety for discrimination against any of them. In short, it considers the classification on the basis of population, for the purpose of legislating for the relief of such indigent inebriates was purely arbitrary, and holds that the act was as clearly unconstitutional as would be a law providing the care of insane persons or the poor of a limited number of counties and excluding the insane and poor of all the other counties of the state from the operation of the act. In conclusion, the court says that it is not to be understood as holding that a general act, uniform in its operation throughout the state, providing for the treatment of inebriates at the expense of the public, would not be a valid law; for reclaiming the inebriate, who is incapable of self-respect or self-support, and restoring him to society prepared again to discharge the duties of citizenship, directly promotes the public welfare.

The English Society for Study of Inebriety appointed a committee some time ago to examine the question of the heredity of inebriety, and are now making investigations on this subject. To many persons there is great confusion of facts in this field. The family physician is probably in a better position to decide this matter from statistics which come under his own observation. He is able to follow up the history of his patients and determine the exact facts in relation to their history and hereditary tendencies. There is great need for accurately recorded histories which nearly every practitioner can contribute to.

THE ACTIONS OF MORPHINE UPON METABOLISM, WITH ESPECIAL REFERENCE TO INTERNAL SECRETION AND ITS BEARING UPON TOXICOLOGY.

BY EDWARD T. REICHERT, M.D.,

Professor of Physiology in the University of Pennsylvania.

For nearly four score years morphine has held a most important place in the armamentarium of the clinician, yet our knowledge of its physiological properties is fragmentary and unsatisfactory. It is universally recognized that this poison kills almost invariably by paralyzing the respiratory center, but to what extent this paralysis is due to direct and indirect actions is merely speculative. If it be conceded that morphine acts directly upon the metabolic processes of the centers which are specifically concerned in the discharge of respiratory impulses, it must also be admitted that this action is reinforced by the enfeeblement of the circulation, by the lowered temperature, and probably by a universal depression of metabolism, that not only directly but indirectly affects both its anabolic and katabolic processes. That morphine is a depressant of nearly all forms of metabolic activity, both special and general, is evident from many facts: Its power to annul the pangs of hunger and lessen the quantity of food required for subsistence; its lessening of the body weight; its weakening of the reproductive powers of habitues; its enfeeblement of the higher mental processes, and its depression of secretory, circulatory, respiratory, and muscular activity, and of body temperature, etc., all point to a decrease of meta-

bolism so widespread as to extend to the important processes which are concerned in internal secretion and in repair. If morphine be thus so extensive a depressant, it follows that in dealing with poisons of this class we must consider not merely the direct actions which result from the metabolic depression of remote and apparently unrelated structures, by which the centers may no longer be properly supplied with some special forms of pabulum, or with other substances essential to their normal activities.

While our knowledge of the actions of internal secretions is extremely limited, it is sufficient to warrant the belief that they play important parts in many or in all of the vital processes; that they may affect either anabolism or katabolism; that the removal of the thyroids, adrenals, or pancreas is inimical to life because of the loss of their functions of internal secretion, and the consequent effects upon general nutrition; that the respiratory disturbances in uremia are not due to the retention of urinary constituents in the blood, but to the interference with internal secretion by the kidneys that after the removal of three-fourths of the total kidney weight animals may live for weeks, and die of asthenia without there being either coma or convulsions; that the marked respiratory excitement caused by muscular activity is due to substances given to the blood by the muscles; that some of the principles are more or less powerful excitants to the respiratory center, to the heart, to the cardiac centers, or to the vasomotor centers or peripheries; that some are apparently dynamogenics, increasing volitional muscular power and lessening fatigue; that several are of great toxicity, one obtained from the adrenals being among the most powerful poisons known, 0.00009 gram causing marked effects upon the circulation in a dog.

The manifest importance of this subject led me to make a number of experiments on dogs with the view of studying the actions of morphine, not only upon the general meta-

bolism, but their bearing upon toxicology. The calorimetric method was chosen because of its being generally preferable to the others. This method is based on the fact that the heat produced in any structure is proportionate to the degree of metabolic activity of that structure; therefore, the heat produced by the entire organism during any given period is an index of the mean degree of activity of metabolism in all of the tissues. Inasmuch, however, as each structure is to a large extent independent in its chemical processes of those in others, this index can be applied as a standard to each organ only in conjunction with what special evidence exists regarding the metabolism in that organ.

The average minimal lethal dose of morphine for dogs, when injected subcutaneously, is from 0.25 to 0.45 gram per kilo of body weight, the mean minimal lethal dose being about 0.35 gram per kilo. Notwithstanding the comparatively large quantity required to kill, fractional doses are sufficient to cause decided effects. One thirty-fifth of the average minimal lethal dose, or 0.01 gram per kilo, is promptly followed by stupor, depression of the circulation, marked weaknesses, especially in the hind legs, the animal often being unable to stand, and, if so, the hind legs are almost if not completely paralyzed; a fall of body temperature, usually as much as 1.5° to 3.5° C. (2.7° to 6.3° F.); lessening of sensitivity, and many other manifestations of nervous, muscular, and secretory depression, although in many instances the respiratory movements are for a time increased in depth or frequency, or both. An increase of the respiratory rate to 200-250 per minute is not rare. A dose of 0.15 gram per kilo is sufficient to cause paralysis of the hind legs, which may last for two days. The psychic depression, the slow, full pulse, the lowered arterial pressure, the slow, quiet respirations, the intense muscular weakness, and the decided fall of body temperature are among the most marked phenomena commonly observed in morphine poisoning.

Twelve experiments were performed. In each the heart processes were studied for one or two hours before giving the morphine, and from three to five hours after. The results were decided and quite uniform. In the first ten the dose was 0.01 gram per kilo of body weight, in experiment 11, 0.07 gram per kilo, and in experiment 12, 0.15 gram per kilo. In every experiment a fall of temperature occurred, the maxima being 3.66° , 2.10° , 0.91° , 1.57° , 0.93° , 2.30° , 3.75° , 1.69° , 1.24° , 0.93° , 1.35° , and 2.77° , respectively, and the average 1.93° . As a rule, the temperature begins declining during the first hour after morphine; falls rapidly during the second hour, and but little more during the third hour and sometimes continues downward during the fourth hour. In every case the temperature fell during the second hour. In four experiments (Nos. 8, 9, 11, and 12), there was an increase during the first hour, notwithstanding the occurrence of a decrease of both heat production and heat dissipation, the former, however, not being lessened so much as the latter. In five (Nos. 1, 5, 6, 7, and 10), the temperature fell continually throughout the four hours. In two (Nos. 3 and 5) rises of 0.21° and 0.8° , respectively, occurred during the third hour. In four (Nos. 2, 4, 8, and 9), rises of 0.16° , 0.11° , 0.87° , and 0.33° , respectively, were recorded during the fourth hour. The minimum temperature was in two experiments noted during the second hour; in five, during the third hour; in four, during the fourth hour, and in one, during the fifth hour. The extent of the decrease is during the fifth hour. The extent of the decrease is due, in part, to idiosyncrasy, as will be apparent by comparing the figures of the ten experiments in which the dose was the same, and also by a comparison of these with the results in experiments 11 and 12, in which the doses were very much larger.

Heat production was decreased in every experiment, but the effects were decidedly more marked, as a rule, during the first two hours after morphine. The maxima decreases in

heat production being 72, 51, 43, 60, 44, 75, 55, 85, 84, 23, 32, and 67 per cent., respectively, or on an average about 58 per cent. The average in the ten experiments in which the dose was 0.01 gram per kilo was 59.2 per cent. The maxima decreases were recorded in one experiment during the first hour; in eight, during the second hour, in two, during the third hour, and in one, during the fourth hour. Heat dissipation was also decreased in every experiment, and the maxima decreases were 31, 64, 54, 27, 37, 42, 32, 49, 67, 14, 32, 29 per cent., respectively, or an average of not quite 40 per cent., while the average for the first ten experiments was 41.7 per cent. The maxima decreases occurred in two experiments during the second hour; in five, during the third hour; in four, during the fourth hour, and in one, during the fifth hour. The fall of heat production sets in sooner, progresses more rapidly, and reaches a maximum earlier than the fall of heat dissipation. The mean depression of heat production was about 20 per cent. greater than that of heat dissipation.

The actions of morphine upon thermogenesis and thermolysis can, however, be understood better by studying the results of the experiments as a whole than by considering each experiment separately. If we find the mean heat production, heat dissipation, and body temperature of all ten experiments for each hour, and from these data construct composite curves, we obtain a composite picture, as it were, of the typical effects of a dose of 0.01 gram per kilo of body weight. Examining these curves it will be noted that heat production, before giving morphine, was increased to a trifling extent (0.7 kilogram degree). After giving morphine, it fell 6.339 kg., or 26 per cent., during the first hour, and 8.735 kg., or 36 per cent., in addition during the second hour, thus falling 15.074 kg., or about 62 per cent., or to 38 per cent. of the normal in two hours. During the third hour an increase occurred of 5.715 kg., and during the fourth hour a further in-

crease of 0.696 kg., leaving heat production at the end of the fourth hour at only 65 per cent. of the normal.

Heat dissipation before giving morphine was somewhat in excess of heat production, and was increased 1.08 kg. After giving morphine it fell 2.989 kg., or about 11 per cent., during the first hour; 5.86 kg., or about 22 per cent., during the second hour; 1.367 kg., or about 5 per cent., during the third hour, and 5.143 kg., or nearly 20 per cent., during the fourth hour, the total fall being 14.359 kg., or about 55 per cent., or to 45 per cent. of the normal. It will thus be noted that heat production fell only during the first two hours, while dissipation continued falling throughout the four hours, and quite regularly; but it was only during the fourth hour after morphine that heat dissipation was reduced more than heat production. During the first two hours heat production fell about double as much as heat dissipation.

The cause of the decrease of temperature is rendered apparent by a study of the relations of the curves of heat production and heat dissipation. Before giving morphine heat production was a little less than heat dissipation, causing a fall of temperature of 0.19° . During the first hour after morphine both heat production and heat dissipation fell, the former 26 per cent. and the latter 11 per cent., causing the temperature also to fall 0.39° . During the second hour, both heat production and heat dissipation continued decreasing, the former about 36 per cent. and the latter 22 per cent., resulting in a further decrease of temperature of 1.19° . During the third hour, heat production increased, and heat dissipation fell about 5 per cent., but owing to the continued deficit of heat production in relation to heat dissipation the temperature still further declined 0.18° . During the fourth hour an increase of heat production, together with the continued decrease of heat dissipation, causes more heat to be produced than dissipated, and as a consequence there occurred a rise of temperature, this amounting to 0.26° . That the marked fall of tem-

perature caused by morphine is due to a lessening of heat production is obvious from the fact that while both heat production and heat dissipation are lessened, the former is affected the more decidedly.

The cause of the decrease of heat dissipation is doubtless owing chiefly to two factors: First, to compensating actions of the thermolytic mechanism to conserve the body heat; and, second, to a direct depression of the circulation.

The cause of the decrease of heat production is theoretical, and we should not be justified in attempting to reach conclusions as to how and to what extent each structure shared in this depression until after a detailed study of the effects on at least all of the most important metabolic processes, because each tissue that is directly or indirectly affected by morphine has its metabolic activities increased or decreased, as the case may be, and thus takes part in the alterations of the mean quantity of heat produced. Under ordinary conditions, probably five per cent. of the total heat production, in the absence of volitional movements, shivering, etc., is contributed by the metabolic processes in the heart and respiratory apparatus, the remainder coming from the other active structures of the body, and varying in quantity from each in accordance with the degree of activity. In two of the experiments the mean metabolic activity, as shown by the heat production, was decreased as much as 84 and 85 per cent., thus lowering the mean metabolic activity of the body to about 15 per cent., or about $1/7$, of the normal. Deducting from this the heat contributed by the circulatory and respiratory mechanism, the remainder is so small as to indicate a state of vitality bordering on dissolution, and one which must of necessity directly or indirectly injuriously affect every function. It would, therefore, seem unreasonable to assume that so profound a depression, apart from any other consideration, is not shared to an important degree by the metabolic processes which are concerned in internal secretion, and with consequent important results.

If the vital centers be partially or wholly deprived of substances essential to their activities, it is obvious that the most important indication in morphine poisoning is not merely to administer specific excitants to the respiratory and vascular centers, but to reach the causes of the depression and therefore to direct some measures to the processes which are concerned in internal secretion and in repair. In fact, it is more than probable that most of the agents which are, or appear to be, of unquestionable value in the treatment of morphine and opium poisoning have proved so, in part at least, because of their action upon these processes, although entirely unrecognized. Atropine, caffeine, strychnine, cocaine, faradization, cold douches, and prolonged very hot baths will doubtless generally be regarded as the most effective physiological antidotes, and with the exception of atropine each will be recognized as an agent which more or less decidedly excites both special and general metabolism.

As regards atropine, I have already called attention to the fact that clinical, experimental, and toxicological data demonstrate clearly that this substance cannot be regarded as a reliable respiratory stimulant in morphine poisoning. Furthermore the results of subsequent investigations not only fully verify this statement, but also show that while in some cases atropine is of value, in most cases it is worthless or positively harmful. Upon the circulation it is also uncertain in its actions, therapeutic doses sometimes increasing the pulse and the arterial pressure, and sometimes decreasing both, etc. Atropine is claimed to be in therapeutic doses a depressant to the cardio-inhibitory apparatus, and a direct stimulant to the heart; a stimulant to the vasomotor center and peripheries; a delirifacient, and sometimes an excitant to thermogenesis, increasing body temperature in this way. There is very little evidence which indicates that this substance is to any marked degree a metabolic excitant. In fact, apart from its cardiac, vasomotor, and cerebral excitation, and its direct stimulation

of the respiratory center (which may more than be offset or antagonized by the effect of the depression of the pulmonary fibers of the vagi and other factors), it is probable that it is an almost universal metabolic depressant, and that its reputed value in opium poisoning is owing largely to the circulatory and cerebral excitation, coupled at times with a more or less important increase of the rate or depth, or of both rate and depth, of the respiratory movements.

Caffeine is a very general metabolic excitant, and there is evidence which leads to the belief that in opium poisoning, besides its value as a direct respiratory, cardiac, and psychic stimulant, it is of indirect value by affecting internal secretion through actions on the nervous, muscular, and secretory structures. It increases body temperature by increasing heat production, and it in some obscure way affects general nutritive processes, allaying the sense of hunger, apparently lessening the quantity of urea formed, facilitating assimilation, and acting directly upon the muscles to increase the activities of their chemical processes.

Strychnine is stated to be a powerful and certain respiratory stimulant in morphine poisoning, but the experimental and clinical evidence is far from convincing, excepting when strychnine was pushed so far that the individual was on the verge of convulsions, and in about as much danger from one poison as the other. I have shown that when it is given subcutaneously to normal dogs, and even in doses so large as nearly one-half the minimal fatal quantity, it is without any special effect on the frequency of respiration movements. In man, in therapeutic doses, its general tonic influence is simply shared by the respiratory center in common with other structures, and its effects upon the respiratory movements are too feeble to be of any important value in states of depression so profound as in morphine poisoning. That strychnine will, however, powerfully and certainly excite the respiratory center when injected intravenously in doses so large as to cause

dangerous effects is without doubt. But entirely apart from any direct action upon the respiratory center, suppositions otherwise, this substance may be of value because of its widespread tonic powers in restoring the normal activities of trophic and allied centers.

That it exercises an influence upon internal secretion is indicated in its stimulation of the salivary glands, by the increase of heat production as shown by the rise of body temperature, and by its favorable effects upon nutritive processes generally.

Cocaine is among the most powerful of respiratory excitants. In many ways it is apparently a powerful physiological antagonist to morphine. It is a psychic, respiratory, cardiovascular, muscular, and secretory excitant, and it decidedly increases body temperature by increasing heat production. All indications point to its being a very general and potent metabolic stimulant.

Faradization is, as is well known, an excitant to both special and general metabolism.

Cold douches decidedly affect the metabolic activities of the skeletal muscles, increasing chemical tonus and heat production.

Prolonged very hot baths tend powerfully to reflexly excite the respiratory center by actions upon the cutaneous nerves, and to restore the normal temperature of the body and thus favorably influence all forms of metabolic processes.

While it would be futile to contend upon a basis of these generalities that the antidotal values of these several agents (not considering atropine) are due in any large measure to their actions upon the metabolic processes that are concerned in internal secretion and in repair, it seems equally futile to assume that these processes are not depressed, and therefore take part directly and indirectly in the causation and intensification of the lethal symptoms; but what degree of importance is to be attached to the consequent effects of this depression

upon the respiratory and circulatory mechanisms is of course problematical.

This subject opens a wide and laborious field of research, and considerable experimental work along different but co-operative lines will have to be done before we can hope to obtain data of sufficient scope to enable us to reach satisfactory conclusions. Nevertheless, it must be admitted, first, that the profound depression of general metabolism, even by sublethal doses, together with the probable involvement of the processes concerned in internal secretion and in repair and their consequent effects, must be considered among the important factors of treatment of morphine poisoning; second, that further research will probably show that we have in this depression an agent in explaining, in part at least, the values of certain physiological antidotes, and, on the other hand, the ineffectiveness of others, which, upon theoretical grounds, should prove of signal power, and third, that if a means be found to restore the normal processes concerned in internal secretion and in repair, the counteraction of the direct actions of morphine upon the metabolic processes which are specifically engaged in the discharge of respiratory impulses will probably be accomplished with far less difficulty than heretofore experienced.

The decline in the birth rate and the increase of deaths has caused alarm in several European nations. The narrow margin between the two in France is attributed to the increased use of alcohol. The death rate of infants has been steadily increasing until now it is nearly 200 per 1,000. Similar conditions exist in England. The most potent agency to produce this is alcohol, which weakens the vital forces, destroys the reproductive powers, and increases the mortality. The problem is a very serious one which is attracting attention in all circles.

ALCOHOL IN RELATION TO WOMEN.

BY DR. HEYWOOD SMITH.

I think we may take it for granted that drunkenness is on the increase among women, and that not only among the poor, but also to an alarming extent among the well-to-do. And we may the more readily do so, as, in answer to an invitation from the Charity Organization Society, a meeting was held in the Royal United Service Institution on the 29th of last month to consider the question of intemperance among women, and to suggest some remedy for the evil; and it was then given as the opinion of the majority of the speakers that intemperance was greatly on the increase among women.

That such is the case witness the provision that is being made for the reception of the criminal inebriates into reformatories that are being established in order to carry out the requirements of the inebriate acts. In those already opened there is accommodation for about 50 men, and for about 252 women, or in the proportion of 1 to 5. So, too, the number of convictions under the act in 1899 were 2 males and 90 females. Again, in certified retreats there is provision for 131 men and 174 women. And in the recent epidemic of poisoning among beer-drinkers in Manchester and its neighborhood the majority of the victims have been women.

Now, sir, why is all this? Why are so many women becoming drunkards?

(1) First, perhaps, to put it broadly, the increasing independence of women may be a factor; *i. e.*, women during the last 30 or 40 years act more than formerly according to their

own discretion; they are by common consent, or, if not by consent, yet by custom, accorded more liberty, a liberty which it seems some of them proceed to abuse.

(2) In the struggle for life which this independence engenders there is often the element of failure or over nerve strain, and women, too weak in many instances to bear the strain, fly to stimulants.

(3) The anxieties connected with the home and children, especially where to these are added, it may be, a husband's neglect, or the brutality of a husband who drinks.

(4) We must not omit the influence of pain in driving some women to alcohol as a remedy. To women, not only to the poor, but the rich, come often periodic waves of pain, and at those times the advice of injudicious friends, nay, even of their own mothers, is to take some hot gin and water.

(5) I am sorry that I cannot exclude the not unfrequent carelessness of our own profession, for medical men are too apt, should they deem it necessary to prescribe alcohol, to say, "Oh, take a little wine," leaving it to the patient to determine the dose; whereas, did they realize that alcohol was so insidious a poison as it is, possessing as it does the seductive power of inducing the exhibition of larger doses, they might hesitate before they placed without limit such a dangerous drug in the hands of their patients, and prescribe it in more accurate doses, and wrapped, perhaps, on some less pleasant taste.

(6) Among the well-to-do the habit of drinking champagne and other wines at dinner, fosters a taste that tends to enthrall rather than to leave the partaker a free agent. So-called moderate drinking is a snare, as few have sufficient self-control to determine what moderate drinking is.

Among men some of the causes of inebriety are the temptations arising from boon companions; there existing a sort of idea that to refuse to drink when invited is a kind of insult or want of good-fellowship. Again, how often business transactions are sealed by a drink, though happily this is not so fre-

quent a habit as formerly. To these causes must be added business and domestic troubles, and but too often a careless, untidy, or nagging wife drives the man to his only club, or public house.

Men drink in company, women too often in secret, making the detection of the early stages difficult or almost impossible.

We will now just see how this evil of drinking affects men and women.

1. When a man comes home drunk he comes as a terror to his children, who shrink on hearing his footsteps; he quarrels with his wife, as to is food it may be, he may be violent and smash up his little furniture, and with the broken pieces assault his long-suffering partner. But when a woman drinks she neglects her children, pawns their clothes, leaving them exposed to cold and disease, she neglects her home and her husband, driving him probably also to drink, and so leading to assault and perhaps murder.

2. Again, when a man is imprisoned for some consequence of his drunkenness the family is indeed deprived of the chief bread-winner, and they are exposed to want and privation, which may, however be mitigated by the industry of the wife; but when the wife is shut up the family is deprived of the mainstay, the husband is left without any one to care for him or provide his food, the children are left to run about uncared for and exposed to all sorts of dangers, and on her coming out of prison her drinking habits are as bad as ever, and the house has ultimately gone to wrack and ruin.

I have hitherto referred only to wives, but woe betide that solitary woman, whether the unmarried or the childless widow, who, companionless and despairing in her very solitude, has recourse to drink in order to infuse, if possible, some measure of so-called happiness or oblivion into her probably objectless life. For these sad and unhappy cases, the victims of a veritable disease, measures must be taken (1) to prevent them having access to the poison that is destroying their existence,

(2) to help them in their fight against the terrible onsets of the drink-crave, and (3) to build up their health during the process, which, in most cases, is associated with a deeper despair and hopelessness. And in our dealing with these suffering sisters of ours let us ever remember that a tender and human sympathy will do more to wean them from the habit than any measure of forcible coercion.

Among the well-to-do, facilities for women obtaining drink are being multiplied. The granting of licenses to grocers is one of the chief of these. The housekeeper has no necessity to enter a public house, she has only to go to her grocer and have the bottle of wine put down as candles or raisins or some other commodity, and even the lady in her carriage can there obtain all she needs without even entering a wine merchant's establishment. And for those who have no shrinking from entering a public house there are now being fitted up ladies' bars, comfortably furnished, and in some cases with a separate, unobtrusive door, where the enemy lies in wait to compass their destruction.

The drink habit lays hold of women insidiously, and of its effects one of the most frequent is the habit of lying — a pretty constant symptom of the disease; then comes untidiness, poverty, dirt, ruin, and death.

But before death closes the sad scene there is another effect that is becoming deplorably frequent, and that is insanity; the proportion being of two women to one man, and the seeds of insanity once sown bring forth fruit in succeeding generations. — *Temperance Record.*

Professor Debaul of Paris declares that the inability of the French women to properly nurse their children depends in a large measure on the use of alcohol. This diminishes the secretion of milk and produces degeneracy, both in the mother and offspring.

REPORT ON HEREDITY.

BY T. D. CROTHERS, M.D., CHAIRMAN.

At the meeting of our association in Brooklyn, N. Y., June 6, 1888, the late Dr. T. L. Mason, then president, made some remarks on the necessity of careful study of the heredity of inebriety. His opinions were sustained by extended remarks from Drs. Joseph Parrish, Hiram Calkins, A. P. Meylert, and others. Dr. Crothers moved that a committee of five be appointed to gather statistics showing the influence of heredity in the causation of inebriety, and report at some future meeting. This was carried. Dr. Crothers was appointed chairman of the committee. Associated with him were Dr. Parrish, L. D. Mason, Albert Day, and A. P. Meylert. Both Drs. Parrish, Day, and Meylert, as well as the president of that year, Dr. T. L. Mason, have passed over into the other world, and only our president and myself are here to report. Dr. Mason has on several occasions during the past few years presented some conclusions from his own observations. I have at different times in the *Journal of Inebriety* reported certain general conclusions from studies along this line. Now, after a long interval of thirteen most eventful years, I wish to offer an abstract of a report which will be made in the near future, and to call attention to some of the lines of study which have been pursued in this work to find out the influence of heredity in these cases. Up to this time our studies are based on fairly accurate histories of 1,744 cases of inebriety. Over 1,300 of these persons have come under my personal care and observation, and many of the facts have been verified and confirmed. The remaining

four hundred are histories of persons reported to me by physicians and others. There is every reason to believe that they are generally correct, particularly as they do not vary much from similar histories made from personal studies.

Many of these histories have been given without personal bias or interest, and usually come from instances under the direct personal care of the reporters. The histories which I have gathered do not present anything startling except in certain directions and particular classes. Altogether they seem to bear out and confirm the opinions of others who have made similar observations along these lines. These studies have not been confined to heredity alone, but have included every condition and circumstance of causation which could possibly enter into the growth and development of inebriety. To all who have made any studies in this direction the difficulties of securing accurate ancestral history are prominent. The sources of error are numerous and the accidental and designing motive of the reporter to mislead are always marked. In many instances the patient will exaggerate the conditions and diseases of his parents with a delusional satisfaction that it will in some way contribute to lessen the magnitude of his condition. When he understands the true object of the inquiry often some facts will be concealed and others exaggerated, according to some unknown motive or purpose in his mind. If he is not mentally defective beyond a certain point he may possibly give many facts, always from his standpoint. Fortunately, a little experience in this direction will enable one to discriminate between the facts and fictions in the statements of the patient. On one occasion two members of the same family came under my observation, one as a patient. Both gave a negative history of heredity, and while both drank, one to excess, and the other to moderation, they failed to give any history of either exciting or predisposing causes. Their appearance and manner showed much mental feebleness with childish caution, and almost certain indications of inheriting

a predisposition to inebriety and idiocy. Later it was found that both parents were inebriates; the father was a wine-drinker at meals, and the mother was an opium-taker, coming from a neurotic family, and yet both sons denied that their parents were in any way intemperate. In other instances, a history of drinking parents is surrounded with secrecy and concealment, which the children study to increase as if it was a religious duty. In many cases even after elaborate inquiries have been made and clear histories of cases brought out by some accidental inquiry a whole chain of inherited tendencies and psychopathic predispositions are discovered. In one instance, the son of an eminent clergyman, was supposed to have acquired the inebriety from injury and bad company. Later, an acquaintance with his parents brought out the fact of his father's secret drinking, also distinct psychopathic tendencies from both sides of the family. The assertion that a study of the ancestors gives a clearer conception of the nature and form of inebriety, than a knowledge of the drink symptoms, is amply confirmed by experience. I have repeatedly pointed out that from a knowledge of the parents, their environments and modes of life and living, also from a general history of the environments of the children, inebriety and other neuroses can be predicted with almost astronomical precision.

I would say farther that from any extended study of these cases there appears a uniform class of facts with certain positive sequelae which rarely vary, the breaks and variations which appear are largely due to the reporter's failure and want of familiarity with facts. The heredity of inebriety is established from such studies beyond all possible question and doubt, and where any obscurity prevails, it is due to a want of accurate knowledge. Atavism or the passing over from one to a third or fourth generation of inherited predispositions, reveals a great variety of exciting and retarding causes which necessitates renewed study and inquiry concerning the facts and their meaning. The central conclusion which cannot be

stated too strongly and to which the exceptions only bring stronger proof, is that the injury from alcohol to the cell and nervous tissue is transmitted to the next generation with absolute certainty in some form or other. It may not always appear in the drink and drug symptoms, but the injury breaks out again in some neurotic trouble, defect, or predisposition. A study of these cases may be summed up in the following general classification. This is given not as a complete division, because many of the causes of one lap over into the other and intertwine so numerously that it would be almost impossible to separate them, but is presented as a general list of causes which have appeared most prominently in these studies. In 1,744 inebriates, 1,080 had a distinct history of heredity. Next came disease, injury, shocks, strains, and drains, of which 390 cases were traceable to these causes. One hundred and eighty cases were clearly due to starvation and poisoning, and 85 cases were traceable to the surroundings, exposure, ignorance, and mental contagion. In only 9 instances were the causes so complex and obscure that no classification could be made. Confining my attention particularly to heredity which will give some idea of the influence of this force in the causation, the following are some of the facts:

1st. In the 1,080 cases which were classified under heredity there were several distinct forms and types. In these there seemed to be largely transmitted a special predisposition to find relief in spirits, or a condition which the older writers called a diathesis. In most of these cases there was mental instability and want of nervous control, and often a species of psychical pain and unrest which found greatest relief from the use of spirits. The first general classification I have termed the direct heredities where the drinking of the parents or grandparents reappeared in the children. Of the 1,080 cases, 430 were classified under this head. In a careful study of these cases there were some very remarkable examples of typical cases. Persons who began to drink at the same period of life

and under the same conditions as those of their parents, thus, in one instance, for four generations every member of the family was temperate and well up to from forty-five to fifty, then suddenly without especially exciting cause the males began to use spirits or narcotics and the females also broke down in about the same way, using drugs, and all became nervous invalids, developing a great variety of neuroses and dying in five or six years after. At one time six members of this family were spirit and drug-takers.

In another instance, every male member of two generations had an alcoholic period of from twenty to twenty-eight years of age, then abstained, some of them becoming very active temperance workers. Quite a large number of persons in neurotic families after a variable drink period become converted and abstain for the rest of life. The physiological change and dying out of the drink symptom was always associated with religious emotions. There seemed to be transmitted from father to son and daughter a constitutional tendency for a revolution of conduct, habits, and character at about thirty or forty years of age, and always associated with intense religious fervor and change. These cases are very remarkable, and offer a field of very interesting studies. The ordinary cases of direct heredity are those in which the children drank, with or without any exciting causes, in early or later periods of life. In many cases the use of spirits began in infancy at meals and as a tonic or medicine, and was continued until finally an addiction was created. Probably the largest number of persons whose parents drank were early allowed the use of spirits in moderation. These direct hereditary cases are always more or less debilitated and are types of perverted and retarded growths with defective restorative powers. Delirium is more often seen in this class, and also epileptoid conditions, with general criminal degenerations.

The second class of heredities are termed indirect, and 224 of the whole number were classed under this head. They

usually were persons whose grandparents, one or two generations back, had been moderate or occasional excessive users of spirits. In many instances the father had a short drink period in early life and then became an abstainer, or both parents had drunk wine at meals for a certain period, or the mother had been given wine or spirits during pregnancy, lactation, or for some particular illness. In many of these cases both parents were often rigid abstainers while the grandparents or some remote ancestor had been an inebriate. An example is that of a family of a noted distiller whose parents had been abstainers for two generations back, who after a life of great sobriety drank himself to death between fifty and sixty years of age. His three sons all became inebriates at the same time of life, and died soon after. There seems to be in these indirect heredities some persistent transmission and continuation of the predisposition to find relief in alcohol. Like seed in the ground this tendency may remain dormant for a long time until from the application of peculiarly exciting causes it bursts into activity. When such causes are absent all desire for spirits is lost, but when they occur there seems to be no power of resistance. Along these lines appear the remarkable cases of atavism where the drink symptoms gather and break from unknown causes and at unexpected periods. Thus, in a drinking family there may be many most temperate persons, and later on their descendants may go to the other extreme. It is impossible at present to explain the phenomena of this alternate slumbering and waking up of the drink symptom long after it is supposed to have died out.

The third classification made I have called the psychopathic heredity, and placed 290 under this head. These cases differ from the others in the fact that they are psychopaths or persons in whom some defect of brain and nervous system seems to persist generation after generation. Often such persons are very enthusiastic partisans of the temperance cause or eloquent emotional preachers, excitable and brilliant poli-

ticians and lawyers, and persons who belong to the class of geniuses who live on the border lines of alternate sanity and insanity. Some of the most brilliant men of the country belong to this class. Their eccentricities of conduct and thought, their moral and physical paranoiac states are continual sources of surprise and wonder. Far back the race stock seems to have started down on the road to dissolution. Inebriety, and drug-taking are common symptoms. Thus, the sons of most excellent parents become the most degenerate inebriates, and the children of these degenerate parents become model temperance men. Paralysis, epilepsy, hysteria, and many of the obscure insanities alternate one with another. The wonder is that dissolution does not occur earlier and why extinction does not destroy the families entirely, is still more remarkable. A wonderful, vital resistance to disease seems to come down through the races. All forms of neurasthenia call for relief from narcotics and rarely organic growths or acute inflammations follow. The degeneration always appear first as psychical. Criminals, tramps, musicians, and a large proportion of the mentally submerged belong to this class. The appearance of heredity in the children of inebriates depends upon unknown conditions which cannot be predicted. The same with insanity, epilepsy, and general paralysis. This class furnishes the most interesting, confusing, and least understood of all the hereditary cases of inebriety.

The last classification I have made is under the head of epileptoid types of heredity, of which 49 persons were grouped. These cases were marked by the sudden, unexpected, and self-limited drink storms. They were not periodical drinkers altogether — they were the class of persons whose alcoholic symptoms were of the cyclone character developing out of the clear sky in an impetuous storm, and then disappearing and leaving little trace behind. The ancestors of these persons were always noted by this sudden, explosive, nerve energy. Persons who were moderate or occasional drinkers who suffered from ex-

plosions of anger, and whose whole conduct through life was an alternation of wild extremes. Mentally they were continually changing in politics, in religion, in business, and society, practically they were frontiersmen in every department of life, always leading forlorn hopes and always defeated; physically suffering from diseases and making remarkable recoveries — at one time using spirits for some purpose, then changing to other remedies, and always under an obsession, and possessed with some idea which seemed to dominate every other conception of life and living. From these classes come persons who have distinct drink periods called "sowing wild oats," who then abstain and become temperate people. Women who come from this ancestry are drug-neurotics, Christian scientists, faith curers, and invalids of all grades and descriptions, persons whose life is a perpetual struggle to attain physical comfort and persons in whom the failures only stimulate to greater efforts in other directions. Often both spirits and drugs leave a psychical impression which permanently impresses the organism predisposing it to seek relief from this source ever after. Such persons are secret drug-takers or spirit-users, and often belong to the class of moral paralytics. One very prominent family in the business circles of Boston has made some stir in the world by their alternate drinking, dishonest, and insane conduct, and great extremes of character. Their ancestry was of this class of the epileptic types of inebriates.

In this brief report I have not attempted to give any subdivision of the classifications of heredity, but have confined myself entirely to the more prominent classes. Other subdivisions have been marked out and studied. It is sometimes difficult to give proper names to these subdivisions. One of these classes is composed of persons who, knowing their family history, become possessed with the idea that they must do as their ancestors did. A kismet possesses them to do the same thing their

parents did. They drink about the same time and under the same circumstances and in the same way, ending always about the same. This is a kind of mental heredity and obsession which is very marked in many instances.

Another class is born with a precocious sexual instinct which seeks gratification, and apparently without limit or control. Such persons soon react into spirit and drug-taking. Their parents are usually gourmands and wine-drinkers at the table.

Another class inherits from moderate drinking parents a food craze and abnormal hunger, which never seems to be satisfied. This early provokes dyspepsia and inebriety.

Still another class from drinking parents exhibits explosive nervous energies. Such persons both think and act in a delirious exhaustive way. They are either buoyed up with the highest kind of mental exaltation and muscular effort or depressed below the levels into the verge of melancholy. I have not mentioned anything of that remarkable class of transferable neuroses or diseases which break out first in one form and then in another. Highly neurotic parents who drink either to excess or moderation, are always followed by children who are liable to exhibit any form of nervous disease known in the books, and change rapidly from one to the other. A field of remarkable cases and governed by unknown psychical laws and conditions awaits study in this direction.

It is only proper that I should refer at this time to a report which I made public last year on "Morphinism Among Physicians," and read before the New York State Medical Society. This report was read by title before our society and it was thought best to give it more publicity from the interest which would grow out of it. In 1890 at our annual meeting, the subject of the prevalence of morphinism among physicians was mentioned by Dr. Mattison. A resolution was offered, appointing a committee to gather facts in this direction, Dr. Mattison as chairman. He, having dropped out, I became

chairman, and during the ten years made the studies which were embodied in this report. I may say farther that this report attracted great attention, and a very wide discussion which followed has brought the most gratifying confirmation of its statistics. Studies of morphinism, cocainism, and other drugs have been combined with this committee, and we appeal to all our readers for facts and histories which bear on the prevalence of these neuroses.

COCAINE LEGISLATION.

The Tennessee legislature passed a bill last month prohibiting the sale or presentation of cocaine save on a physician's prescription, and providing for a penalty of from \$100 to \$500 upon conviction of violation. A similar measure, though extended to the sale of morphine, opium, and chloral, is before the legislature of Missouri. A similar measure in Georgia was killed through ignorance of its purpose on the part of a few legislators. The fate of a like Alabama measure is unknown. It was reported some time ago that the city ordinance in Knoxville, Tenn., restricting the sale of cocaine to physicians' prescriptions has been partially defeated by the action of certain physicians in selling prescriptions to habitues, and it was declared that some step would be taken to remedy this.

Pennsylvania and Cocaine and Morphine Evils.—The following clause has been inserted in a bill which has been introduced in the legislature to prevent pharmacists from selling narcotics to habitues: No person shall sell or furnish morphine, or its salts; cocaine, or its salts; opium, or any preparation containing ten per cent. or more thereof; or chloral hydrate, to any person known to be addicted to the habitual use of any of these articles as a narcotic, nor to any person when written notice has been given to the proprietor that such person is addicted to the habitual use of any such articles as narcotics.

Abstracts and Reviews.

DIAGNOSIS OF TOBACCO AND ALCOHOLIC HEART.

Dr. Bruce of London, in the Lettsomian lectures "On Diseases and Disorders of the Heart in Middle and Advanced Life," says: "Alcohol undoubtedly plays an important part in many instances regarded as overwork and worry and nervous exhaustion, both of men and women — alcohol taken to enable more work to be accomplished, to steady the nerves, to promote sleep, to drive away care, or to relieve the faintness which it has itself induced. . . . What I have just said in connection with nervous cases of cardio-vascular affections brings us naturally to that important group of agents which may be summarily called extrinsic cardiac poisons — alcohol, tobacco, tea, coffee, and lead.

"Alcoholic heart occurs both in men and women; tobacco heart is extraordinarily common in our own profession, and common in clergymen and in retired members of the public service; tea, coffee, and cocoa heart I have met with principally in students.

"We have in tobacco heart a single distinct influence at work — one that is universally acknowledged to affect the heart and vessels, and the physiological action of which is understood; one, further, that can be removed, perhaps not without some difficulty (for I had a patient plead for his pipe with tears in his eyes), and certainly can always be resumed with remarkable readiness — in a word, a most favorable sub-

ject of observation by experiment. It is well, too, to begin the study of tobacco heart in young men, whose circulation is still structurally sound, and thereafter to follow up the subject in middle-aged and old persons. Adopting this line of inquiry, I have found that the uncomplicated effects of tobacco on young, healthy hearts, as they present themselves clinically, are palpitation in every instance, a sense of irregular action, post-sternal oppression and pain in half the cases, and in one out of every eight sufferers either angina or uncomfortable sensations in the left arm. Faintness or actual faints occurred in one-third; and giddiness and a feeling of impending death in a smaller proportion. Turning to the physical signs, the heart proves to be of ordinary size in fifty per cent. of the patients; in a few it is very slightly enlarged; the precordial impulse is often very weak, but occasionally increased in force and frequency, and almost as often irregular as not; the pulse tension, with insignificant exceptions, I have always found low. Very interesting, in the light of what I shall tell you later on, is the fact that of twenty of these patients complaining of the heart, not one presented a cardiac murmur beyond a weak mitral systolic bruit, varying with posture or decubitus.

"Now we are in a position to study the tobacco heart in a man of forty, and again let us begin with a man who is sound, active, and healthy otherwise. He complains of his heart, and recognizes willingly (for he belongs to our own profession) in the discomfort and anxiety from which he suffers the penalty of having smoked for years the strongest and blackest tobacco that he could buy. Yet his heart is not enlarged, and the cardiac sounds may be described as ordinary were they not peculiarly irregular, the frequency changing every moment, and a falter occurring at short intervals. There is not a trace of murmur to be found in connection with the valves and offices. At ages over forty a clinical study of the tobacco heart is highly instructive from a practical point

of view. Whilst palpitation is still the common complaint, pain, including angina, is put forward more prominently, and so are faintness, actual faints, a feeling of impending death, and a sense of cardiac irregularity, each intermission being accompanied with a sudden stab through the precordia. In these subjects the heart is more frequently found to be large and feeble; the same weak systolic murmur is occasionally to be heard; the radial pulse is often irregular, and the vessel wall thick. This you will notice is a combination of symptoms and signs sufficient to alarm the casual observer. But when we examine it more deliberately, in the light of our study of the tobacco heart in young subjects, on the one hand, and of our knowledge of the normal or natural condition of the heart and arteries at sixty, on the other hand, we are able to reassure ourselves and our patients. We are justified in concluding not only that every cardio-vascular lesion which may happen to be found in tobacco smokers is not put to the credit of tobacco, but *vice versa* — and this is of more interest to us in our present inquiry. — that precordial pain, angina, faintness, and irregular pulse, in a man of sixty with full-sized heart, are not to be hastily regarded as evidences of grave disease without farther inquiry as to his habits. The cardiac enlargement and large pulse may be nothing more than the result of a life of bodily and mental activity, the precordial distress may be the result only of tobacco. How very necessary this caution is will be impressed upon your consideration by the two following cases:

“The first is that of a man, aged sixty, actively engaged in professional pursuits, who first suffered from precordial pain of an alarming character four years and a half ago, and has had attacks since, particularly during exertion and after meals. One day last autumn, at the end of many hours' hard work, accompanied by at least eighteen cigarettes, he was rushing off to dine with a friend when he was suddenly seized with precordial pain which he described as fearful,

radiating down the left arm. He broke into a cold sweat, thought that his last hour had come, and for a short time had impairment of consciousness. Shortly after this event he took the advice of his doctors and gave up tobacco — shall I say for a time? — and from that day to this (now six months) he has had no further trouble with his heart.

“The second case is equally striking. A man aged fifty-five, of fairly active disposition, and somewhat full habit of body, was suddenly seized with angina pectoris in October, 1899. The pain was of a dull, bursting character over the region of the heart, and it passed into the left shoulder, down to the elbow, and settled particularly in the wrist. At the same time there was pain in the upper maxillary region. The heart slowed down from seventy-five to fifty, and the sufferer felt that he was dying. From that time, anginal attacks occurred in rapid succession, five, six, nine, or even eleven in a single day; occasionally they came on in the night. This experience continued for nearly two months; indeed, it was six months before the angina finally ceased. It was instantly relieved by amyl nitrite; nitroglycerine was unsuccessful. In the course of giving advice to this patient I fortunately discovered that he had just laid in a stock of 2,000 cigars. The line of treatment was obvious, and the result has been, as I have said, complete recovery.

“I have dwelt on the subject of tobacco heart perhaps longer than was necessary, addressing, as I am, a meeting of practitioners of experience, and not a class of clinical students. I have done so to bring home to use an important consideration which we are all apt to overlook in diagnosis, and still more in treatment — namely, that whether in an ordinary senile heart, or in a heart that is the seat of chronic valvular disease, or in arterial degeneration, something more than the pathological changes have to be regarded in many instances — usually some entirely adventitious disturbance, which alone calls for treatment — such as indigestion, flatu-

lence, worry, a bronchial catarrh, or it may be free indulgence in tobacco, tea, or coffee.

The Heart in Alcoholism.

" Let us pass on now to consider from the clinical point of view the effect on the organs of circulation of another morbid influence of a definite kind—namely, alcohol, or perhaps more correctly alcoholism, leaving on one side the questions of form and strength of the drink taken and its purity.

" The direct effects of alcohol on the heart and vessels are by no means so easily determined as those of tobacco. In the first place, they are complicated with many indirect effects which it produces on these organs by deranging the functions of alimentation and assimilation, the nervous system and the kidneys, and with the secondary effects on the vessels and heart of chronic nephritis due to the same cause. In the second place, as we saw in my first lecture, alcoholism is very commonly associated with nervous strain, with gout and goutiness, with tobacco, with syphilis, and not uncommonly with two or more or all of these together.

" Eliminating as far as possible these sources of error by careful selection of cases, I find that the alcoholic heart presents clinical characters as a whole very different from those of tobacco heart, which we have just studied. The most striking and important of these are the evidences of actual pathological change in the size of the heart and the condition of the myocardium. We have found no evidence that tobacco causes serious cardiac enlargement. Of twenty-eight cases of alcoholic heart, on the other hand, which I examined clinically in connection with the present inquiry (the average age being forty-six), only two hearts were of ordinary size, and as a matter of fact both of these patients were under forty years of age. This result is in accord with my pathological observations. For instance, I have followed the condition of

the heart carefully in an intemperate man of forty-three, and *post mortem* found the heart to weigh seventeen ounces, to be universally dilated in all its chambers, and to present enlargement of the mitral opening without valvular lesion, corresponding with a weak apex systolic murmur heard during life. These results are also in accord with those of Dr. Maguire's cases of acute dilatation of the heart from alcoholism, which he recorded as long ago as 1888, and one of which occurred in a man of twenty-three. Dr. Mott has found fatty degeneration of the myocardium in patients dying suddenly during alcoholism. With hardly an exception the precordial impulse is weak; indeed, it is often imperceptible; the sounds are small and feeble, and may be almost inaudible; in twenty per cent. of my cases a weak apex systolic murmur could be heard, varying with posture, and from day to day, significant, no doubt, of leakage through a dilated mitral opening. The alcoholic heart is irregular and accelerated in about half the cases. The pulse tension is usually low; in one-third of the instances the radial artery was sclerosed; in one-fifth of them there was slight albuminuria; the legs may be edematous. The complaints with which the patient comes to us are commonly of palpitation of the heart, faintness or actual faints, and precordial pain, but it is very interesting to note that I observe angina pectoris is rare in the alcoholic as compared with the tobacco heart in the ratio of four to fifteen per cent.

"It is unnecessary for me to attempt to give a sketch even outlining the subject of either acute or sub-acute or chronic alcoholism. I would rather mention a form of acute alcoholic failure of the heart, of which I have recently seen a case, but which appears to be rare. A middle-aged woman at the end of each of her repeated bouts of active alcoholism has violent sickness, prostration passes into a collapse, and for twenty-four hours or more she lies flat on her back with all the phenomena of what may be called acute air hunger; she breathes loudly and deeply at the rate of thirty-six per min-

ute, with groaning expiration. The expression is alarmed, despairing, and imploring; the nose is pinched; the surface is livid and cold; the breath is cold; the pulse is practically imperceptible at the wrist, and yet the precordial impulse is both strong and extensive. The condition is at once one of collapse and urgent dyspnoea, much as in one form of so-called diabetic coma, and it is further remarkable in that it may pass off quite suddenly after having lasted, as I have said, for many hours. It is difficult to resist the conclusion that in such a condition as this some product of alcohol present in the blood is the cause of the remarkable phenomena.

"The course of alcoholic heart in older subjects gradually becomes affected by the appearance of cirrhosis of the liver, Bright's disease, neuritis, and possibly dementia; and the method of termination is very various, including ordinary cardiac failure with dropsy. Sudden death occasionally occurs." — *British Medical Journal*.

THE ALCOHOLIC PSYCHOSES.

Wernicke's recently issued work on Psychiatry (*Grundriss der Psychiatrie*, Leipzig, 1900) divides the subject matter in a most simple fashion. After a general section on psychophysiology, he considers the chronic insanities first under the term paranoia taken in its widest sense. This phase of alienism he appears to regard as synonymous with chronic insanity in the narrower sense, when conditions such as idiocy, imbecility, dementia, etc., have been excluded.

Having disposed of this subject, he takes up acute psychoses, a consideration of which occupies the greater portion of his book. From these chapters we select various notes referring to psychoses of alcoholic origin.

He first considers delirium tremens as illustrating the hallucinations of alcoholism.

After analyzing the answers to the questions put to a patient with this affection, he states that the type of hallucination is that which accompanies the dream-state (rapid variation). Alcohol, being toxic, must either excite or paralyze the nerve elements, and we find both kinds of action associated here. Great restlessness constitutes an almost pathognomonic sign of delirium tremens. The patient is seldom idle. The term "occupation-delirium" is used to describe this state, which appears to be due to the rapid variation in the hallucinations. Another characteristic is absolute insomnia, sleep marking the end of the combined hallucinatory period. Tremor affecting the limbs, voice, lips, etc., is, of course, a familiar phenomenon. There is a difficulty in pronouncing words which is also found in progressive general paralysis and meningitis.

Paraphasia and paragraphia are alike present. Innervation of the two sides of the face is unequal. Other symptoms of motor paresis occur side by side with the phenomena of irritation. Cheerfulness of disposition appears to be the rule in these cases, due, of course, to the rapid change in hallucinations. In only a small minority of cases, and those usually of a severe type, do we find the opposite states of anxiety, fear, etc., to predominate (dependent on hallucinations of the devil, wild beasts, robbers, etc.). But occasional imaginings of small animals, rats, snakes, crabs, etc., are common, and may cause attempts at flight, although they do not predominate over the cheerful disposition. They are based upon hallucinations of sight and hearing, taste, and smell. When states of fear, anxiety, etc., predominate, the patient is bathed in cold perspiration.

Next to delirium tremens the author discusses that still more acute alcoholic psychosis — the so-called "pathological drunkenness." It is a transitory phenomenon lasting hours, while delirium tremens lasts for days. With regard to the paradox that one agent can cause capriciously two entirely dif-

ferent affections, the author emphasizes that neither of these two conditions is necessarily specific. We may get the clinical picture of delirium tremens in many conditions — meningitis, intoxication from ether, chloroform and belladonna, progressive general paralysis, presbyophrenia, etc. So the other form, acute alcoholic mania, is stimulated by the other transitory hallucinations. The author next considers chronic alcoholic delirium which may either succeed to the acute form or begin *de novo*, although under the latter condition there is still a prodromal stage which suggests delirium tremens. This chronic alcoholic delirium may require differentiation from an unusually prolonged attack of delirium tremens.

Further on in his lectures the author returns to a consideration of alcoholic psychoses. Delirium tremens is almost exclusively a feature of chronic alcoholism, although we must bear in mind that exceptions may be encountered. The condition already alluded to of "pathological drunkenness" differs from delirium tremens in that it is almost invariably accompanied by threatening hallucinations to the exclusion of others. The state is eminently acute and transitory, is ended by a profound sleep from which the patient awakens with no recollection of what transpired during his attack. This "pathological drunkenness" probably occurs only in individuals naturally of psychopathic tendency.

Worthy of mention is the peculiar pathological jealousy of alcoholic subjects which amounts to delusion. Much more commonly do we find, even if in an abortive degree, that alcoholism causes ordinary persecutory psychoses.

Another psychosis which belongs here is the alcoholic stupor. The somnolence which is in evidence may often suggest a tumor of the brain, or other organic disease such as chronic hydrocephalus. The motor symptoms closely resemble those of chronic internal hydrocephalus of the aged. Choked discs are not present, but atrophy of the optic nerve has been observed to follow alcoholic stupor.

The so-called pseudo-paralyses may stand in relation to abuse of alcohol, especially when extreme and long continued. As already said, these motor pareses accompany delirium tremens, and may persist after recovery from the latter. Aside from cerebral symptoms (paresis of tongue, facial muscles, etc.), spinal phenomena may be encountered, and to the whole may be joined, more or less, psychical disturbance of a general character, resulting from the past alcoholic abuses. This complicated condition may last for years, to terminate finally in recovery. When it is added that fainting attacks are not uncommon in these patients, it is easy to see that the diagnosis from progressive general paralysis is fraught with great difficulty.

WORK HOUSE HOSPITAL FOR INEBRIATES.

The annual report of the board of prison commissioners of Massachusetts shows that during the year there were 55,264 arrests for drunkenness. Out of this number 18,729 received some sentence other than a fine. The commissioners are so impressed with the state of affairs that they appeal to the legislature to establish a state farm for the specific purpose of taking care of this product of the licensed grog shops of the state. The following is what they say:

"During the past year 18,729 persons received a sentence for the offense of drunkenness. Of this number, 3,580 had previously served five or more sentences, and 867 admitted having been committed more than fifteen times. That the excessive use of intoxicating liquors as a beverage is very largely responsible for crime is generally understood. It has been truly said that the type of criminal which it is the desire of every good citizen to suppress is but the natural outgrowth of his heredity as well as his environment. Crime and criminal acts cannot be prevented as long as the conditions for developing them are allowed to flourish. Our social conditions are

of such a character that great efforts are made to educate the offspring of the confirmed drunkard to become an upright citizen, with what success the records of our prisons best illustrate. It will be admitted that this class of persons, in addition to being useless to themselves and to the community, are, so long as they continue to propagate their kind, the most expensive as well as the most dangerous element in society. How shall they be eliminated? No one more clearly understands the difficulty of such an undertaking than he who has made the effort.

“By reference to tabulated information upon preceding pages of this report concerning the character of sentences imposed for drunkenness, it will be observed that in compliance with the statutes, either a fine and costs, or a sentence of from eight to thirty days in prison, is the penalty usually imposed. That the drunkard is any less a drunkard at the expiration of his sentence no one pretends; on the contrary, a repetition of the same action is generally anticipated. If the purpose of the law is to prevent a recurrence of the offense, its inadequacy must be apparent. Remembering that the object to be secured is the prevention of crime, there would seem to be but one course to pursue, viz.: to place the person addicted to the use of intoxicating liquor to the extent indicated, where it is no longer possible for him to procure it. With such a course in view, it is recommended that the laws be so amended that, after a given number of committals for drunkenness, any person convicted of that offense be regarded as a common drunkard, and that he ought to be committed for an indefinite period, with the distinct understanding that it is to be for a very much longer time than is now provided by law. The development of unproductive lands by convicts is no new thought; its application in connection with this class of offenders is believed to be thoroughly practical. The legislature of 1898, in chapter 393, authorized the governor and council to purchase or otherwise take in fee any parcel of waste and unused land, not

exceeding one thousand acres in area; and the same act also provides that the governor may establish on said land a temporary industrial camp for prisoners, and that prisoners be held at said camp shall be employed in redeeming and improving said land. With the law relating to sentences amended in such a manner as to provide for holding the class of offenders referred to for a decidedly greater length of time, it is believed that the provisions of the statute quoted above could be carried into effect with advantage to the commonwealth."

BLINDNESS FROM METHYL-ALCOHOL.

Dr. Herbert Harlan (*Ophthalmic Record*, February), reports two cases of blindness due to methyl alcohol.

Case one, was a man who drank fourteen bottles of Jamaica ginger on election day with the result of waking up three days later from drunken stupor almost blind in both eyes. Vision slowly decreased, despite treatment by strychnia and pilocarpine for optic atrophy, until total blindness occurred.

Case two, had a history of going on about six sprees a year, during which, in default of whiskey or brandy, he drank various essences, cinnamon, peppermint, lemon, "hot-drops," etc. The particular spree which caused his optic atrophy was enlivened with three bottles of essence of peppermint and part of a bottle of essence of lemon.

Essence of peppermint should be — so the chemists whom Dr. Harlan consulted as to methyl alcohol, declare — a synonym for the U. S. P. spirit of peppermint, a ten per cent. solution by volume of oil of peppermint in ethyl alcohol. Essence of Jamaica ginger should be the U. S. P. tincture, ethyl alcohol, in every 100 c.c. of which is dissolved, twenty grains of oleoresin of ginger. Wood alcohol, methyl-alcohol, is much cheaper than ethyl alcohol, costing wholesale about seventy-five cents per gallon, compared with \$2.45 per gallon for the standard

ethyl alcohol required by the U. S. Pharmacopœia for the manufacture of tinctures and spirits. This fact of comparative cheapness seems to have been a temptation to unscrupulous wholesale druggists, as the consumption of wood alcohol by manufacturing drug houses is said to have increased enormously in the past decade.

In Dr. Harlan's cases, adulteration with methyl alcohol was clearly proven by analysis. Both cases having bought their drugs at the same pharmacy, samples were secured which were shown to contain about 75 per cent. methyl alcohol to 25 per cent. ethyl alcohol. If one drug firm in Baltimore uses methyl alcohol for adulteration, it is certainly possible others do the same thing, both in that city and elsewhere. As methyl alcohol is distinctly poisonous, while ethyl alcohol is not, this fact of adulteration has profound practical interest. Poisoning cases seem decidedly on the increase. Dr. Harlan in his paper refers to the blindness of one and death of both of two men who had taken Jamaica ginger from the store of the same Baltimore firm as the two cases seen personally by him. Many other cases have been reported. In 1899, Dr. Hiram Woods reported six cases.

In 1898-99, cases were reported by Drs. Callan, Gifford, Holden, Patillo, Moulton, and others. In 1897, Dr. A. G. Thompson reported a case. The first case on record was reported as far back as 1877 in *L'Année Médicale* by Viger. But in America the cases seem to be of recent origin, a fact of importance, since in local-option neighborhoods with closed saloons, many alcoholics drink any essence or spirit they can buy. If such drugs are correctly made with ethyl alcohol, blindness is not a necessary toxic effect; with methyl alcohol it seems to occur.

COCAINE INEBRIETY.

The Atlanta Journal-Record of Medicine says the negro's inability to resist the vices of civilization is apparent in his ever-increasing addiction to the cocaine habit. In this city cocaine as a means of intoxication is actually replacing alcohol among the colored "boulevardiers," and their female associates of Decatur street. Parties and clubs are organized for bacchanalian indulgence in the drug, in which often as many as a hundred persons participate. A room corresponding to the "gin-mill" or the opium joint is supplied to his patrons by the seller of the drug, where they take it without fear of molestation or interruption. It is said there are two such places on Decatur Street operated in connection with drug stores, and that the proprietors are getting rich in the awful traffic. Ten cents buys four grains of cocaine and permission to use the room. The drug is sniffed up the nose, and the habitué lolls at ease and gives himself over unreservedly to its influence. Young men, young women, and boys constitute the bulk of the victims of an enslavement far exceeding that which led to the bloodiest war of modern times, for it not only brings the body under its grim subjection, but warps and perverts the mental and moral nature almost beyond the hope of redemption. Could a more ideal victim be found than the negro, "half devil and half child," and one with whom the cocaine habit could play more rapid, more complete and utter havoc? On Saturday nights, and then on until the week's earnings are expended, these resorts number their patrons by the hundreds, some of them novices, others hollow-eyed, trembling wrecks, upon whom the drug has obtained a hold that cannot be broken. The latter, in the vernacular, are known as cocaine "sniffers," and it is needless to say are in the majority. It is said that these facts are well known to the police, but, as there is a superficial form of observance of the legal restrictions upon the sale of poisons, they are powerless to suppress the traffic. It is

inconceivable that any one could be so sunken in moral debasement as not only to pander to a vicious, perverted, and, in the highest degree, destructive taste, but could lend his aid in leading the uninitiated and uninformed into the path that kills. Yet all this can be charged to those purveyors of the drug who are willing to accept any flimsy pretext to supply their customers with that which their warped nature craves.

ACTION OF MORPHINE ON THE STOMACH.

Dr. Hirsch of Stuttgart makes the following contribution to this subject, giving this summary of his experiments:

1. Morphine in a dose of 0.01 (1-6 gr.) injected into a dog subcutaneously causes a sudden and complete cessation of the expulsion of the contents of the stomach, lasting for a few hours.

2. This inhibitory action on the expulsion of the stomach contents is caused by a tonic contraction of the pylorus which lasts for hours.

3. Simultaneously with this tonic contraction a strong peristalsis of the pars pylorica of the filled stomach takes place; a slight one of the empty stomach, while the fundus remains at rest.

4. In consequence of the action of the morphine the secretion of the HCL is at first reduced, while later on it is increased.

5. The increased peristaltic action of the pylorus and the central peristalsis of the filled and empty stomach are due to a stimulation of the contraction centers for the pylorus and pars pylorica in the corpora quadrigemina.

6. The inhibition of the HCL secretion in the beginning of the morphine action is probably due to the excretion by the gastric glands of the subcutaneously injected morphine, while the later occurring HCL hypersecretion has a central origin.

On comparison with other experimental investigators on man, the author has come to the conclusion that:

1. There is an inhibitory action on the expulsion of the contents of the stomach.
2. At first there is a diminution in the secretion of HCL and afterwards an increase of the same.
3. This is increased more by subcutaneous injection than when given by mouth.
5. If food is given at the same time it bears a respective influence on the secretion.

LEGISLATION REGARDING CIGARETTES.

The people of the country are aroused to the necessity of laws suppressing the cigarette habit. Over thirty states have measures pending before the legislatures or have passed anti-cigarette bills this winter. In some of these states amendments to old laws making them more drastic are pending. In Tennessee a law of this kind passed four years ago was declared constitutional by the court after a hard battle. A similar law was passed in Delaware, and after a contest was declared constitutional. The *Chicago Tribune* gives a summary of the laws in all the states pending on this matter. Six bills having the same object, the suppression of the manufacture and sale of cigarettes, have been introduced in the legislature of Illinois. One of the bills which will, no doubt, pass, makes it a criminal offense to sell cigarettes containing opium, cocaine, or any other narcotic. In Indiana a cigarette smoker will be fined five dollars for the first offense, and later can be imprisoned thirty days and fined one hundred dollars. In Iowa the selling of cigarettes is punishable by fine and imprisonment. In Kansas a bill to prohibit the sale of cigarettes has equally large penalties attached to it. In Ohio a bill passed in 1896 against the sale of cigarettes has been so generally disregarded that an association has been formed to see that the law is enforced. In Michigan the governor recommended that a bill of this kind be enacted, and several measures have been intro-

duced in the legislature. A license is required to sell cigarettes, and a penalty when sold to minors. In Minnesota there are four bills prohibiting the sale of cigarettes. In Nebraska two anti-cigarette bills have been introduced, making the license for their sale so large as to be prohibitive. In California two bills of similar character are pending. In Missouri a bill has been introduced requiring all dealers to pay a license tax of three hundred dollars for the sale of cigarettes. In West Virginia, a similar bill providing a license of five hundred dollars for the manufacture, and ten dollars for the retailer of cigarettes. In Pennsylvania a law forbidding the sale of cigarettes to minors was passed in 1889, but has not been enforced. A bill has been introduced to modify it in some way. In Massachusetts a bill of the same class is introduced. In Vermont a very stringent measure was passed in 1900, and the law is enforced throughout the state. In Maine a measure of this kind was passed in 1897, and has been amended and made stronger this year. In other states laws are pending or have passed, forbidding the sale to minors.

In forty-three of the forty-five states of the union there is agitation and efforts to drive out the cigarette. The W. C. T. U. and other organizations have taken up this matter with great earnestness, and the cigarette is evidently doomed.

THE WORLD'S TEMPERANCE CONGRESS OF 1900.

This is a volume of the proceedings of the congress made up of fifty-four papers and addresses, with some statistical papers, and an appendix containing the minutes of proceedings, with names of members who have contributed. The English societies, of course, are most largely represented. Eight American societies, three Canadian, and eighteen Colonial societies had delegates. Nineteen Continental and foreign societies sent delegates. So that it may fairly be called a world's congress. As was to be expected, the moral and ethical side of the subject received the largest consideration. A number of very good scientific papers were pre-

sented. The great value of the congress seems to have been in the historic papers which described what had been done to promote temperance work in different parts of the world. This gives a particular value to the work for reference. Some of our members contributed papers, but of historic interest. This book will be found valuable in the library of every student of this subject, and can be had by addressing the Ideal Publishing Company, 33 Paternoster Row, London, Eng.

HYPNOTISM AND SUGGESTION IN THERAPEUTICS, EDUCATION, AND REFORM. By R. Os-good Mason, M.D., Fellow of the New York Academy of Medicine, author of "Telepathy and the Subliminal Self." New York, Henry Holt & Co., 1901.

The author has discussed in this volume some of the most interesting phases of psychology in its relations to hypnotism and the unconscious mind. The first chapter on the subjective elements in the newer therapeutics is the best discussion of the psychic element and its relation to drugs that we have ever seen in print. This in itself opens up a new volume of thought which has scarcely been touched. The second chapter on hypnotism and its relations to the subconscious mind is a new setting of many old topics. The chapters following are not only intensely interesting, but bring out many facts clinical and theoretical concerning the power of suggestion. The chapter on the treatment of inebriety by suggestion deserves a careful study, and, while we are not always able to do what is suggested by the author, he certainly encourages us in efforts in this direction. The ethics of hypnotism takes up a new phase of the subject, treating it fairly and suggestively. While there is so much that is new and interesting, it is difficult to describe the central purpose of the book or show what the author particularly aims to bring out. In the preface he says the special relations and utilities of the hypnotism, also its common thera-

peutical uses, have been the central facts which he aims to make prominent. He has succeeded admirably in this, and we know of no volume more logical, candid, and trustworthy than this. We commend it to all our readers as one of the best works on this subject now in print. Dr. Mason's first book, on "Telepathy and the Subliminal Self," was mentioned in these pages some time ago, and this volume carries the subject on higher in the same broad spirit of candor and scientific precision. Such books belong to the library of every thinking man who is interested in the newer psychology rapidly coming into prominence.

HYPNOTISM. A COMPLETE SYSTEM OF METHOD, APPLICATION, AND USE. PREPARED FOR THE SELF-INSTRUCTION OF THE MEDICAL PROFESSION. By L. W. DeLaurence, Instructor at the School of Hypnotism and Suggestive Therapeutics. The Henneberry Co., Publishers, Chicago.

This is an exceedingly practical book in which the author gives little or no theories but seems to lay great stress on the technique and the manner of producing hypnotism. The following quotation from the preface gives a very good idea of the book: "My advocacy of hypnotism and suggestive therapeutics is not as a specially universal remedy, or as a supplanter of regular medical treatment, but as a valuable aid and powerful auxiliary in combating many forms of the so-called neuroses and other neurotic affections and intractable diseases which are not readily reached by other means." In this work of 250 pages the author has divided the subject into many chapters, making it easy for the reader to select what he may think most useful. We commend this book most heartily and believe our readers will find it very practical and helpful in many ways. Send to the publishers for a copy. Price \$1.50.

TEXT-BOOK OF GYNECOLOGY. Edited by Charles A. L. Reed, A.M., M.D. New York, D. Appleton & Co.

Dr. Reed has formulated the opinions and teachings of over thirty different teachers in this branch of medicine in the attempt to make a working manual for students and physicians. There will be much difference of opinion as to the success of this plan of harmonizing the various views and theories of many widely separated authors. But all will agree that as a whole the work is successful. A great variety of suggestions, theories, and systems of practice have been grouped and put in an available form, so that the reader may see at a glance both the theory and practice of the leading gynecologists in this country. Some articles suffer from conciseness and too general statements of important facts. Others are couched in obscure, diffuse word-settings that require a second reading to understand clearly. Some of the papers are exhaustive; others are not so; but this is to be expected in a book covering so wide a subject by so many authors. The editor has succeeded in harmonizing and arranging what would be very difficult and almost impossible in another branch of medicine. The illustrations by the artist are valuable and add much to the clearness of the work. We congratulate the editor on this contribution to science, and assure him that it will be remembered by practical men far down in the future. The work of the publisher is, of course, to be commended, as no book ever leaves their house in an imperfect dress.

Copies of Dr. Gould's new weekly, *American Medicine*, more than sustain the expectation of the prospectus sent out some time ago. Dr. Gould is both a natural and trained editor who understands the trend of public opinion in medicine and the art of expressing it clearly. Pessimistic critics may complain that he is fault-finding and that the original matter published is too technical for a weekly journal, yet the gen-

eral reader will always be pleased to hear something above his own level and that of other journals which come to his table. The conduct and management of a weekly journal in medicine will always be criticised by many in the profession. Each reader will claim the right to judge, but when there is a general agreement that the editor is honest and without mercenary motives, the interest in his work will grow with each issue, and finally deepen into warm sympathy. We commend *American Medicine* as a most vigorous child which promises to reach manhood without the long stretch of growth which intervenes.

The new *Popular Science Monthly* is widening out very rapidly, and shows decided advance over the earlier years of its life. Some of the recent articles have been widely read and commented on as the latest thought and studies along science lines. The reduction of the price and the improvement of the quality and character of the articles has met a want of the times, and this journal is now destined to be read by the masses of thinking men and women who are tired of the cheap, superficial literature of the day. The fine discretion and judgment of the editor in the quality of the articles and the publisher's genius in the make-up are highly appreciated.

The Homiletic Review has recently published some very suggestive remarks on the progress of the drink disease among women. It has pointed out very clearly the reasons for supposing that inebriety is increasing among women in certain circles. We commend this journal most heartily for its clear, philanthropic conceptions of this great evil, and wish all the monthlies would join in the crusade for a better sentiment in this direction. Such a journal does great credit to its management. Funk & Wagnalls, publishers, New York city.

We have received within the last few months a large number of pamphlets bearing on inebriety and alcoholism, and we rejoice at the indication of increasing interest in this subject. This activity will increase as the magnitude of the disease inebriety becomes better known, and we predict that a new literature of science is beginning to appear.

The *Scientific American* ought to go into the home of every physician in the country who wishes to keep in touch with the world of invention and physics.

The French Minister of War has recently sent to every commandant of an army corps the following circular letter: "The circular of May 3, 1900, has forbidden the sale of any eau-de-vie or liqueur with an alcoholic basis, or any of the numerous preparations known as aperitifs in any barrack canteens, camps, or fields of manœuvres. This measure will give good results from the point of view of the prophylaxis of alcoholism in the army; but the abuse of drink outside barracks being always possible, the interdiction on canteens will have its full effect only if by means of moral action exercised by the officers, and by anti-alcoholic instruction; the soldier knows for a certainty that the use of alcohol diminishes the resistance to fatigue and disease, while the habit of sobriety has the best influence from both the physical and moral points of view. I have consequently decided that lectures on the effects and dangers of alcoholism shall be delivered, concurrently with the regulation lectures on hygiene, before the troops, either by the officers or by the military surgeons."

The postal director at Doubs, France, has issued an order forbidding all letter-carriers from accepting alcoholic drinks from their customers, both while on and off duty. He declares that the exigencies of the service demand total abstinence.

Editorial.

The progress of legislation in this country has been desultory and fitful during the last year. Several bills have been introduced into different state legislatures to incorporate asylums for the treatment of inebriates, but most of them have been at the instigation of the Keeley and "Gold Cure" men, hence have failed to pass. In some instances, bills have been offered for the organization of legitimate asylums, but they have also fallen under suspicion of being the work of specific curers. There seems to be a widespread suspicion among the public that all efforts to organize inebriate asylums are made from mercenary standpoints. In contrast with this apathy in this country may be noted the activity abroad. In England the habitual drunkard act, giving power to municipalities and town authorities to organize institutions and charge the taxpayers with their support, has resulted in the formation of several new institutions. In Russia the government has sanctioned the opening of three public asylums for the treatment of inebriates and drug-takers within the past two years, one at Moscow, the second at Kiev, whose president is Dr. Koralsky, the third at Kassan, in which a \$35,000 building has been erected. The readers of our journal will remember that the statement was published that Switzerland, next to England and America, has the largest number of asylums of any country in Europe. Germany is fast following in this line, and probably before long the model asylums which we hope to have built up in this country will appear abroad. It is a source of satisfaction to know that we have carried the literature farther than any other country in the world, and have had the first and largest asylum. The continuance of this must depend upon our individual efforts.

DEMENTIA FROM ALCOHOL.

The fact becomes more and more prominent that the continuous use of spirits, even in small quantities, is followed by dementia. This may not always be recognized, but measurement of the senses and functional activities by instruments of precision uniformly indicates depression, diminished and lowered vitality. The heart's action is changed, the nutrition and assimilation is disturbed, and the operations of the mind show a wide deviation from the normal state. Where there is hereditary predisposition to use spirits, or the person is a psychopath, or suffers from neurosis, inherited or acquired, dementia is a most natural sequel. The constant anæsthesia which follows from the use of alcohol, together with the chemical disturbances of assimilation and nutrition, after a time are followed by permanent organic changes. The action of alcohol on the heart can be traced; but its effect on the nervous centers is more obscure. The steady drinker suffers from the toxins of alcohol and poisons which are produced by this agent circulating through the blood, which finally act on the nerve centers, producing, first, functional, then organic, disturbances, and finally extend to dementia. It is an error to suppose that intoxication is the only indication of damage from alcohol. In reality, such toxic states are only incidents from which recovery follows. The most serious injury comes from the continuous use of spirits and the constant depression of the nerve centers, and the persistent derangement of assimilation and elimination. The periodic drinker has free intervals of sobriety during which nature makes an effort to restore the damage, but the continuous drinker is subject to the constant, uniform action of depressing toxins. Stages of dementia are started, and, although at first slight and obscure, they become more and more apparent. Thus, in one case, a constant drinker after a time shows egotism and superior confidence in his strength, unnoticed before. In another case, stupidity and dullness are the early and later character-

istics. In another, the higher brain centers suffer, and the character and pride of appearance is changed. In another, unusual parsimony or generosity indicates a change. Often these mental states appear prominent for some time before organic symptoms are apparent. While each case differs from others in a degree, there can be no doubt that a uniform, progressive degeneration follows in all instances where alcohol is used constantly. Illustrative examples are very numerous, and an occasional so-called exception in which the constant drinker appears to be free from organic disease has sometimes been found. Careful inquiry into these cases with measurements by instruments of precision reveal changes and marked dementias which are unmistakable. While dementia is the most common form of mental defect, other disease states are noticeable in these cases, and death often follows from acute inflammation of the lungs or kidneys. A general paretic condition may exist in all the organs, while the higher brain functions show marks of dementia. Recent studies in this direction reveal a new field of facts which contradict all assertions of the possibility of a harmless use of small quantities of alcohol daily.

The following papers on the scientific nature of inebriety and its treatment were read at the International Temperance Congress at Vienna, April 3, 1901:

"Alcoholism and Hereditary Disease." By Professor Auton, director of the Psychical Clinic at Graaz.

"The Relation between Homes for Inebriates and Lunatic Asylums." By Professor Bleuler, director Zurich Cantonal Lunatic Asylum.

"Alcohol and Venereal Disease." By Professor Forel.

"The Influence of Alcohol on the Course of Infectious

Diseases." By Professor Max Gruber, director of the Hygienic Institute of Vienna.

"The German Homes for Inebriates." By Dr. Hugo Hoppe, chief medical officer of the Altenburg Lunatic Asylum.

"Alcoholism in Childhood." By Professor Max Kassowitz, M.D., Vienna.

"Relapse of Drunkards; Their Mental Condition and Remedies for Their Case." By Dr. Legrain, chief of the Ville-Evrard Lunatic Asylum (Seine-et-Oise).

"Alcoholism and Its Bearings on Tuberculosis." By Professor Letulle, Paris.

"The Medical Profession and Total Abstinence." By Dr. J. J. Ridge.

"The Effects of Alcoholism from the Pathological-Anatomic Standpoint." By Professor Auton, Weichselbaum.

TREATMENT OF INEBRIETY IN RUSSIA.

While Russia is centuries behind Europe in the recognition of many of the sociological problems, recently she appears to have made a very startling effort to control the drink traffic. First, by the increase of taxes on drink places and the substitution of tea houses; then by the organization of asylums and the laws forcing drinkers to be confined in them, and finally the subsidizing of the temperance societies, encouraging them by money and patronage. In addition to this the government has become owner and manager of the vast number of the distilleries and drink shops. The ordinary saloon is abolished, and the government takes upon itself to manage all drink shops, each of which is consecrated by religious services. The result of this experiment will be watched with great interest. In all events, the government is determined to limit the promiscuous sale of spirits and put the inebriate under control.

The home secretary of the government of Austria has issued a series of questions to all the medical officers and health boards in the country, asking for answers definite and clear. Most of these questions relate to the use of alcohol and to the consequent drunkenness which follows. It also inquires about the number of drunkards in a community, or the persons who drink spirits in moderation or to excess. One of the questions is this: Is there an apparent reduction of physical and mental capacity in persons who use alcohol not to the endangering of their health, and what would be the reporter's opinion of the degree of health of such persons? Another question inquires into the offspring of persons who are known to use spirits constantly. A still more significant question is: What are the common diseases which cause death in drinking persons? Another question inquires about the connection between crime, accidents, and the use of spirits. Evidently the government is trying to get some facts from which to base more accurate legislation.

The New York state prison commission, in its last report, declares very emphatically that habitual drunkenness is a disease as much as crime, and the state must provide curative measures rather than penal. For fifty years this idea has been presented, until now it seems to have taken permanent hold in the minds of public officials. Not long ago the state charity commissioners of the same state asserted that inebriety was a moral disease which should be treated by the church and not by the state. The same board of commissioners declared that the first inebriate asylum in the world at Binghamton was a foolish expenditure of money in the attempt to cure that which did not exist. Verily, the world moves.

Some years ago Dr. N. S. Davis of Chicago suggested that there might be found a close relationship between the mortality and the spirit bills of large hospitals. A committee has been looking up this matter, and, while not ready to make a formal report, have already found some startling facts which indicate that the connection is very close, and no doubt the death rates rise and fall with the amount of spirits used. In one metropolitan hospital, where the physicians prescribed spirits freely as tonics and stimulants in all cases, the mortality was from three to five per cent. greater than in another hospital of like character whose spirit bills were half as much. In one hospital, typhoid fever and pneumonia were treated very largely with spirits. The mortality was greater than in private practice, although the conditions for treatment were more favorable. One of the visiting physicians became convinced that the free use of alcohol was a large factor in these fatal cases, and gave up its use. The results were so startling that he has become an anti-alcoholic advocate. Several hospitals which received soldiers after the late war had widely differing statistical results, which in a large degree seemed to be due to the treatment. There is a growing sentiment that the free use of alcohol as a stimulant is a most disastrous remedy, although the hospitals are very slow to adopt this view. We hope to publish some figures which will bring out these facts more clearly in the future.

It is a startling fact that the spirit bill for 1900 is over \$100,000,000 greater than ever before. The first explanation of this is the general prosperity of the country. There seems to be some relation between prosperity and spirit-drinking. It is found that in times of great commercial depression as from 1895 to 1897, the consumption of spirits was very much less. When the good times of 1898 began, a rapid increase followed, until this last year ending July 1st, the

largest amount of spirits in value has been used since the record began in 1876. The figures seem to indicate that malt liquors have been most largely called for. The amount per capita is over \$8, whereas distilled liquors, both domestic and imported, range little over \$6, and wines reach about \$1 per capita. As we have said many times before, there are great tides of spirit-drinking with a regular ebb and flow which are traceable in history. This is no doubt such a tidal movement, which will rise to a certain high level and then react, as many times before in the past. In the meantime, physicians will recognize an increase in the diseases and injuries which follow from the use of spirits, and public sentiment will support scientific efforts to neutralize and prevent it. The intense activity already manifested along these lines indicates a consciousness of the coming danger.

The National Woman's Christian Temperance Union has issued an appeal to physicians, medical journals, and hospitals, begging them to remove, as far as possible, all tendencies and temptations towards the formation of inebriety. It warns parents against the home prescriptions of alcohol and narcotic drugs. It is sent to secretaries of medical societies, asking that some phase of this great subject be put on the program and discussed in their annual meetings. It also urges that the use of alcohol medicinally, and the danger as a beverage, should be the subject of inquiry and discussion everywhere. While this subject is most timely and appropriate, there is something startling in the fact that lay women should urge the profession to do what they should have been interested in long ago. This is a medical topic in which physicians should take the initiative in teaching the public, and yet, strange to say, they have followed the direction of public opinion rather than led it. The teaching of a few physicians who have recognized the disease of inebriety and the

poisonous character of alcohol have not attracted the attention which the subject deserves. Not far away the inebriate will be housed and treated the same as a smallpox case, and alcohol as a beverage and domestic remedy will disappear. All honor to the noble women who recognize this great oncoming truth and seek to rouse the profession to greater activity in its study.

The New York Central Railroad employs over 30,000 men. About one per cent. are dismissed yearly through spirit drinking. Twenty years ago over twenty per cent. were discharged yearly for this cause. The demand for temperate men and abstainers is more imperative every year, and the company deems it wise to be more exact in the supervision of the habits and conduct of their employees.

The drink question continues to trouble medical authorities not a little. The *Lancet*, in an article on the drinking habits of the nation, points out that since the days of Todd — a generation ago — no medical leader has sanctioned the reckless use of alcohol. In an address recently delivered, Dr. Carter of Liverpool points out that while the mortality from almost every disease has fallen, that from alcoholism is an exception. The deaths have risen from 45 per 1,000,000 of those living in 1878 to 77 per 1,000,000 in 1897. Dr. Carter is impatient with such matters, and calls for "legislative or other action."

The mayor of Madrid, Spain, has ordered as a punishment that all inebriates arrested for drunkenness on the second offense shall have their hair and beards cut off once every four weeks as a mark of disgrace and punishment for the offense.

Clinical Notes and Comments.

PROPOSED LEGISLATION FOR THE TREATMENT OF INEBRIATES IN CANADA.

A very unique bill has been proposed in the Canada legislature at Toronto, and may possibly pass this session.

The main provisions of this bill are as follows: In all cities of Ontario having a population of 20,000 or over, the police commissioners are empowered to appoint a probation officer, to take the supervision of drunkards placed on probation by the court on suspended sentence. These officers are not to be members of the police force, and they are to act more in the capacity of friendly visitors than as informers. They shall also assist the probationer in finding employment when necessary. It will be their duty to investigate, for the information of the court, the previous record of persons arrested for drunkenness, and to keep records of such investigations and also of all cases placed on probation. In cases where a fine has been imposed by the court, this fine may be paid in installments by the probationer to the probation officer while the person is on probation.

A medical superintendent shall be appointed by the government to inaugurate and superintend the medical treatment of inebriates and dipsomaniacs, and to assist in establishing, for their treatment, cottage hospitals and special wards in general hospitals throughout the province. He shall also make local arrangements for the administration of home treatment in suitable cases. The superintendent and probation officers shall cooperate in the work of reformation.

Government grants to promote the medical treatment of dipsomaniacs and inebriates may be made as follows: Cot-

large hospitals specially established for the reception and treatment of drunkards, or wards in general hospitals specially equipped for this purpose, shall receive, as a bonus, twenty-five per cent. of the cost of building or special equipment, as the case may be; secondly, a special grant of ten cents a day over and above the usual per capita grant to all hospital patients shall be allowed in cases of chronic dipsomania; and thirdly, an extra grant of forty cents a day shall be allowed for a period of seven days, for cases of acute alcoholism. The medical treatment not to be considered as a charity, but as a loan to be repaid subsequent to treatment and while the person is still on probation.

Able-bodied chronic drunkards, instead of being fined or sent to jail, shall be sent to the Central Prison for not less than six months, and all subsequent sentences to be cumulative. Able-bodied female drunkards shall be sent to the Mercer Reformatory on cumulative sentences. Chronic drunkards, male or female, not able-bodied, may be provided for in county or city houses of refuge.

Three physicians of standing in the province may be appointed by the government, as a committee of consultation, to cooperate without salary, with the superintendent, in inaugurating and carrying out the purposes of this bill.

FALLACIES OF THERAPEUTICS.

Dr. Peabody of New York, in a recent paper in the *Medical Record*, writes as follows on this topic: "While on the subject of alcohol it may be well to touch upon a very general fallacy in regard to its evil effects upon the body. It happens to me very frequently to get the statement, not only from the patient and his lay friends, but also from his doctor, that he has been most temperate in the use of alcohol, the evidence being that he 'never was drunk in his life.' Further investigation shows that he has for years been a steady and persistent and even hard drinker, who always drank more alco-

hol than he could possibly oxidize; whose heart, and arteries, and stomach, and liver, and kidneys, and brain all show evidences of degenerative changes directly due to alcohol the victim himself and his friends honestly believing that the limits of temperance have never been overstepped, because he never got drunk. It is not surprising that this should be the lay measure of the possible evils of alcohol, but that doctors should share such a belief, and sanction indulgence in spirits accordingly, is truly deplorable. They should know that the phenomena of intoxication are in themselves incidents of little pathological moment. The heart and the arteries, and the tissues generally, care very little whether their owner gets drunk or not; what they object to is the damaging effect of the alcohol upon them, without any regard to the moral or social consequences of the indulgence."

NEW EFFORTS TO COMBAT INEBRIETY.

Professor Foulet of Lille, France, proposes a new campaign against the use of alcohol as a beverage. He would have posters printed, showing the danger in short, pithy sentences, put up on all the billboards and in every public place in the country. He would have signs in omnibuses, carriages, backs of time-tables, tickets, cards, copy-books, bank-books, wrappers, boxes, toys, and all household articles covered with these short sentences, setting forth the danger of alcohol. All murders committed under the influence of alcohol should have the most lurid settings in the public press, and every effort should be made to give publicity and attract attention to the danger which follows from all drinking. Professor Foulet has already begun such a campaign in his town, and hopes that in time he will placard the entire country with the most startling sentences and statements. We shall watch this effort with great interest, although we fear that such work will be only moderately successful.

FEMALE NEUROTICS — THEIR TREATMENT.

Prof. Chas. J. Vaughan, Chair of Gynæcology, Atlanta College of Physicians and Surgeons, writes: "Cerebro-nervous affections peculiar to women associated with pathological disturbances of the reproductive organs are legion, and most trying to physician and patient. Physicians are aware of the wide prevalence of these nervous disorders, for comparatively few women are entirely free from some phase of the ailment. Neurasthenia, neuralgia, and other manifestations, either of an active or passive character, are common, and are always peculiarly rebellious to treatment. Neuralgia constitutes the great cause of danger from the employment of hypnotics and narcotics, which only afford relief by numbing, but effect no cure. On the other hand, the formation of a drug habit rather aggravates the condition from which relief was originally sought. I have found nothing so well suited to these cases as five-grain antikamnia tablets, administered in doses of from one to three tablets, and repeated every one, two, or three hours according to the attendant's judgment. These tablets not only afford complete relief without fostering a drug habit, but they do not endanger weakened hearts. Their exhibition is attended with no unpleasant after-effects. I use them in preference to any other preparation in the treatment of female neurotics, and experience demonstrates that they are safest and best."

"*Maltzyme* is evidently prepared with due regard to the preservation not only of the digestive principle of the malt, but of the important nourishing constituents of the grain also. It is exceedingly active on starch jelly, rapidly converting it, even in the cold, into soluble starch, and finally dextrin and maltose. At the body temperature its action is still more rapid. One important advantage of *Maltzyme* is its thin con-

sistence, so that the requisite dose may be readily poured out of the bottle. It possesses a fine malty flavor with no unpleasant after-taste. We have examined also Maltzyme with cod liver oil, a combination which, in view of the activity of the diastase, is a valuable therapeutical agent, especially in wasting diseases."

Bovinine has lately been used in typhoid fever. The results have been very unexpected. The fever and acute symptoms have rapidly subsided apparently depending upon this one medicine. A physician who was at loss what to do in a severe case of typhoid gave bovinine every hour; finding its results very happy, continued it at longer intervals. Recovery was rapid with no untoward symptoms, and since then this physician has used bovinine almost exclusively in cases of this class. We have spoken so often of this medicine in neurotic disturbances that it would be superfluous to add anything more except to say that its effects continue to be apparent wherever bovinine is used.

The New York School of Clinical Medicine is to be commended for the advanced move it has made in establishing a chair for the study of spirit and drug diseases. This has attracted great attention, and is noted in all the medical journals of the country. Much curiosity is manifest to see how far this can be made practical, yet physicians everywhere recognize the need of some instruction concerning the increased number of cases of drug disorders which call for their attention. It is very evident that this departure is a permanent one, and will be followed by other institutions as soon as they recognize the practical need of this work.

Jno. C. Levis, M. D., West Bridgewater, Pa., says: I have used *Celerina* in my own case for insomnia. Among all the hypnotic preparations and nerve tonics, it stands justly

pre-eminent. Several persons are now using it, and report that no preparation has given such permanent and prompt relief. In a general practice of more than half a century, this is perhaps the first public testimony I have offered. *Celerina* is the very best nerve tonic now offered to the profession, and cannot be too highly recommended. To those wanting a nerve stimulant it will be just the remedy.

Quassine, prepared by the Ammonol Company, is a great advance over the so-called "gold cures" which contain no gold, and are practically apomorphia and strychnine. We have found this combination of the greatest value in removing the craze for drink, and we can confidently recommend it to our readers. Physicians should be able to treat these acute cases successfully in their own homes, with the aid of this compound.

Carbuncles. Creel has relied on Ecthol given internally, in doses of a teaspoonful, in cases of carbuncle; flax-seed poultices applied locally, emptying of pus, scraping out of dead tissue, and cleansing with peroxide of hydrogen; after this a topic application of Ecthol on absorbent cotton every four to eight hours. The average duration of this treatment in his cases was ten days. — *Jour. Amer. Med. Ass'n.*

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I. The active membership of this association is composed of the resident, attending, and consulting staff of all hospitals or sanitoriums, private or public, where alcohol, opium, or other drug neurotics are treated, either alone or in conjunction with other forms of nervous or mental disease.

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.

Fifth, to encourage, as an association, every individual and organized effort to study scientifically and practically all the various means and methods of both cure and prevention which may be used in the care and treatment of alcoholic and other forms of drug addiction.

There are many institutions in this country which wholly or in part treat the alcoholic and other forms of drug addiction. These institutions should be organized and follow some general principle and method of practical work. By this means public opinion could be more effectually influenced, and legislation secured, resulting in a great advance in the successful and scientific treatment of this class of cases. Every such asylum and institution in the United States is urged to join this association, and by their united effort lift the subject out of the realm of quackery and unscientific treatment into that of exact scientific work, and to place the status of the treatment of alcoholic inebriety and kindred drug habits on the same level with that of other similar diseased conditions, and secure the same medico-legal and institutional advantages. A membership fee of two dollars is charged yearly, which includes the annual subscription to the *Journal of Inebriety*, the organ of the association.

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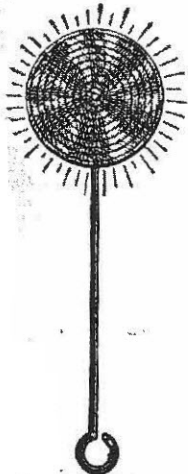
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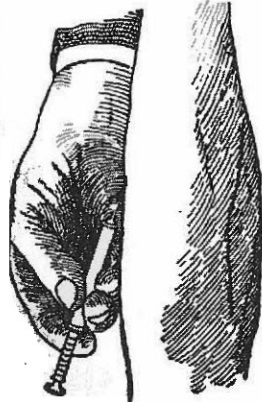
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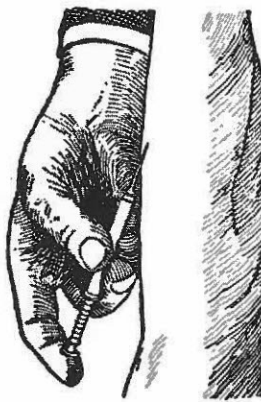
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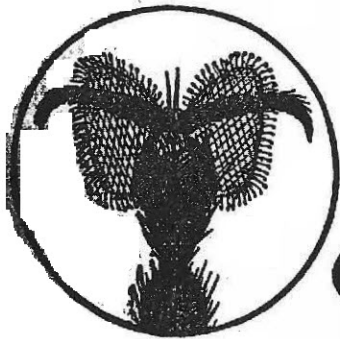
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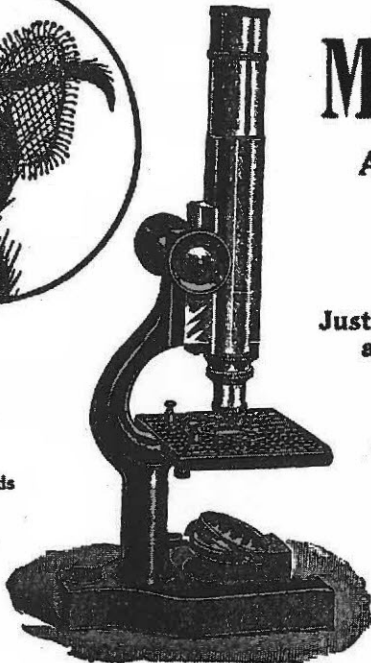
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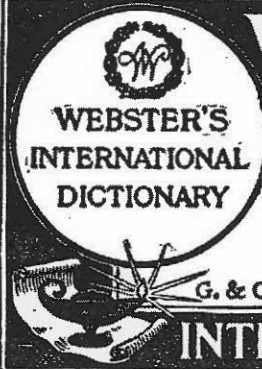
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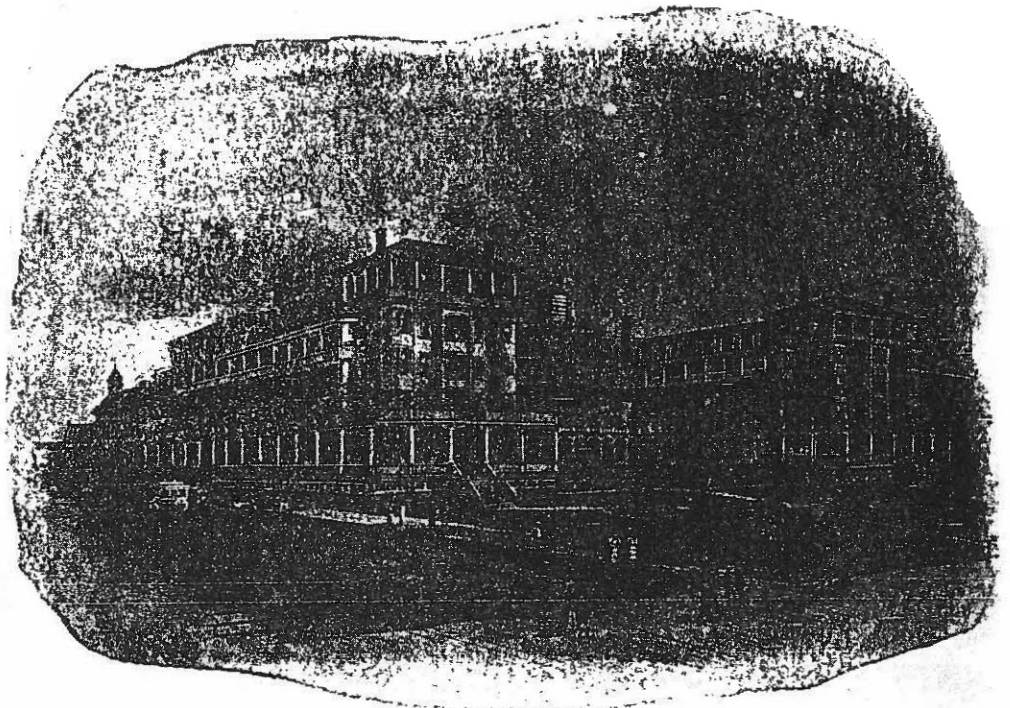
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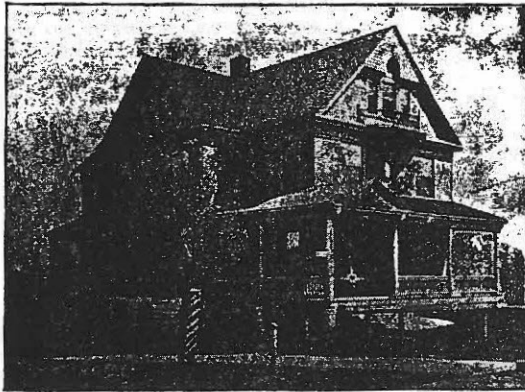
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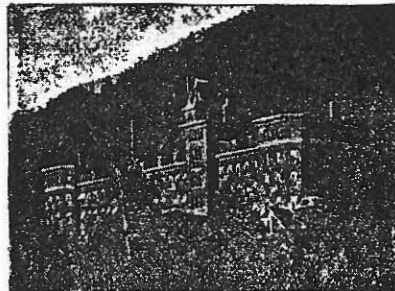
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