care to avoid the influences of exposure and cold, and am more particular to direct that ether should be so given as to avoid the venous congestions that are so frequently observed during the careless administration of this anæsthetic. I am unwilling in these cases to prolong the abstention from fluids, and, when so forced to do under the irritation of the stomach, resort early and often to large hot-water injections into the rectum, and above all—and this has been the aim of this discursive paper—I feel that attention should be stringently directed to the most careful carrying out of the antiseptic treatment. And in many instances of this class of patients, rather than run the risk that often occurs from defective drainage (and I believe that drainage is more often carried out by the outside of a tube than by its quickly choked-up lumen, and is therefore many times imperfectly carried out), I prefer to let such wounds be packed with an antiseptic gauze and allowed, where possible, to heal up from the bottom.

"In the few instances that I can recall of marked renal complications following the administration of ether, the operation has been performed in portions of the body where sepsis is most likely to occur and where it is most difficult to guard against it—to wit, the rectum and the mouth."

A single thought may be added, in conclusion, in regard to the mortality from ether. One of the strongest points in favor of ether as an anæsthetic, has been its safety. Not that it may not kill when used carelessly, or even with the greatest care; but, making all due allowance for the possible danger of the anæsthetic state however produced, ether has still justly claimed for it a large measure of safety. One death in 23,204 cases is a very low mortality, and this ratio represents, as accurately as may be by figures alone, the death-rate from ether. It has never been my bad fortune to lose a patient from the effects of ether. And yet this unqualified statement should not be made. Those who advocate the use of ether as an anæsthetic maintain that the deaths due to ether do not, as a rule, occur with the patient on the operating table, but that the pneumonia or bronchitis, or renal disturbance that finally carries the patient off, may be traced back to the anæsthetic. But inasmuch as these same visceral changes are produced by septic influences connected with the operations performed under ether, there will still remain a doubt in the minds of all advocates of ether, as to the relative part played by the ether and the operation in the fatal result. And a profitable study of statistics relating to alleged ether deaths might put the profession in a better position to defend or refute the charge that ether is not so safe an anæsthetic as most surgeons are disposed to believe.

SOCIAL SCIENCE PROBLEMS OF INEBRIETY.

Read before the Social Science Association, Saratoga, N. Y.

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

SUPT. WALNUT LODGE, HARTFORD, CONN.

Notwithstanding all the advances of civilization and intelligence, and the increasing temperance agitation, and effort, the drink evil, or inebriety, is one of the most threatening ominous perils to all social progress and development of to-day.

Some idea of its extent may be obtained from the following statistics. In 1890 over half a million persons were arrested in this country charged with be-

ing drunk and disorderly, crazed from the effects of alcohol. Nearly twenty per cent. had committed crime of petty character while under the influence of spirits.

These facts furnish some approximate estimate of the extent of inebriety in this country. It is reasonable to infer that if half a million inebriates have come under police surveillance in one year, at least a third of this number using alcohol to excess, have escaped legal notice.

The statement that there are fully a million persons in this country who are, continuously or at intervals, using alcohol and opium to excess and poisoning themselves is not an extravagant or improbable one.

Of course the mortality from this, both directly and indirectly, is excessive, and the oft repeated assertion of sixty and a hundred thousand deaths a year from alcohol, is after all, only a minimum statement.

Practically this vast army of inebriates are withdrawn from the ranks of active workers and producers, and become burdens and obstacles to all healthy living and progressive development.

Yet literally this army and its excessive fatality would be insignificant compared with the injuries and losses which follow.

These cases are always centers of pauperism both to themselves and family. Often they form centers of criminality, and in all cases cultivate the most unsanitary conditions of life and surroundings. They are actually *foci* from which spring all forms of degenerations, and bad influences, and streams of heredity that are terrible in their power in the next generation. If this drink evil could be limited to the victim, the presence of a million inebriates with a mortality of forty or fifty per cent. would be less terrible.

Literally, every inebriate, if married, pauperizes his family in some degree, entails on his children tides of degeneration, periling their future physically, mentally and morally. If a single man, he cultivates conditions of degeneration which affect all who come in contact with him. He encourages unsanitary and psychological states that are the opposite of healthy growth and living.

If he occupies prominence in society and has influence and money, the insanity of his inebriety antagonizes everything that is rational and sanitary.

The great question to-day is not so much the cure of this army, or the checking of its mortality, but of prevention, from a knowledge and removal of the causes and conditions which favor its growth and development.

Inebriety in a general sense is a progressive march of dissolution, with constant hints of the possibility of halts and checks, where the march can be stayed, and the causes changed.

Scientific observation of the inebriate made two thousand years ago, and the more accurate studies the last quarter of a century all support one broad conclusion: that inebriety is a disease, with a distinct and complex causation; that this disease follows a regular line of march from the beginning through and development on to decline and extinction. Its magnitude, uniformity and fatality, furnish abundant proof of distinct disease and distinct causation, clearly traceable from accurate study. This great drink problem in 1892 is practically this: Thousands

of persons in all circles of society from the highest to the lowest, are suffering and dying, and vast tides of misery and loss are following. While all the means and measures to check or prevent this evil are utterly inadequate.

Public attention has been confined entirely to means of prevention and cure, and but little study has been made of the causes and conditions. Theories that were urged a thousand years ago, as to the nature and causes of inebriety, are still pressed with vehement earnestness, by reformers, and accepted as final.

In the meantime the world has gone on, and new realms of facts have been discovered, the supernatural and mysterious have narrowed until these terms often express present ignorance. Moral theories of physical phenomena are survivals of superstition.

The purpose of this paper is to point out some of the conclusions towards which scientific study is approaching concerning the causes and remedies of inebriety.

Heredity is found to be one of the most common causes of all inebriety. Over forty per cent. of all cases which have been studied have inebriate parents or grand-parents. Over twenty per cent. have insane, epileptic and mentally defective ancestors, one or two generations back. The commonly observed fact of the transmission to the next generation, of the form and features of the parents, is followed with equal certainty by the reappearance of their diseases. The form and appearance may vary, but the degeneration never. The organic defects of the brain and nervous system go down to the next generation with absolute certainty. The most casual observation of inebriates in high and low life, fully confirms this: these men are freighted with diseased tendencies and impulses, which burst into activity from the slightest exciting causes. They are incapable of bearing the strains and drains of modern civilization and living healthy natural lives. They are the unfit that are "crowded out" in the race.

The possibility of cure and prevention by the application of scientific measures along this line, promise the grandest results. First of all, marriage should be regulated by law, and determined by the family physician from a knowledge of the ancestral and family diseases. The laws of heredity should be studied and applied, from a scientific standpoint, with the same exactness as the sanitary conditions of the home are arranged.

Polluted and poisonous drinking water, bad, dangerous sleeping rooms, poisonous food, and reckless neglect of common sanitary laws, are considered culpable. How much more infinitely dangerous is the marriage of two persons, with an ancestral history of inebriety, insanity and other brain and nerve defects.

It is here that inebriety, insanity, criminality, and pauperism, are bred and cultivated. We preach prohibition, and urge the pledge and prayer as a remedy, and consent and participate in the marriage of persons whose children must inevitably be inebriates, insane and otherwise defective.

Thus the evil we are trying to remove, is bred and cultivated by ignorance and indifference.

A striking illustration is apparent in the children of drinking parents born during the war, especially where the father used spirits and suffered in the army. As a rule, all these children are mental defects, inebriates, criminals, paupers and insane. The use of

alcohol and the mental strain in these exciting days has been reflected to the next generation, and literally these descendants have been switched on to the side-track of profound degeneration, and early death.

Every inebriate and insane asylum, and every prison in the country have inmates where heredity is clearly traceable to the excesses of the parents during the war. Heredity is the great fountain head of inebriety, and the only remedy is the regulation of marriages on a scientific basis.

The question of divorce sinks into insignificance compared with dangerous marriages, and yet the latter are practically unregulated.

Bad, unsanitary living, and bad training are common sources from which inebriety springs.

The child who is brought up in the worst sanitary surroundings and defective ventilation, imperfect heat, clothing and food may not be an inebriate, but he has all the physical conditions to find relief in the narcotic effects of alcohol. Every state and condition of life, that lowers the vital forces, and degenerates and perverts the brain and nervous vigor, predisposes and favors the use of any remedy which will bring relief.

Thus the *over fed* and the *under fed* are being trained for inebriety. The abnormal stimulation which comes from nutrient excesses, and the exhaustion which follows from deficient quality and quantity of food, strongly favor the use of spirits for relief. Thus the glutton and the starved become inebriates.

Many cases are cured by changing the nutrition, building up the body, and regulating the food supply.

Bad training and no training are also common causes.

Misdirected education, training children out of their natural sphere in life, education that has no reference to the natural capacity of the child, in most cases unfits him for a healthy life. The brain is perverted, its natural capacities are replaced by capricious desires and eccentricities. It becomes enfeebled and exhausted and the use of alcohol follows naturally from the slightest temptation.

The untrained have little power of resistance to the strains incident to the rapid changes and demands on the brain and nervous system. They also find rest and relief from alcohol. *Over work* and *underwork* are also common causes of inebriety, also exhaustion from diseases, from injuries and many other conditions of life, which weaken and break up the controlling centers of the body.

In these and many other cases, inebriety is simply evidence of brain exhaustion and brain defect.

This is apparent from the increase of inebriety which follows wars, famines, disasters, commercial depressions, waves of public sorrow, and events that profoundly impress the public mind.

Inebriety follows closely the movements of society and commerce and the revolutions which spring from new inventions and changes of life and living.

Every advance in the study of the inebriate brings into view new ranges of causes and conditions, which can be remedied, and suggests means and methods of prevention, that are as exact as the march of the seasons.

If the inquiry is turned to the present legal methods of treating inebriety we are confronted by some of the most startling facts.

Of the half a million persons who were arrested

last year for inebriety, not one per cent. were benefited or helped. Over ninety per cent. were made worse and more positive inebriates by this means. The station houses and jails are actually recruiting stations and the armies of inebriates who are forced into them, are formed into legions of incurables which never desert or leave the ranks. Physically, the short imprisonment of the inebriate simply removes him from spirits, and leaves him less capable of living a temperate life. Mentally, he has lost a certain self-respect and pride of character essential for recovery.

The first legal punishment of inebriates is followed by a species of fatality, seen in a repetition of the same offense ever after. This fact is so apparent, that these cases are called "repeaters" in the courts, and the number of sentences to the same man often extends to hundreds. In one thousand cases confined at Blackwell's Island, New York, nine hundred and thirty-five had been sentenced for the same offense, drunkenness, from one to twenty-eight times. The first sentence was a regular switch point from which the victim was precipitated lower and lower, and became more incapacitated for temperate living.

The system of fines is equally ruinous, because it falls most heavily on the family, making it more difficult for them to sustain themselves, increasing the perils of pauperism to both the victim and those who are dependent on him for support.

It may be said, and the statement is sustained by many facts, that the legal treatment of inebriety by the lower courts by fines and imprisonment are equally as fatal and dangerous as the saloon where spirits are sold. The saloon and the police court, are literally the school and college for the training and graduation of an army of incurable inebriates, that peril every sanitary interest of the country.

The fault is not in the courts and its administration of law, but in the law, and public opinion which urges that all inebriates should be treated as wilful criminals, and arrested and punished the same as all criminals.

Thus year after year this terrible farce of prevention of inebriety by fines and short imprisonments goes on, and the incurability of the poor victims increases; crime is increased, pauperism is increased, the most dangerous sanitary conditions are fostered, and the burdens of the producers and taxpayers enlarged.

These are facts supported by abundant testimony.

A Chinese law enacted a thousand years ago contains a flash of truth. When a criminal comes before the courts, careful inquiry is made into his ancestry. If they are found to have any of the traits common to the prisoner, he is killed and they are punished. His death ends all further possibility of transmitted crime, and their punishment and recorded history puts a check to all further propagation of the evil.

If this terrible error of treatment would end with the victim it would be less aggravated, but it cultivates and entails on the surroundings and future, waves of loss and sorrow that are beyond estimate.

While the law is trying to check inebriety by punishment, and the church by conversion, and the moralists by the pledge, science is solving the problem, and pointing out other and clearer methods of cure and prevention.

Already great outline facts are coming up on the horizon, and the dawn of a new era is at hand. Not

far away inebriety will be regarded the same as small-pox, and the victim forced to go into quarantine, and be treated until he recovers. Public sentiment will realize that every inebriate is not only diseased but dangerous to society and himself, and will demand that he come under legal restriction and be placed in the best conditions for recovery. The victim will realize that society will not tolerate his presence, or permit him to have personal liberty in this condition, and make an effort to secure aid and help before extreme stages are reached.

Thus the poor man on the street, and the rich man or his son, will come under legal control at the beginning, and be forced into states of healthy living. The one will be saved from becoming a prey on society, and a burden to the tax-payer and producer, and the other from destroying himself and injuring the society he moves in, and leaving a tide of misery and sorrow, that will continue long after.

Take away the personal liberty of the inebriate, or any one who uses spirits to excess, declare him incapable and irresponsible, and a death blow is struck at all centers of pauperism, criminality, and the saloon. Make the saloon-keeper and his property responsible for all the injuries that follow from the sale of spirits, and tax him to support asylums for the inebriate, and the saloon will disappear in obedience to a higher law than any prohibition sentiment.

All inebriates should be put under treatment in workhouse hospitals, built from the license fund, and supported by the labor of its inmates.

Such hospitals should be military training schools, where every surrounding and condition of life can be regulated. Where medical, hygienic, educational, industrial treatment, and training, can be applied to restore the man to health again. His time of commitment should depend on his condition, and be followed by parole and test as to his final cure. Here each case can be the subject of special study, and special remedies to make recovery permanent. The incurables can be housed and made self-supporting, and the curables can be made self-supporting while undergoing treatment. A certain number of cases can pay for treatment in part or entire, but in all cases employment should be a part of the treatment. The practical character of such military training hospitals is established on the experience of every prison and asylum in the land. Such hospitals should combine the best features of the home, hospital, asylum and penitentiary, with special adaptations for this class.

The great principle is to quarantine the victim until he is cured, and prevent the spread of the disease, and to study the condition and causes, and from this be able to apply the remedies and methods of prevention. Another great principle is to recognize that inebriety is the result of physical conditions which can be seen and understood; also to recognize that the theory so widely accepted, which explains the phenomena of inebriety as a moral evil is contradicted by all the facts.

If this moral theory is true it would be the strongest evidence of the failure of civilization and Christianity.

To-day the drink problem appeals to us as a terrible fact, not as a theory, and its causes and methods of cure and prevention are the most important questions of the hour.

Some of the outline facts which scientific study is

rapidly building up, and supporting by constantly increasing evidence, may be grouped as follows:

1. Inebriety is more widely extended in this country, and of greater fatality, than all other diseases. This fact is not practically recognized because the theories of its origin are still involved in superstition.

2. No one cause or disease so greatly perils the social sanitary and physical conditions of life and living, as inebriety. No one cause has greater influence in its production, than heredity.

3. The degeneration of brain and nerves, that always follows the excess of the use of alcohol, goes down to the next generation with absolute certainty, appearing in some form or other.

4. The remedy is to stop this polluted stream at the fountain; to prevent the marriage of inebriates; to make marriage a public act, in which the welfare of society and civilization are concerned; to prevent the transmission of disease of any kind from heredity; to make it a criminal act to marry where both parties are defective.

5. To study the unsanitary conditions of life and living which predispose to inebriety; to realize that certain lines of conduct and failure to live properly are dangerous and fatal; that education may be more dangerous than ignorance if applied wrongly; to realize that inebriety is always evidence of brain failure and defect with exhaustion, which can be seen, and prevented by physical means and appliances.

6. The question of remedies begins first from actual physical means and conditions which control and influence other physical states: such as the removal of causes, and placing the man in the best possible state to recovery.

7. The present legal treatment of inebriety by fines and imprisonments fails most disastrously. The degeneration from which inebriates suffer are increased, and the victim is both literally and theoretically trained to worse and more incurable conditions. The lower courts, by indiscriminate fines and imprisonment, are doing irreparable injury under the guise of curing and preventing this disorder.

8. All scientific study points to the only rational remedy, which comes from recognition of the disease of the inebriate, and the need of physical restraint and treatment in work house hospitals. It recognizes that special quarantines and special treatment are essential for restoration and cure.

These hospitals should be self-supporting from the work of the inmates, and the money they are able to pay for their care and treatment.

Finally, the social science problem of this great drink evil for 1892, is not touched by prohibition, moral suasion, the pledge or the prayer. These are merely agitations, long roll beats, rousing public interest. The real evil is farther back, and yet nearer to all our relations of life. In closer contact with our homes, and the almost infinite range of causes, that enter into the success or failure of life.

To-day, over half a million inebriates are suffering and dying in this country, unknown and unrecognized practically. The number is increasing, and the losses from them are increasing. This army of inebriates are whirled along on their last march to the valley of death, and the mouth of a hell that stretches on into the future, crippling the generation to come. They may have a flashing instinct that some one has blundered, but there is no time for

question or reply. On, on, obeying orders not heard by the coarser senses, and following lines of march that lead to extinction.

The scientists looking beyond the mass of clouds and darkness which surround this subject, find that the inebriate is no exception to the vast armies of diseased, and his restoration and cure are along the same physical lines of cause and effect.

Insanity has been studied over a century as a disease and yet only a few facts have been established, and preparation made for more exact study. Inebriety, an infinitely more complex disease, is unknown, practically. Only a few pioneers are approaching it from the physical side, and yet the facts are so numerous and startling, and the possibility of prevention and cure so positive, that the enthusiasm of the student increases at each step. An enthusiasm and confidence that behind all this mystery of inebriety will be found a majestic order of forces, springing from unknown causes, moving in unknown orbits, and about unknown centers; also, not far away, all this confusion of theory and practice will disappear, and inebriety will be treated and cured as other diseases are.

REPORT OF THE SURGICAL CLINICS,

Held at the Western Pennsylvania Hospital, before the Students of the Western Pennsylvania Medical College,

BY PROF. J. B. MURDOCH.

[Reported by E. E. Wible, M.D., a member of the Graduating Class.]

(Continued from page 319.)

November 8, 1890.

FRACTURE OF THE BASE OF THE SKULL.

This man, *set.* 27, was hurt and admitted to the hospital on October 16, 1890. He is a brakeman on the Pan-Handle Railroad. While riding on top a box car a stone came rolling down the side of the hill near the Point Bridge and struck him on the forehead above the left eye, causing insensibility of the patient to some extent, bleeding at the nose and at the left ear and ecchymosis under the sclerotic coat of the left eye. When you have a patient that has received a blow on the vault of the cranium sufficient to cause a fracture, although you may not be able to find one, and there is a bloody watery discharge from the ear, ecchymosis of the eye, you have a right to suspect a fracture at the base of the skull.

Fractures of the *base* of the skull may be caused in three different ways, viz.: 1. By the extension of the fracture from the vault to the base of the skull. 2. By "contre-coup" where from a fall or blow on the vertex the fracture is produced in a place diametrically opposite to that struck. This sort of fracture is sometimes disputed, but post-mortems show that it does occur. 3. By a shock being received through the spinal column against the condyles of the base of the skull by a fall from a height on the feet or hips.

Fractures involving the anterior fossæ of the base of the skull will cause the orbital plates to be broken or fissured. Hæmorrhage into the orbit and areolar tissue about the eye, known as ecchymosis, is commonly considered as evidence of a fracture of the anterior fossa. This form of ecchymosis must, however, be distinguished from the subconjunctival and subcutaneous ecchymosis, which constitutes the ordinary "black eye," by the fact that it is unaccompa-