

Temperance
Alcohol-
PATHOLOGICAL ACTION *Physical Effects*

OF

ALCOHOLIC STIMULANTS

ON HEALTH AND IN DISEASE.

READ BEFORE THE ANNUAL MEETING OF THE NEW
JERSEY STATE TEMPERANCE ALLIANCE, HELD
IN NEWARK, DECEMBER 5, 1882.

BY ISAAC N. QUIMBY, M. D.

FORMERLY LECTURER TO MEDICAL DEPARTMENT OF UNIVERSITY OF NEW YORK; PERM.
MEM. AMERICAN MED. ASSO.; ALSO, MEM. OF THE BRITISH MED. ASSO., &C., &C.

CAMDEN, N. J. :

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MR. CHAIRMAN, LADIES AND GENTLEMEN :

It would be utterly impossible, in the short space of thirty minutes assigned me, to do full justice to so vast and important a subject as the pernicious influence of alcoholic stimulants on health. Neither would it be proper, practicable or profitable before a promiscuous audience for me to enter into a purely scientific discussion of the alcoholic action upon the human system ; therefore I shall be pardoned, I hope, if I seem to wander from a strict logical line of thought and investigation. I will commence, therefore, somewhat abruptly by saying, that for the past twenty-five years I have been in a position where, as a medical man, I could constantly observe the action or *modus operandi* of alcoholic irritants (stimulants) upon the human body in health and in disease, and I do most solemnly affirm my belief that it is susceptible of demonstration that one-half, or one-third, at least, of all the diseases that afflict the human family are due directly or indirectly to the habit of the imbibition of alcoholic stimulants. I am sustained in this opinion by all unprejudiced medical men who have investigated the facts in reference to the relation that alcohol has to disease.

In order to make myself better understood, and to bring the action of alcohol upon the human system more prominently before you, I have thought it best to consider the subject under the following heads :

1st. *Alcoholic drinks* are not *true stimulants*, but narcotic irritants. Alcohol is not assimilated, nor is it tissue-making, therefore it is *not food*.

2d. That alcoholic irritants (stimulants) do not aid digestion, are never useful adjuncts to the *food of persons in health*, and seldom to persons in disease.

3d. *As a remedy* it is only occasionally useful, and its place can readily be filled by other medicines quite as efficient, or more so, with none of its dangers, and it can be discontinued abruptly without harm to the patient.

4th. *It should never be used by nursing mothers* without medical advice.

5th. *It should never be used*, either in health or disease, by those who were once addicted to its use and had reformed, or by those who have a hereditary tendency or predisposition to its use.

6th. *It should never be used by minors*, or given to children, except in *rare cases*, and then not without *medical advice*.

7th. It neither preserves the health nor prevents disease.

8th. *The effect of alcohol* upon the *parents* is transmitted to the offspring.

9th. *Men will do mentally and physically* more labor and endure more hardships and exposures in all the departments of life *without*, than with, *the aid* of alcohol.

I began the study of medicine about thirty years ago. During this time there has been much controversy and change of opinion, and great light has been thrown upon these various points. It is not half a century since the great authorities in medicine and chemistry—Liebig, Stokes, Graves and other authorities, and, in fact, the profession generally, were agreed that alcohol was food; that it aided digestion; that it kept up the strength; that it prevented disease; that it prolonged life; all of which has been, by equally able men, such as Lallemand, Piércey, Perrine and D. W. Richardson and others, abundantly proven by experiment and observation to be erroneous.

Therefore you will observe that the question in reference to the action of alcoholic stimulants on the human body is not settled yet, but many facts have been settled beyond controversy. As an illustration of this, it is not a half century since it was thought and believed by the medical profession that delirium tremens was caused by the *temporary* abstinence from drink, after a course of excessive indulgence. This serious

blunder or misconception in reference to the action of alcohol, led to a still more serious mistake in the treatment of the patient, for instead of taking away the alcoholic poison that had *caused* the *disease*, more alcohol was given, or poured down the patient's throat, which only aggravated and hastened the disease towards a fatal termination. (See Reynolds' System of Medicine, vol. 1, p. 671.) But I think you could hardly find any physician of the present day who would assert that the cause of delirium tremens is the sudden stopping of the use of alcohol, or who would use that method *for its cure*. So you see we have advanced. Still, I am sorry to say, there are a large number of excellent physicians of the present day who persist in calling alcohol *food*, and *prescribe* it as *medicine* in the treatment of certain diseases with about the same accuracy of application, and with about (I fear) the same result as those who formerly prescribed its use in the treatment of *delirium tremens*. Some also, I think, are using alcoholics through a mistaken notion of their power, or for want of light in reference to its *modus operandi* on the system, or perhaps from a desire to cater to the wishes and tastes of their patients, or from the habit of following *early teachings*. But whatever may be the cause or excuse for so many physicians using and abusing and prescribing alcoholic stimulants, I am glad to say their numbers are constantly lessening, and with the present rapid advancement of medical knowledge and investigation, the numbers who are now using it so promiscuously will, in a few years, I think, entirely disappear. In support of this assertion I will refer you to the transactions of the British Medical Association, at Worcester, August, 1882, where an invaluable paper on the subject, "Public Medical Aspect of the Alcoholic Question," was read by Dr. Norman S. Kerr, in which he took the broad ground that alcoholic beverages, including beer, ale, &c., were detrimental to the human organism in health and rarely useful in disease. Now, the British Medical Association is one of the oldest and largest, and one of the most intelligent medical organizations in the world.* This paper of Dr. Kerr was read and fully discussed, and concurred in by Drs. F. J. Gray, C. R. Drysdale, Carter, Scatliffe, Mr. Richie (Leath), Dr. Carpenter and many others, with not a dissenting voice against the principles in Dr. K.'s paper. I would advise each member of this Association to procure a copy of the British Medical Journal of September 23d, 1882, in which Dr. Kerr's paper is reported.

*Membership, 10,000; weekly Journal circulation, 11,000.

Now to return to our several points briefly :

1st. *Is alcohol food?* Most emphatically *No!* It is impossible to state here all the reasons for this assertion, but we must be contented by simply saying that nothing is food that does not supply, or cause to be supplied, material out of which *pure* blood is furnished to the body.

Nothing is food that is not tissue-making or does not support true animal combustion, furnishing natural heat and warmth to the body. Alcohol does none of these things, but just the reverse.

Nothing is food that passes out of the body in an unchanged condition, as does alcohol. Nothing surely is food whose only and constant tendency is to lower the natural vitality of both mind and body and produce disease. I am sustained in these assertions by such men as Lallemand, Megnan, Richardson, and others of equal weight.

2d. *That alcoholic irritants* (stimulants) are never aids, in a state of health, to digestion, as formerly taught and believed in by the medical profession. Instead of aiding digestion, it perverts and retards it, by interfering with or causing a precipitation of one of the most important elements of digestion, the pepsin of the gastric juice of the stomach. *Alcohol*, instead of softening, hardens the food, coagulates the albumenoids, rendering them more indigestible. Nothing is a true adjunct to food except that which may give tone to the stomach and thereby aid digestion. Alcohol, when taken with food or taken when the stomach has been abused with too heavy a meal or improper diet, gives temporary relief or sense of benefit, but the relief thus given is deceptive, as it is through a molecular paralysis, a sort of interstitial, temporary death. Again, alcohol, besides coagulating the albumen, acts injuriously by absorbing the watery portion of the food. You may not all know, or call to mind, what an important part water plays in the animal economy; hence I will give you a few figures which will give you some idea of its unquestioned physiological value. Seventy-five (75) per cent. of the muscular tissue of the animal frame is composed of water, and twenty pounds of blood, which an average adult contains in his body, about fifteen and a half pounds of it is also water. It is estimated, too, that not less than thirty (30) pounds of fluid ebb and flow daily from the blood and alimentary canal by secretion and absorption. Indeed, Bedder, a very reliable author, estimates that about twenty-eight and six-tenths (28.6) pounds of chyle and lymph are carried daily by the thoracic duct alone into the circulation. This amounts to nearly one-fifth of the entire weight of the adult human

body. Then with regard to the excretions, we find rather more than a pound of water is exhaled daily by the breath, about one pound and one-fourth by the skin, and not less than two and three-quarter pounds by the kidneys, making altogether about five and a half pounds daily per adult. Water, indeed, serves to dissolve the food and carry it into the circulation to effect the distribution of it throughout the system; to dissolve and carry away effete and worn-out matter from the body; to establish and maintain the chemical activity which is so necessary for nutrition and decay; to combine mechanically with the tissues and lubricate them so that they may perform their important functions easily; and lastly, to evaporate by the lungs or air passages and the skin, thus maintaining the proper temperature of the body. Now, I do not suppose there is a person present who does not know that alcohol has a great affinity and attraction for water, and when it is taken into the stomach with food, the alcohol thus introduced proceeds with great activity to rob not only the food, but every organ and tissue of the body of its due proportion of water which naturally belongs to it, and so perverting and preventing the proper assimilation of the food and deranging the normal action of the organs.

Again, the action of alcoholic stimulants upon the blood is decided. Its affinity for that fluid is very great, drying and shriveling up and diminishing the red corpuscles (coloring matter) of the blood (which are the oxygen carriers), and which are so necessary to that important fluid and to the proper development of the body. This action of alcoholic stimulants upon the blood and the tissues strongly tends to *invite diseases*, such as softening of the brain and arteries, consumption, dropsy, hot, dry skin, alcoholic paraplegia (palsy of the lower half of the body), &c., &c. I have somewhat minutely mentioned these tables to show you how important water is in the animal economy, and to show briefly how damaging is alcohol to even the fluids of the body, and it is also equally damaging to the solid parts and to every organ in the body. How foolish, then, are those who *persist in taking with food alcohol*, and much worse and *purely suicidal are they who* take it on an empty stomach. But I must hasten to the

3d point. *Alcohol as a medicine.* I have been in the practice of medicine for the past quarter of a century. For the first five years of my practice, in some diseases and in certain stages, I used alcoholic stimulants under the most approved method, as inculcated by the most eminent authorities of the times, although I must confess I always

used the alcoholic stimulating plan of treatment with a certain amount of misgiving. The results of my treatment, and the reports and my observations of the results of others never were very satisfactory, which only deepened my conviction that it was radically wrong in theory and worse in practice. I never could reconcile myself to the belief that an active congestion or inflammatory disease such as acute pneumonia, inflammation of the bowels, &c., could be successfully treated by an irritating narcotic (alcohol) which would, of itself, produce congestion and rather tend to induce inflammatory action.

It appeared to me like attempting to extinguish a fire by the addition of oil. But at the time I commenced the practice of medicine the alcoholic or rum method of treatment was at its height. There had arisen a nearly universal acquiescence in the principles laid down in the writings of P. Ch. A. Louis' contra-inflammatory doctrine, as deduced by him from the debris of the body in reference to the treatment of consumption, which was founded upon the erroneous basis that nearly all diseases originated in weakness, rather than from an inflammatory condition, the effect of which was to inaugurate a stimulating plan of treatment, thus transferring to a certain extent the treatment in lung troubles especially; from the digestive system to the pulmonary tissue. This stimulating plan was not confined to consumption, but extended to all other diseases, acute and chronic, with almost universal opposition to and denunciation of blood-letting and the non-stimulating method, which was too formidable to be encountered by any but well-established practitioners or those who possessed all and more than Gaelen's heroic firmness; and woe betide the young physician who dared to place his infant knowledge against the milk punch and brandy lights of the times. But in the years 1862 or 1863, I was called to an important case of typhoid pneumonia. I commenced the treatment on the anti-phlogestic or non-stimulating plan. The patient being very ill, a consultation was suggested and held, the consulting physician suggesting an entire change of treatment from the non to the alcoholic plan of treatment. I dissented. So to reconcile our plan of treatment a third physician was agreed upon, an eminent professor of New York was called, and his opinion was to determine the plan of treatment to be adopted. The stimulating plan was adopted and faithfully carried out, I having yielded to superior knowledge and the power of numbers, but remarking, at the same time to the medical gentlemen, that I believed that

the method of treatment would not be successful in this case. I had but little faith in the curative power of alcoholic stimulants, and if this case proved fatal, as I apprehended, I would abandon its use in the future in similar cases. One of the physicians replied that the power of alcohol as a medicinal agent was very great, and when I had as much experience as he had had, my faith in it, he thought, would be more firmly established. I replied that the result of this case would greatly determine my course in the future in reference to that method of treatment. My patient died, and my faith in the curative power of alcohol died with him. I then resolved, come what would, success or non-success, victory or defeat, I would treat no more patients under that plan, until, at least, the curative and remedial power of alcohol was more fully and rationally established. That was about twenty years ago, and I have been in active practice ever since, and have not prescribed a pint of brandy or alcohol, in all my practice, from that time to the present. The only time I have had occasion to use it as a remedial agent has been after severe hemorrhage or a large loss of blood, which sometimes occur after severe injury, etc.

I think that my record, both in hospital and private practice, will compare favorably with that of those who have used the alcoholic treatment. I am happy to be able to say to you to-day that a large number, if not the majority of the medical profession of this country, and especially of Great Britain, are becoming more and more opposed to the use of alcohol as a beverage in *health*, or as a remedial agent in the treatment of disease. To show relatively how sickness and death are caused by the use of alcohol, I will quote from the paper of Dr. Kerr, British Medical Journal, September 22d, 1882, p. 565. Dr. Kerr says: "As there were 5 deaths among 450 *abstainers*, 100 deaths among 4318 of *temperate*, and 42 deaths among 942 *intemperate*. The proportion to the thousand (1000) may be stated thus:

Total Abstainers.	Temperate.	Intemperate.
11.1	23.1	44.5

In other words, the mortality of the temperate was double, and of the intemperate quadruple (four times) that of the *total abstainers*. So I might go on quoting, if time permitted, a great number of statistics and facts showing that the use of alcohol in health and the use of it as a remedial agent has proved it to be very detrimental, and is being abandoned by a large number of the most enlightened medical men of

the world. Its use has been excluded in a large number of penal institutions and workhouses of Great Britain. Also the large amount formerly used in the great hospitals of London and Paris has been greatly reduced, with marked improvement upon criminals and paupers, and great improvement on the hospital patients, the death-rate being largely reduced.

4th. *Alcohol should never be used by nursing mothers.* This is a very important question to the babe and coming generations, for it has long since been decided that much of the future life of the coming man and woman depends upon *what it imbibes with its mother's milk*. This fact is fully recognized by all the growers of the lower animals, and is it not of some importance to the human race?

As we said in our remarks in point 3d, that 75 per cent. of the muscular tissue is composed of water; milk 88 per cent. is composed of water. We noticed there also that alcohol had a great affinity for water. It will readily be seen how the milk would not only contain a large amount of alcohol, but be greatly injured by it. A glass of wine, beer or whiskey will increase the flow of milk to be sure, but at the same time greatly deteriorate its quality. I would rather give my babe one teaspoonful of milk secreted from natural food than two tablespoonfuls of deteriorated milk secreted through the irritating effect of alcohol or beer. The children of those mothers who are intemperate, or are addicted to alcoholic drink, are more liable to diseases, such as pneumonia, convulsions, diphtheria, etc., than the children of temperate mothers; and although the children of both the temperate and intemperate woman may fall sick with these diseases, the children of the temperate mother may recover, while those of the intemperate mother more surely die. If both the children of temperate and intemperate mothers grow to the years of maturity, the children of the intemperate mother are more likely, or *prone, to become victims* of intemperance, or addicted to some other vice or immoralities, than the children of sober parents. In fact, the children of intemperate parents start out in the world with nervous centres, marred, weakened or broken at the very fountain of life, for which they must suffer, and often reap a sad reward.

5th. *Alcohol should not be used either by those in health or disease* who had formerly been addicted to its use, or whose nerve centres have been perverted or disturbed through indulgence.

Dr. Magnan says, "Sometimes when alcohol is taken even in

smallest quantity it excites or stimulates that morbid activity which is already so prompt to display itself in those who had become so predisposed to its use. Alcoholism is similar to many other forms of disease. It may remain dormant a life-time, perhaps, without disturbing the individual, unless aroused into activity by some exciting cause. For the same reason caution, to some extent, is to be observed towards the unfortunate offspring of intemperate parents."

6th. One of the most serious, as well as one of the most common, mistakes is constantly being made by physicians, parents and guardians in the indiscriminate administration of *alcohol to children*. The profession is unanimous that *all narcotics*, such as alcohol and tobacco, do much more seriously effect children than adults. The child is in a formative stage of development, and all foods or drinks which have a tendency to retard his growth and pervert his functions, should be avoided. As we have seen alcohol has a great affinity for water, and every organ and muscle of the child's body is composed at least of eighty per cent. of that fluid. It will readily be seen how detrimental to the growth of the child will be the introduction of alcohol into the system. Alcohol has an especial attraction and irritating effect upon the tender nerve centres of the child; it perverts and stunts the growth and development of the tissues, obstructing and retarding the development of all life, diminishing and shriveling up the red corpuscles of the blood, and impoverishing that fluid which is absolutely necessary for the healthy development of the human frame.

7th. *Alcohol neither preserves health nor prevents disease.* What I have already said, while on the subject of digestion, will demonstrate the fact that alcohol, in any of the forms, cannot preserve the health, although it is constantly prescribed with that end in view. And how can it be otherwise, when it has been abundantly proven by all unprejudiced medical observers, that alcoholic stimulants *per se* furnish none of the elements of repair, but on the contrary their general tendency is to concentrate in, irritate and feed upon and exhaust the nervous powers, by interfering with the reparative qualities and the proper motion of the blood current. As an evidence of this I might mention but a single fact: the neuralgic pains, which are so common and characteristic among the intemperate, are due mainly to the impaired nutrition of the nerve centres. When alcoholic stimulants are taken, they produce that flush and redness of color, which gives the appearance of health, but is more deceptive than consump-

tion's hectic flush, for the color thus produced is caused by temporary paralysis of the blood vessels, which is an evidence of incipient disease.

The power of alcohol to prevent disease. It is evident, from what has been said heretofore, that alcohol evidently lowers the vitality of the system, rendering the blood less plastic and more watery, and, therefore, inviting disease by encouraging the accumulation of carbonaceous and other waste material within the system. This fatty and degenerated wasted material, when accumulated, has a marked tendency to produce fevers and other inflammatory actions so common to those who indulge in alcoholic drinks. In times of epidemics or excessive heat or cold, the moderate drinker and intemperate perish in larger numbers than abstainers. Of seventy male adults affected with cholera in the Edinburgh hospital, 1848, only seventeen of the number led moderately temperate lives, and of one hundred and forty females attacked with the same disease, only about forty-five were reported sober; so statistics might be multiplied if necessary to prove the fallacy that alcoholic stimulants have either the power to preserve the health or prevent disease.

8th. *The effect of alcoholic indulgence in parents is transmitted to their children.* This fact is so well settled, that I think it will not be denied by any physician or person having investigated the subject. And how could it be otherwise, when it has been clearly shown that alcohol deteriorates and impoverishes the blood, which is the very life of the body, perverting and destroying the healthy developments of the muscular tissue. Nay, more, it concentrates and expends its greatest and most destructive force upon the whole nervous system, weakens the will power and dethrones reason. That alcohol has a peculiar affinity, either in large or small doses, for the nerve centres, to sustain my views in this respect, it will only be necessary to quote from one of the many authors who have investigated and written upon this subject. Dr. F. E. Ainstie, M.D., R.C.P., says in his celebrated work on the pathological action of alcohol, it acts in three ways:

1st. Locally, upon the mucous membrane of the stomach and bowels generally.

2d. After absorption it affects the movement and the vitality of the blood, and, in consequence of this, impairs the nutrition of every organ in the body.

3d. It is clear that the nerve centres, independently of the ill effect

on their nutrition of the blood changes, have a *certain chemical attraction for alcohol*, which, accordingly, is found to have accumulated in their tissues.

Thus, you see, according to this eminent author, how profoundly and universally alcohol affects the human system in all its vital parts—the blood, the tissues, the nervous system, all deteriorated and poisoned. And, is it to be supposed that it would be possible for a person thus affected, to be the parent of healthy offspring? Impossible. The offspring of intemperate parents do not all take to alcoholic indulgence, but they take more readily to other vices: dishonesty, forgery, murder, etc., due to the weakening and degenerating influence of their nervous centres, brought about, in a large degree, by parental indulgence in alcohol. "My own experience," says Dr. Ainstie, "has led me to a firm conviction that particular causes of nervous degeneration affecting individuals, do very frequently lead to the transmission—to the offspring by those persons—of an enfeebled, nervous organization, which renders them peculiarly liable to the severer (nervous) nerve diseases, and which, also, makes them *facile* victims of the temptations to seek oblivion for their mental and bodily pain in narcotic indulgences."

I believe that things often work in a vicious circle to this end, and that nervous enfeeblement produced in an *ancestor* or *parent* by *excess* in alcoholic drinks, is reproduced in his various descendants, with the effect of producing *insanity* in one, *epilepsy* and feeble-mindedness in another, *neuralgia* in a third, *alcoholic excess* in a fourth, and so on, and on, I may add, *ad infinitum*. Thus, you will observe, this is a complex, profound and serious question, which should engage the careful attention of all philanthropists and searchers after truth. In fact, so marked is this alcoholic transmission—from parent to child—that a few scientific men and some distinguished physicians are now taking the unwarranted ground that the offspring of alcoholic parents and inebriates should not be held accountable for their evil acts and transgressions. That drunkenness is not a vice, but a disease—alcoholism. If this startling aspect of this question should prevail to any extent, how momentous is the question of alcoholic indulgence? Under this theory, men who have become inebriates through hereditary taint or alcoholic indulgence, would, consequently, escape all responsibility, and, therefore, all punishment for crimes they may have committed while under the influence of alcohol. This would necessarily involve

a radical change in the whole system of criminal jurisprudence, effecting not only the present, but the coming generations. We often act, in our individual capacity, as though the conditions and habits of others did not affect us. But it must be remembered—

“All are but parts of one stupendous whole,
Whose body nature is, and God the soul.”

9th point. The ninth point and last proposition of our subject is, *men will do, mentally and physically, more labor and endure more hardship and exposure in all the departments of life without, than with, the aid of alcoholic stimulants.* This is an important declaration, and is antagonistic, I am fully aware, to the principles and teachings of a large number of the members of the medical profession, and contrary to the practice and habits of a large majority of the people, who seem to be wholly indifferent or ignorant of the destruction that alcoholic beverages have upon their mental and physical systems. What I have said in my foregoing remarks, especially when upon Points 1 and 2, will be quite all that is necessary to prove this ninth proposition; and, therefore, all that I will do at this time is to add a few practical facts to strengthen what I have already said. It was thought and taught for a long time, by a vast majority of physicians, and readily and willingly believed by the too confiding people, that *alcohol* possessed some *mysterious power* to wake up the drooping, mental energies to renewed activity, or rouse the muscular or physical forces to healthy and vigorous action; that alcohol was the panacea and balm which acted at once, and at the same time as a stimulant upon the mind and body. To show how it vitiates and weakens the physical and muscular forces, only one or two practical examples may be mentioned:

During the Napoleonic campaign in Russia, it was found, on investigation, that there was less sickness and mortality among those soldiers who abstained from alcoholic beverages, and they were better able to resist that intensely cold climate, than those who indulged in alcoholic stimulants, and the same thing, to a certain extent, may be said of our own soldiers. My own observation, while serving in the army during the late rebellion, convinced me, beyond doubt, that the use of alcohol largely increased the mortality among the soldiers, by preventing a healthy union of the wounds.

I think the profession are unanimous on the point that those soldiers whose systems were absolutely free from the pernicious influence of

alcoholic poison, would stand the fatigue of marches, change of climate and surgical operations far better than those who used, or were accustomed to the use of alcoholic stimulants. In fact, the abstemious Yankee, who lived upon meat, hard-tack, cold water and coffee, could be shot, and seemingly literally cut to pieces, yet these apparently fatal injuries, if timely attended to, and wounds properly adjusted, recovery would frequently follow. While the stout, apparently healthy beer-drinking German, whose blood tissues were saturated more or less with alcohol and beer, who received a comparatively superficial flesh wound, either from shot or shell, would be followed by a severe erysipelatous inflammation, resulting in abscesses, etc., usually terminated fatally; thus showing the vitality between the alcoholic and non-alcoholic tissues. Again, take the unfortunate case of Lieutenant De Long and his followers in the Arctic regions. When the rations of even dog meat began to fail, we read in De Long's journal, that he and his comrades had “a cup of third-hand tea, with half an ounce of alcohol in it.” Two days afterwards, he notes that they were about to undertake a journey of twenty-five miles, with some cold tea leaves and two quarts of alcohol.” For dinner they had “one-half ounce of alcohol and pot of tea;” next day, “half-ounce of alcohol and pint of hot water;” on the following day they “had one-half ounce, and on the day after that the last half ounce of alcohol.” In twenty days more, the starving, heroic band had all died. *What did the alcohol do?* De Long says “*it keeps off the craving for food, preventing gnawing at the stomach,*” by paralysis of the tissues, “and kept up the strength of the men, who were given three ounces per day.” Where all food was exhausted and where even the alcohol gave out three weeks before the fatal termination, it would be presumptuous to speculate or dogmatize; but surely we may safely assert that if, instead of alcohol, there had been the same amount of exsiccated (dried) or concentrated food; no one, I am sure, will deny that the vitality and strength of the explorers would have held out much longer; perhaps *just long enough* to have *taken them* to the *settlement* for which they *were bound*, and De Long and his followers would have been *alive to-day*, to have given to the world the results of his arctic explorations and sufferings. It is evident, from the above sad account, that the unfortunate De Long and his companions, like millions of others, had put too much confidence in the deceptive power of alcohol. But, as knowledge and science advance, and through the aid of chemistry, many of these

erroneous views are overthrown. It is through the aid of physiological and chemical experiments, that we now know that alcohol hardens the albumenoids of the food and precipitates the pepsin in gastric juice of the stomach, thereby retarding the digestion and assimilation. It is well known by every intelligent person that alcohol can furnish none of the elements of repair for the waste of the body.

The blood of the inebriate, as has been shown through the aid of the microscope is very different from that of a person *not addicted* to the use of alcohol. The blood discs of the inebriate are altered and shriveled, and capillary circulation partially paralyzed, and the reparative and plastic power of the blood is weakened and more or less destroyed. Yet, strange to say, in the nineteenth century, notwithstanding all the light recent investigation has thrown upon this subject, many physicians use, prescribe and still teach the well nigh exploded fallacy that alcohol is concentrated food, with power to prevent disease, prolong life, etc.

This class of physicians are practicing, I presume, under a false system inaugurated by P. Ch. A. Louis, of Paris, and more prominently brought into vogue in 1860 by Dr. Todd, of London, who had—reasoning from a false basis—unlimited faith in the curative power of alcohol. Dr. Todd administered beef tea and brandy, at stated intervals, in small doses, nearly as much as the patient could bear or tolerate in the treatment of erysipelas. He went so far in this stimulation treatment, as to say, “If I were reduced to any one remedy in this disease, I should assuredly choose *brandy*, and he repeated and elaborated this idea in his clinical lectures for several years later. This plausible theory, although founded upon false bases, emanating from such high authority, was taken up, and became a favorite method of treatment by the vast majority of the medical profession, and generally used without due consideration to its ultimate result. The pendulum swinging entirely too far toward the side of stimulants; but, I am glad to say, I think it is now returning, in proof of which I will only quote one or two sentences from Prof. Alfred Stelle, M.D., LL.D., professor of theory and practice of medicine and clinical medicine in university of Pennsylvania, Philadelphia. In the International Encyclopedia of Surgery, 1882, he says: “Nothing can be more certain than that erysipelas, as such, *stands in no need* of alcoholic treatment, except it may be used when the disease assumes a typhoid form.” Again says this eminent author, in same work, vol. 1, p. 98: “The

use of alcoholic stimulants in ordinary cases of disease *is not only unnecessary but injurious*, for they—stimulants—*increase* the fever, lessen the appetite for food, and impair the digestive functions.” Thus it will be seen that, through a misconception of the curative power of alcoholic stimulants, and the lack of comprehending the *modus operandi* or action of it upon the system, has been the means of leading many physicians into serious and fatal mistakes. That mistakes should have occurred can not be wondered at, when we remember how complex, complicated and intricate is the working of this wonderful human organism, and how difficult and almost impossible is it to trace the action of remedies in all the various and varied organs of the human body. The erroneous application of alcoholic stimulants in the treatment of disease on the part of the medical profession, has had a great deal to do with the almost general, promiscuous and destructive use of it among the people.

One striking result of the destructive effect of alcohol upon the nervous organisms, shown in the work of the last census, is the great increase in the number of those whose *mental, nervous* and muscular organisms are vitiated and broken down. A large number of these are brought into existence with vitiated constitutions.

The large number of the *insane*, idiots, blind persons and deaf mutes, as shown by the several comparative tables of this last census, is perfectly appalling. There were, of this defective class in

1850	.	.	.	.	.	.	.	50,684
1860	.	.	.	.	.	.	.	68,451
1870	.	.	.	.	.	.	.	98,484
1880	.	.	.	.	.	.	.	251,998

In other words, although the population has a little more than doubled in thirty years, the number of defective persons returned is apparently nearly five times as great as it was thirty years ago.

The increase of population between 1870 and 1880, was only thirty per cent., while the apparent increase of these defective classes was one hundred and fifty-five per cent.

“It is startling to know,” says Mr. Wines, “that out of fifty millions of inhabitants over four hundred thousand are either insane, idiots, deaf mutes, or blind, or are the inmates of prisons, reformatories, or poor-houses. If to these we add the out-door poor and the inmates of private charitable institutions, the number will swell to

nearly or quite five hundred thousand, or one per cent. of the *total population*." We cannot begin too soon, or prosecute too vigorously, the inquiry into the cause of the prevalence of these evils, which are like a canker at the heart of all our prosperity.

The above, to the intelligent patriot, and especially to the philanthropist, are facts pregnant with sounds and mutterings, foreboding some dreadful evil near at hand.

What is the *cause* of this *corroding canker*? asks Mr. Wines. As a physician of a quarter of a century experience among a varied population, I can reply without much hesitation, that I think you will not be obliged to go very far beyond the triplet or hydra-headed monsters, *rum, opium* and *tobacco*. How could it be otherwise, when it is remembered that more than half of the youth of this fifty millions of people are growing up with their nervous organisms perverted and poisoned, amidst the noxious and depressing influences of three of the most powerful narcotic depressants known in medicine, *rum, tobacco* and *opium*, often combined with other narcotics. The temperance societies and churches, I fear, will make but little headway against this wide-spread evil and promiscuous use of alcohol, unless the same profession, which has done so much to promote its use, comes to their rescue. This, I am happy to say, is now being done by a large number of prominent physicians throughout, I may say, the civilized world. The recent physiological and chemical investigations now going on, with the aid of the microscope, are clearly demonstrating the fact that our bodies *are not spirit lamps*, as the devotees and brewers and the manufacturers of spirituous beverages, and those interested in the business would have us think, but rather *oil lamps*.

Even according to Liebig, who did so much to promulgate the fallacious idea that alcohol was concentrated food, "One pound of fat is worth three pounds of spirits." Again, even admitting the fact that, according to Liebig's theory of intro-combustion of alcohol taken as food or luxury, can be demonstrated an evil of no small magnitude; for, while alcohol is being thus converted into other compounds within the system, it is doing serious injury to the *blood, muscular* and *nervous tissues*, with which it comes in contact *during the process of combustion*.

Nature teaches us that fat is the proper food for increasing the natural temperature of the body. As an illustration: the Laplanders' and the Russians' favorite food is fats and oils. The Russian author-

ities, from experience, are well satisfied that alcohol is baneful and not a proper heat-producing agent, and, therefore, have absolutely forbidden its use in the army when troops are ordered on a march during extremely cold weather. The soldiers are carefully examined, and those who are using, or accustomed to the use of alcohol, are set aside, and absolutely forbidden to march, as they soon give out; not having vitality to resist the extreme temperature of that climate, and are, therefore, the most likely to have their feet and extremities frozen, thus incapacitating them for service.

The above are but a few facts which could be adduced to prove how utterly absurd, impracticable, detrimental and unscientific it is to introduce alcoholic stimulants into the system for the purpose of sustaining the body. Indeed, drunkenness has become so common in Russia, that the government has been forced to adopt some very stringent rules. The National Baptist reports the following synopsis of the latest (1882) decree:

"There is to be only one liquor shop in a village, and where two or three villages are almost contiguous the one shop must suffice for their combined inhabitants. The publican must be a native of the village; must be appointed and paid by the common council, and must *sell food* as well as *liquor*. If he *allows any person to get drunk* he is *liable*, not only to *dismissal*, but a *fine* and *imprisonment*. If any Russian village is reported to the authorities to be addicted to drunkenness, the sale of liquor may be interdicted for as long as may seem necessary."

What a grand, humane and Christian lesson does despotic Russia, in this decree, teach us free and boasting Americans, by thus grasping, with giant-hand, the despotic sceptre of king alcohol? Should not every true and generous American blush in humiliation?

The effect of alcohol in mental labor. What I have previously said against the use of alcohol in physical or bodily labor will apply as well to *mental labor*. If alcohol alters, vitiates and destroys, as we have seen, and this no intelligent physician will deny, the natural and plastic properties of the blood, then the brain and nervous tissue is robbed of its proper nutrition, which, in turn, weakens and enfeebles the *action of the mind*. Take any mental or mind worker under alcoholic stimulants, trace him through life, and you will, as a rule, find many dark and uncertain spots in his character. Burns is a striking illustration of this. *Stimulants* did not make his *genius*, or

deepen or brighten it, *it burned* it off *all too soon*. At times the flame was brilliant and pure, and the incense sweet and captivating; yet we know that often the light was sickly, feverish and sensuous. Or, if you doubt the action of alcohol, try an experiment upon yourself. Take a drink of ale, wine or brandy, then attempt to read some of the difficult passages of Virgil or Horace, or try the solution of a mathematical problem, and see how the lines run into and across each other, and see what fantastic forms the figures will cut, and how soon a sort of depressing or undue exhilarating condition will overtake you.

That alcohol in no way assists or strengthens the intellectual faculties, I will only mention one or two of the many examples that may be quoted. Sidney Smith said, in reply to a friend who had written respecting his health:

"I not only was never better, but never half so well; indeed, I have been very ill all my life without knowing it. Let me state some of the good arising from abstaining from *all fermented liquors*. First, sweet sleep; having never known what *sweet sleep* was, I sleep like a baby or a plough-boy. If I awake, no needless terrors, no black vision of life; but pleasing hopes and pleasing recollections, Holland house past and to come. If I dream it is not of *lions* and tigers. * * I can take longer walks and make greater exertions without fatigue. My understanding is improved, and I comprehend political economy. *I see better without wine and spectacles than when I used both*. * * *Pray leave off wine*; the stomach is quite at rest; no heartburn, no distension." Or, take another illustration, one of our own countrymen, the late Rev. Dr. Samuel Miller, Princeton, N. J., who says: "For sixteen years I have followed the advice of my physician, in drinking one or two glasses of sound wine daily. During all this time my health was delicate. More than six years ago, when approaching my sixtieth birthday, I *broke off at once*. The experiment had not proceeded more than a month, before I became satisfied that my abstinence was very *strikingly beneficial*; *my appetite was more uniform*; *my digestion improved*; *my strength increased*; my sleep more comfortable, and *all my mental exercises more clear, pleasant and successful*."

Thus I might go on calling up witness after witness, all of whom would give unvarying testimony of the pernicious and destructive effect of alcohol upon the system, and that the habit of treating many forms of disease, or the habit of promiscuously taking it in a state of

health, originated in ignorance of its operation upon the animal economy, and the continuance of which commends itself neither to our present knowledge of the operations of natural or physiological laws, or the advancement of medical science. But the subject is a large and difficult one. Time and space have only allowed us here to notice, imperfectly, a few of the practical questions involved; therefore, it will be well, perhaps, to recapitulate some of the salient points of the paper.

1st. Alcohol whether in the form of ales, wines, beers, &c., in a state of health is always, and at all times absolutely injurious to, and destructive of, the growth of the human body.

2d. Alcohol more than any other substance, in a striking manner concentrates in and exhausts the nerve centres, or the nervous system, tending to feebleness of mind, softening of the brain, &c. This concentration also either unduly excites or depresses the intellect, depriving the mind of the power of properly *discriminating* between *right* and *wrong*.

3d. Alcohol, in all its forms, has a marked tendency to impede the circulation of, and impoverish the blood. It shrinks and diminishes the red corpuscles, which tend to dropsical effusion, thus preventing the proper growth and development of organic life.

4th. *Alcohol* is a physical as well as chemical and physiological agent, for according to Poiseulle it hinders the flow of liquids through *narrow tubes*, and may, and does act in the same way on the movements of the blood in the capillaries (small hair-like blood vessels). It is this retarding of the flow of blood and *paralysis* of the capillaries which produces the flushed face and red nose so common in those who take alcoholic beverages.

5th. *Alcohol must never be taken* on an empty stomach, as in that condition it more readily enters the system through the circulation, producing more readily temporary death or paralysis.

6th. It must be remembered that one of the most serious effects of alcohol is, first, that it acts upon and unbalances and paralyzes, or puts to sleep, all the nobler intellectual faculties, while it brutalizes and rouses into action all the baser animal propensities of man.

7th. The use of alcohol causes one-third or one-half of all the diseases that affect the civilized world. And, according to Dr. T. D. Cruthers, Superintendent of Lunatic Asylum, Hartford, Conn., from twenty to fifty per cent. of insanity is caused by inebriety.

There are about three hundred thousand (300,000) inebriates in the United States, with a yearly death rate of fifty thousand (50,000). From inebriety comes from sixty to eighty per cent. of all paupers, and from sixty to ninety per cent. of all criminals. Inebriety is a physical disease, and one that should be placed near the border-land between sanity and insanity. The action or functions of alcohol are manifestly of a complicated nature. In fact, the whole subject requires the light of science and still further experiments to fully comprehend or illustrate its action upon the system.

8th. I have often been asked the question, *is there nothing that can take the place of alcohol* in unexpected sickness or emergency, such as sudden fainting, chilling, cramps, dyspeptic distress, &c. ? There are many remedies that can take the place of alcoholic stimulants, such as—

Tincture of opii. camph. (paregoric).
Tincture of capsicum (cayenne pepper).
Tincture of nux vomica with tincture of gentian.
Comp. tincture of lavender.
Comp. tincture of cardamon.
Comp. spirits of ammonia (hartshorne).
Spirits of camphor, etc., etc.

These remedies, taken at the right time, in proper doses, in warm milk, cold or warm water will, as a rule, do everything that alcohol can accomplish, without any of its dangers.

9th. Lastly; as I have said it was seldom necessary to resort to the use of alcohol in the treatment of disease, and to show that I am not alone (yet perhaps in the minority) of those holding these views, I will quote briefly from Dr. Atkinson, (*Practitioner*, Jan., 1883,) what he says in reference to the treatment of *delirium tremens*, as his experience, views and practice fully accord with my own. *Delirium tremens* is one of those diseases in which perhaps a large majority of physicians still cling to the unscientific use of alcohol as a part of their treatment in restoring their patients.

Dr. Atkinson says, "In spite of all that has been written on this subject, I think that sufficient attention is not given to the necessity of supplying the system with adequate nourishment. Certainly in the second stage, when the appetite is bad, the blood corpuscles deficient in quantity and shrivelled; and the brain anæmic and starved, it is useless

to expect relief from sedatives, unless the *brain* is at the same time supplied with the *nourishment* it requires. Death no doubt in *delirium tremens* arises from want of sleep, *but then it must be remembered the want of sleep is caused by want of nourishment*. The most important part of the treatment then is to improve the *quality* of the *blood* as quickly as possible by throwing into the system frequent supplies of light, nourishing and easily digested food. The *best* way of accomplishing this end is by *cutting off all stimulants* and ordering half a tin of Brand's liquid essence of beef and half a pint of milk to be taken alternately every two hours. As regards medicine, twenty-five grains of chloral with thirty minims of comp. tr. of cardamon in an ounce of water, taken every four (4) hours, after the beef tea, will be found most useful. Very little effect, though, is produced by the chloral inasmuch as the brain is without the nourishment it requires, but after the second dose of food begins to tell, some sleep, generally speaking, results, and this goes on increasing in proportion as the support is maintained. If nourishment is withheld, sleep disappears, and the old *delirium* returns."

And lastly, never adopt the practice, which is so common, of having recourse to alcoholic stimulants to give temporary relief from bodily discomfort or suffering. The consequence of this ruinous course will assuredly be such as was well and eloquently described by the poet Prior, who must have had some experience in the effect of alcohol, who says

"Unhappy man, whom sorrow thus and rage,
Two different ills, alternately engage.
Who drinks, alas! *but to forget*, nor sees
That melancholy, sloth, & e're disease,
Memory confused, and interrupted thought,
Death's harbingers, lie latent in the draught,
And in the flowers that wreath the sparkling bowl
Fell adders hiss, and poisonous serpents roll."

"In fact it would be better for the world if the art of producing alcohol should be suddenly lost, and the process be forever classed among the 'lost arts.' We do not need it in any of its forms: neither the chemist, nor the artisan, nor the *physician* absolutely need it in any department of his calling. This statement we make advisedly after *full deliberation*, taking into view *our present knowledge of medicine and the arts*."—*Boston Journal of Chemistry*.

I know full well, that what I have said in the foregoing remarks,

thrown hastily together, is not consonant with the principles and practices of a vast majority of my professional brethren, or the habits and feelings of a large majority of the people. Should I have viewed the alcoholic question from a mercenary standpoint, or paused for a moment to consider the popular side or feeling, I would have written on the other side of the question, or have been entirely silent. But knowing, as I do, that great and serious injuries are being done to my countrymen, I feel I should sacrifice my self-interest and exert and put forth my might to remedy this far-reaching evil, so that this great country of ours may even still do more in the future, than she has in the past, towards spreading throughout the world a free civilization which, under the providence of God, is destined to elevate, enlighten, and regenerate the race.

FINIS.

