

The elevated plains of Anahuac in Mexico have borne for several centuries a reputation for salubrity. The plain of Quito directly under the equator, at an elevation of nearly nine thousand feet, has a well established claim for general healthfulness, as also have Montana, Potosi and still greater elevations. New Mexico, with its clear dry air, affords a great contrast to many mountain regions, in particular to the Alps. These, placed between near and sharply contrasted seas—the superheated Mediterranean, the fierce, cold Baltic and the storm swept Atlantic have ever been the cradle of climatic excess. The mountain tops are eternally capped with snow and glaciers; their valleys are the hot beds of miasm and dampness, where consumption and cretinism prevail. The cold sides of the Alps are to-day, however, lined with hotels and *pensions* for invalids, who try to imagine themselves benefited by gazing on ice-clad peaks and mountain torrents. There is this to proclaim, and it is of higher importance than the story of matchless fertility, or of hills seamed through with the precious metals. In the Rocky mountains there is an area of 1,000 by 300 miles with a climate the most serene and invigorating of all that have been tested or in any proper manner demonstrated.

ALCOHOL OR NO ALCOHOL IN THE TREATMENT OF TYPHOID FEVER.

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There is no disease in the entire catalogue of human ailments that is of more concern to both the physician and the patient than that of typhoid fever. It attacks the young, the old, the rich, the poor, the high, the low, the monarch and the slave, and while the disease has a special fondness for certain ages and conditions yet none are exempt even after having once had an attack.

It is found on the mountain top and in the valley, and an epidemic may begin on the mountain top and spend its force in the valley as was the case in the noted "Plymouth epidemic." It is both epidemic and endemic, and no physician who engages in the general practice of medicine will continue long ere he comes face to face with this dreaded destroyer of family ties and human comfort.

The diagnosis and symptoms of the disease have been studied and discussed since the dawning of the present century. Since the year 1813 it has been recognized as a distinct ailment, and in the year 1829 Louis gave it a name, but even then it was supposed, as its name indicates, to be a milder form of typhus; and not until nearly twenty years later was a differential diagnosis made; finally, in the year 1880 the bacillus typhosus was discovered and since that time we have been trying to obtain a remedy or plan of treatment that will destroy the germ without destroying the host. As to the medical treatment of the disease you will no doubt hear enough before this meeting closes to convince you that it is still unsettled and as to whether it can be aborted or not I leave for others to discuss, especially those who are engaged in this line of work. But there is another side of this question, and that is the sustaining of the vital forces while the disease is in progress.

It is the steering of the ship through the storm that

marks the successful mariner. The successful guide is he who avoids all dangerous routes. Likewise the practitioner is judged by the result of his work; his rate of mortality is what marks the successful physician and especially is this true in the treatment of typhoid fever. We believe sustaining the vitality of the patient is of as much importance as the medical treatment of the pathologic conditions present; also that any agent which contributes to this end is a great aid in the successful management of a case.

What influence does alcohol have in thus sustaining the vital forces of the patient through this trying ordeal? Let us first refer to some of our authors and notice briefly their teachings on this subject. Von Ziemssen, in an article which appeared in the *ASSOCIATION JOURNAL* of 1887, closes by saying, "It is better to give too much alcohol than too little." Another able writer in the *Medical Press and Circular* of 1887 says: "A very important point in the treatment of typhoid fever consists in the administration of alcohol. When we have a long continued febrile process it is requisite and necessary to give wine in all cases, without exceptions, from the first." The same author tells of the enormous amount that may be taken even by those who are not accustomed to its use. Another writer of the same year says, "In the treatment of typhoid in children, for food, give bouillon, barley water, lemonade and milk, and if there is much prostration alcohol and extract of bark."

These are only a few quotations showing the teachings of the last decade and we will hastily pass to the instruction given in our latest text-books.

Dr. Osler, in his first edition, 1892, says: "Alcohol is not necessary in all cases, but may be given when the weakness is marked, the fever high and the pulse failing." In his latest edition, 1895, the same language is used, showing no change in the author's opinion, or an oversight in revision.

Professor Whitaker, in his "Practice," tells us that "alcohol is the best whip for a flagging heart, in a mild case in the form of wine, in a severe case in the form of whisky and in the most protracted cases the alcohol should be given in the form of brandy." He also says: "A threatened collapse may be bridged over by a cup of black coffee with a teaspoonful of cognac," and closes the paragraph by informing us that nitroglycerin, 1-100 in doses of 3 drops in whisky is one of the most powerful agents we possess.

Bartholow, in the last edition of his "Materia Medica and Therapeutics," after discussing the subject of alcohol at some length, closes by saying: "The chief utility of alcohol in these diseases [referring to fevers and other depressing maladies] is not as a stimulant but as a food. It furnishes material, easily oxidizable, which can be applied as nervous, muscular and gland force," and then says, "it should be given with milk, eggs, broth and other suitable aliment." The same author says that the action of alcohol on the nervous system is that of a narcotic.

With such indefinite statements as to the action and use of so potent an agent as alcohol on the system is it any surprise that the mortality runs from 10 to 30 per cent? In reference to the medical properties of alcohol there is a difference of opinion. It may be germicidal, but this property can not be utilized in the treatment of typhoid fever. So we come at once to the question of greatest importance. Is alcohol a food and does it assist in tiding the patient over a crisis.

A food as defined by Dr. Chapman in his "Physiology," is any substance, inorganic or organic, solid or liquid, that will nourish the body and renew the material destroyed in producing the phenomena of life. The same author says that alcohol can be of no benefit to the system, for it is found as such in the organs untransformed or is excreted unchanged; hence, it can not supply any want by simply passing through the system and if it is burned up it must interfere with the oxidization of other substances, such as fat, etc. He further states that alcohol diminishes the amount of urea excreted and the action of the skin, interfering with natural combustion, thus preventing the whole nutrition of the body; and then closes by stating that as a medicine it is indispensable. This alcohol is a peculiar drug; it has been found in the brain unchanged, excreted likewise, yet as a medicine is indispensable. What medical property has it that can be made use of with benefit to the patient of typhoid fever?

Methinks I hear some one answer, "a food to nourish the patient;" another, "antipyretic to reduce the fever;" and still another, "a stimulant to tide over the crisis, to whip the lagging heart." Does it rest or strengthen a tired horse to whip him into a trot? Alcohol has a paralyzing influence and all the effects of its use, which seem to be the result of stimulation, can be shown to be those of paralysis. The first effect of alcohol on the brain is that of paralysis and affects the faculty of reason, and as Bunge says, "the emotional life is brought into free play unhampered by the guiding strings of reason." The same author states that another paralytic symptom which is erroneously regarded as one of stimulation is found in the deadening of the sense of fatigue.

Dr. Kellogg, in an excellent paper published in the December *Bulletin*, after reviewing the physiologic relations of alcohol as set forth by Professor Bunge, closes with the following language: "In view of such testimony as this how is it possible for anyone still to maintain the old error born of the ignorant and pernicious idea that alcohol is a food, a tonic, a stimulant, a rejuvenant and a conservator of energy. It would seem to be time that physicians were considering this question of the medical use of alcohol seriously and conforming their practice to the facts of science instead of the traditions of our medical forefathers and the formulas of obsolete text-books."

How is it to-day with the young doctor as he leaves his alma mater, his diploma under his arm? Among many other delusions and theories that fill his mind is one that alcohol is useful in all diseases and conditions, from the bite of the poisonous snake to puerperal hemorrhage. In one pocket he carries a dose book containing a list of poisons and their antidotes, and perchance a copy of the code of ethics. In the other his medicine case filled with tablets and triturates of all kinds, from nitroglycerin to sulphate of magnesia. I have wondered why some enterprising drug company did not make tablets of alcohol. How convenient they would be. Thus armed, the young disciple of Esculapius goes to the field of battle. It is not long till this young soldier comes in contact with a case of typhoid fever. The symptoms are not just like those described in the books or heard in the lecture room, but while he is waiting for something to happen the patient passes into the second week of the disease. By this time the symptoms are more marked and by exclusion a diagnosis is made and

time is hastening us into the third week, which is one of debility and depression, and the first thing thought of is alcohol, which is given freely. If it is well mixed or alternated with suitable nourishment the case may terminate favorably; if not the alcohol only hastens the end.

We believe the mortality from typhoid fever has been gradually lowering, and no doubt is due in a great measure to the non-use of alcohol in the treatment of the disease. There is hardly a week passes that some of our journals do not report a series of cases treated without the aid of alcohol in any form. I used alcohol in the treatment of the disease until two years ago, when I became alarmed at the mortality, so I changed my plan and in 1894 I treated thirty-seven well-marked cases of varying degrees of intensity. I had two fatal cases, and in both of them I had used alcohol. In 1895 I treated thirty cases of about the same type with no death. I only used alcohol in one of them and it caused me more trouble than any of the others. As this case was in the family of a saloon-keeper I could not control the matter, and they would give it during my absence. On my return I would find the face flushed, the temperature high, the pulse rapid and the patient nervous. By close inquiry I would find that some of the family had given just a little good whisky, which had been in the house for twenty years.

In closing, I wish to state I am well convinced that in the treatment of typhoid fever our patients will do better and stand a better chance of recovery if we abstain entirely from the use of alcohol in the treatment of the disease.

DISCUSSION.

DR. J. N. QUIMBY.—It can not be said that the author of this paper is at all prejudiced. He has tried the alcoholic treatment thoroughly. I have also tried the use of it. I grew up at a time when it was regarded as a panacea for all the ills that flesh was heir to. It was a food, a stimulant and a nerve supporter. It was just after the attention of the world was drawn to Liebig, who made the fatal mistake of thinking that because it had a certain amount of carbon it supplied what was needed in the body, when, in fact, it is no carbon. We started with the mistaken idea that alcohol was a stimulant and supported the body; that it would act as a powerful nutrient to the blood, but that it must not act as an anesthetic. It is impossible for anything to act as food when it acts as a narcotic. We have been using it because our forefathers recommended it. We did not take the trouble to analyze and see what it was. A valuable example is that of the soldier (Martin) wounded in the abdomen, the wound healed but the aperture remained open. Through this a physician was able to study the process of digestion. Whenever he used alcohol in any form it always interfered with digestion. There are the practical tests of Summerville, Richardson and thousands of others that have been made, and notwithstanding that fact, the majority of the medical profession continue to use alcohol as though it was food, stimulant and supporter of the basal nerves, when, in fact, those who have paid attention to the matter have concluded that it is neither one or the other, and yet, if you give a small dose it interferes with digestion, because it precipitates the pepsin of the gastric, and anything that does that is not a supporter. For the last twenty years I have not used a drop of alcohol. Give a certain amount of nourishment but do not destroy that with alcohol. In my cases there is generally a higher rate of cures than of those who use alcohol. I was once called in consultation over a very old gentleman, to whom the physician was giving alcohol,

a glass of champagne and one ounce of brandy. I decided that he had an uncertain pulse. It seemed to have a better volume, and I took into consideration that he was soothed with alcohol. You know 5 per cent. is a large portion. It is dangerous to introduce 10 per cent. Notwithstanding all the stimulants the patient died. I believe he died from alcoholism rather than typhoid fever. I give this as an example where we are making a grave mistake in using alcohol, because we know it is a narcotic, it paralyzes the mind and muscles. To administer it as a heart tonic will do more harm than good, because it is not a heart tonic but a narcotic.

DR. MCDANIEL of Alabama—I have some knowledge of this subject of alcohol, as we all have of every remedy we use. A man of my years has frequently heard these conflicting views and has witnessed the results as claimed of the different remedies. I do not wish to controvert nor yet to advocate what has been said here on the subject; my object is to enter a protest against extremism. I look upon alcohol as an anesthetic, and I believe is a fertilizer of the basal nerves. Illustration is one of the most powerful arguments brought into discussion. We are asked, what effect does alcohol have upon the vital actions and the functions of the body in health or disease? Suppose I take a small alcohol lamp and put a match to the wick. The first thing I know the alcohol is burned up. There has been some heat generated when the alcohol was burning and when the small wick was burning out. If we give alcohol to the patient it comes up to the capillaries of the lungs, which we call the wick of the human lamp. It keeps up the temperature of the failing, feeble patient. If he is disposed to get cold, if he verges beyond the stage which you describe, I think you have witnessed that this supplementary food was of some use. I don't believe we understand theories fundamentally enough to base an exclusive dogma on the action of experiments; but when I see the results on patients in typhoid fever I know something about the action of alcohol. I was once extremely prostrated with typhoid fever. A friend gave me sweetened water with cognac brandy and nutmeg grated over it. My nerves were all unstrung and I was tossing from side to side; but in fifteen minutes my nerves were quiet and easy. I have tried stimulants hundreds of times in that nervous condition of the system, and I know no other nerve tonic which can equal it. It will produce perspiration in a dry, raspy skin, and will produce sleep where there is insomnia. I know that alcohol does good sometimes. There are two sides to this question and we should not go to either extreme. Let us say it does have an important function. If you experiment upon yourself and are benefited by the use of alcohol, it is the alcohol which makes you feel so much better.

DR. QUIMBY—I admit there is always apparently some benefit to be derived, but the point is, if alcohol has done so much good, which we admit to a certain extent, if it has saved one life, for that life it has saved I can cite over one hundred which it has destroyed. Therefore it can be treated on the practical point that there can not be found a case where alcohol will do for which other remedies may not be substituted that will do better. You hesitate about giving opium for fear of the danger that will result from the appetite created for it, and yet you prescribe alcohol. When you look over this broad land and see how many homes are beggared, how many graves filled from want, destruction and disease, and realize that this is done by the use of alcohol to a very large extent, I say if we possibly can avoid it, let us do so. There is much to be learned in reference to alcohol. It is not only injurious, but creates comment among the laity regarding the medical profession; then, too, there is the condition which the poisonous element of alcohol leaves one in. We have a double poison, that of alcohol and by urea. It prevents the destruction of tissue which ought to come out of the body. If not cleared of the poison that the system secretes daily, you are

sure to suffer from the effects of it. We have also much to learn in reference to the *modus operandi* of alcohol. It creates within the body an irregular form of appetite and habit. For these and countless other reasons we should make use of the many remedies which can accomplish all and more than the good resulting from the use of alcohol without its baleful effects.

DR. HIBBERD—It has been stated that a stimulant was one which was founded on nutrition. Is that true? Is not a stimulant something which renews strength in the tired organs and alcohol that which spurs them on to renewed activity? Depression comes simply because the active agents have been overtaxed; but there is that corresponding rest in depression until it shall recover the average strength. I think this definition of a stimulant is incorrect.

DR. KOBER—It seems to me the Doctor's statement is somewhat misleading as to the effects of alcohol on the system. It is very difficult to understand that alcohol produces a paralyzing effect upon the heart muscle, when we all have seen the stimulating effects of a greater or less quantity of alcohol. The statement was made that it interferes very seriously with urea elimination. This may be the case in advanced stages of Bright's disease, but is certainly not the usual effect of alcohol. It has a stimulating effect on the kidneys. In regard to the particular effect of alcohol, the Doctor made a statement that whenever 10 per cent. of alcohol was taken in the blood it would prove destructive. That may be so, but I am inclined to think that he is confused in his ideas in regard to the operations that are going on in the stomach.

DR. COCHRAN—I am only going to express my gratification that alcohol has found some friends in this section of the AMERICAN MEDICAL ASSOCIATION. I think all of those books are unscientific and based upon indirect information. I recognize fully the value of alcohol. I can say it has been a blessing to the human race and so far as I am concerned, am sure that I would not be alive but for it. We should not allow personal prejudice too much latitude. As to killing people, I suppose it does; but how much time and alcohol does it require? As to destruction of property, it probably makes some people poor, but that is caused by abuse and not the use of alcohol. To combat that theory is the apparent benefit with which it is almost universally used. The most prominent, the wealthiest and most successful men use alcohol apparently with good results. When General Booth made the celebrated investigation into the causes of pauperism in East London, which cost many thousands of dollars and filled two or three volumes, he found that only 13 per cent. of the pauperism of East London was traceable to inebriety. There are many things connected with alcohol in the system that we do not know. I feel that the fact that it has always been used is a sufficient reason for its having some valuable qualities.

DR. GARBER—I do not wish the Society to understand that I am an extremist on this question, I simply wish to learn, and have been much benefited by the suggestions; there are a few things which have been said that I think should be referred to. In fact, some have drifted away from the subject and discussed the question from the moral standpoint. I did not refer to that in the paper. I believe that the trouble originates greatly from the teachings of the text-books. They teach that it is necessary in all of these cases. One brother has spoken of it saving his life in typhoid fever. I think under the same conditions hot water with some ordinary stimulant would have had the same result. The last gentleman on the floor has made the statement that most of the successful men have been in the habit of drinking. I would refer to Rockefeller, and Daniel of Ohio, as well as many others who are strictly temperate and yet have attained great success and achieved some prominence. He also spoke of the pauperism of East London. I have been connected with the Ohio Peniten-

tiary in an official capacity and the result of my observation is that 70 per cent. of 1,940 convicts come there directly or indirectly from the use of alcohol. I mention that as regarding the moral side of the question which I have heretofore avoided discussing. One gentleman used the burning of an alcohol lamp as an illustration; on the same principle why not use gasolin or make a decoction of coal products and other things we use outside of the body, for oxidization. I do not believe alcohol can be oxidized in the system. It can be burned outside. We would not think of inhaling natural gas because we use it for illuminating purposes. A few inhalations would satisfy us, I think. I have followed it with much interest, but I yet believe it is a bad thing to use alcohol in the treatment of typhoid fever.

TRANSFUSION, INFUSION AND ANTO-TRANSFUSION; THEIR COMPARATIVE MERITS AND INDICATIONS.

Read before the Kentucky State Medical Society.

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Whenever a number of measures of a more or less varied and changeable character are advanced for the fulfillment of a long existing demand, it means an absence of unity in the selection of the proper measure and a general distrust in a satisfactory adjustment of the demand. This is clearly illustrated by the number of procedures that from time to time have been recommended to overcome the depressing and even fatal condition following enormous hemorrhages.

The fact that the operation of transfusion is but rarely performed at the present time, and that of infusion faring but little better, tempted me to refreshen the subject somewhat more than a month ago before one of our local societies. Since that time I have been impressed more than ever with the neglect to which these operations have been subjected and the importance of bringing them before the eyes of those engaged in operative work.

I may be pardoned for borrowing from my former paper the historic outlines in connection with the development of these minor operative procedures.

The first intimation of transfusion can be found in the 333d and 334th verses of the seventh book of Ovid's *Metamorphoses*, "*Veteremque haurite cruorem Ut replam vacuas juvenili sanguine venas.*" This carries us back to the time of Christ, and from then down to the present period; "a long but unbroken chain can be traced running through the Hebraic and Egyptian medical records." In 1492, or more than a hundred years before the circulation was understood, Pope Innocent VIII. was struggling with his last illness. He was attended by a Jewish physician who, it is supposed, was prompted by the idea noted in the verses of Ovid and performed transfusion with the blood taken from three Roman youths. In 1615 Andreas Libavious, of Halle, wrote an article upon a charlatan who is supposed to have performed transfusion. In 1628 another appeared under the authorship of Johann Colle; coupled with these came the discovery of the circulation by Harvey, which was directly responsible for the vigorous attention which the learned men at that time gave to the subject.

In 1652 an apparatus for arterio-venous transfusion was contrived by Folli, of Italy. In 1666, Richard Lower drained a good sized dog by tapping the jugu-

lar vein. When the animal was exhausted he filled the vessels with blood drawn from a cervical artery of a second dog until the animal had recovered; he then drained the same animal a second time and again filled his arterial system with blood from a third dog, thus completely changing the blood twice in the same animal without any unfavorable consequences. This represents the first well-authenticated experimental maneuver made in the direction of transfusion.

This aroused an interest in the Royal Philosophical Society, and it was then believed that a remedy had been discovered which was not only capable of curing disease but by means of which the aged could be transformed to the youthful and the immoral could be changed to the moral. So strong was the belief in the latter, that a trial was actually undertaken by Lower and King.

At that time a religious fanatic by the name of Arthur Boga, 30 years old, offered himself in consideration of a guinea as willing to undergo the experiment, which was conducted, in the presence of the Bishop of Salisbury and a large and brilliant audience, by Lower and King. Six to seven ounces were withdrawn and ten ounces of arterial blood from a sheep was injected. This operation was again successfully performed on the twelfth of December of the same year by the same operators.

It must be noted, however, that these experiments were preceded by others performed by Jean Dennis and Emmerez in Paris in the year of 1667, and to whom the honor of the first successful transfusion in a human subject is due. Dennis employed the blood of a lamb, and several times repeated the operation upon several different subjects with almost uniform success, so far as the transfusion was concerned. These operations aroused a vigorous and jealous opposition in Germany, France and Italy, and were partly terminated when Dennis narrowly escaped a trap that had been set for him, but notwithstanding his innocence, it had involved him in a criminal case.

From this time enthusiasm began to lag and matters continued with a varied interest until 1818, when James Blundell, the obstetrician, placed transfusion upon a scientific basis, at the same time giving a method for its correct performance. To Blundell is likewise due the honor of first employing human blood instead of that of lower animals for the transfusion. With this the history of transfusion can be dismissed. In parting we might add that there are but few procedures known to medicine whose histories are more replete with incidents that are as varied, interesting, pathetic and amusing as the history of transfusion.

Before entering upon the subject of transfusion, it is well to glance at the conditions which are produced by the loss of large quantities of blood.

In dangerous hemorrhages death may ensue from one of two causes, i. e., either from the absolute loss of blood itself or from a fatal reduction of the intravascular pressure. In the first instance, the amount of blood is insufficient to meet the demands necessary for the sustenance of life. This makes the case unmistakably clear, and the indications are more blood, or death must ensue. In these cases nothing short of transfusion will fulfill the requirement; fortunately, however, these constitute the minority. In the majority of cases the death following hemorrhage is not due to the direct loss of blood itself, but rather to a disturbance in the mechanism of the cir-