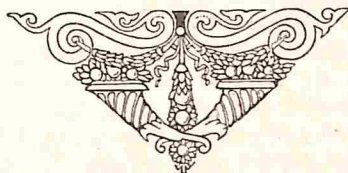


Simplicia - Alcohol Physical Effect

Alcohol

A Study of the Nature of Alcohol
and its Effect on the Brain, Circulation,
the Nerves, Character, Citizenship,
Child Life, Heredity, Disease,
Sex Life, Government,
and Spiritual Life



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I. What is Alcohol?

SHOULD a new beverage be universally introduced to the people which would make the healthy sick; the prosperous, poor; the loving father and husband brutal to his family; and cause nothing but sorrow and degeneracy to those who used this new drink. there would be a general uprising of the people to prevent its sale and manufacture. Alcoholic indulgence does all this and more, yet the custom still prevails.

Alcohol is a powerful, chemical substance produced by fermentation of sugars, (except sugar in milk). Fermentation is caused by a one-celled germ known as the yeast plant, entering sweetened fluid. The air is full of these minute forms of vegetable life. They produce something which is called ferment. Therefore, to prevent fermentation, the air or anything containing these yeast germs, must be excluded from sweetened fluid. When it does enter a fluid it buds and multiplies very rapidly, breaking the sugar into alcohol, water and carbonic acid. The bubbles of carbonic acid gas rise to the surface, but the alcohol remains in the fluid. When alcohol to the strength of 13 per cent has accumulated in a fluid it injures the yeast plant and stops its growth.

Alcohol is a narcotic, irritant, water absorbing, anaesthetic drug, that is classed by druggists with opium, chloroform and cocaine, and should be feared by the people as are these drugs. It has power to create appetite for itself, and is found in all fermented liquors, such as wine, beer and cider.

Why Alcohol is Destructive.

To better understand the following lessons, and why alcohol destroys all life, we give the following, which to many may seem like elementary information:

The bodies of all living things are made of cells of many kinds. Thus we have blood-cells, brain-cells, muscle-cells, fat-cells, nerve-cells, liver-cells and many others. These are grouped into organs according to their work. Our life and health depend upon the strength and working ability of these cells.

Each cell is encased in a fatty substance which acts as a binding wall holding in the cell contents and preventing them from escaping. Each nerve fiber is also covered with a jacket of this fatty substance. Alcohol is soluble in this fatty substance as is chloroform. This places alcohol in the class with depressants and anaesthetics. Alcohol will also absorb water from albuminous substances, leaving the cell shrunken and disabled, which impairs the vital activities of every living cell, both in plant and animal life.

If any group of cells is depressed by a drug, the vitality of the whole organ is lowered. Alcohol is now recognized among the prominent poisons (such as lead and the toxin of infectious disease germs) that have a depressing effect upon cell life.

These groups of cells, Dr. T. Alexander MacNichol, of New York, likens to a state, "Each group of cells is a community having its own work and local government, but all subject to the central government, the brain.

"Some cells are architects, others are builders of solids, or generators of fluids; some construct muscle, bone and nerve, some tear down and remove rubbish, others like policemen arrest and imprison offending germs, others like scavengers gather up the waste and dispose of it. Let any considerable number strike for shorter hours or more provision; let any narcotic poison check their work or slay them, and the entire organism of the

body will be deranged; and if the strike be long continued the whole machine will be shut down and the manager will go out of business."

A substance that impairs or injures cell life has no power to promote health, or to repair wasting tissue in sickness and should be avoided as are other dangerous drugs.

When the above facts are known it is easy to understand the large number of cases of sickness and death among those drinking alcoholic liquors, and when these facts are known by the majority of voters, it will be as hard to get them to legalize places for the sale of alcohol as it would be to legalize opium joints in a community.

What is alcohol? What causes fermentation? What is the highest per cent of alcohol in fermented liquors; why? What kind of a drug is alcohol? With what do druggists class it? Of what are plant and animal bodies composed? Upon what does health depend? What covers cells and nerves? How does alcohol affect this covering? How does alcohol depress vitality?

II. Effect of Alcohol on the Brain

IT is now generally understood that alcohol is a narcotic-irritant poison. Narcotic poisons affect the nervous system; irritant poisons affect the membranes and tissues, and narcotic-irritant poisons affect both.

Each poison has a selective affinity for a special part of the body. Thus mercury first affects the salivary glands and strychnine the spinal cord, but alcohol selects as its choice the brain, the most vital and important part of the human body.

The brain is composed of cells, star-like and small, but by the use of a microscope millions of them may be counted. These cells are connected by nerve fibers that transmit the brain impressions to the muscles and are collected in groups which are known as nerve centers. Each center has a special work to do. The condition of these nerve centers determines whether our work is done well, indifferently or not done at all. Every muscular movement of the body is controlled by a nerve center in the brain, which is simply a group of nerve cells.

The brain cell centers have a definite order of growth. The unvarying rule of nature is that the first to be created is the last to be destroyed, and the last to be created is the first to be injured or destroyed. This rule seems to have no exception in relation to brain-cell formation and destruction.

The first organ and nerve center of the brain to appear in the prenatal infant is the muscle of the heart and the brain center that is to control it through life. The next organ to develop is the lungs. The third development is the nerve center that presides over voluntary muscular movements. The fourth group of cells or centers are those which make possible the attainment of knowledge. The last group of cells to be developed or formed are those which have to do with self-control and self-discipline. These are the brain cells that control the moral and spiritual life.

Dr. Chapple, M. D., M. P., says: "This upper compartment is the home of the spirit, The Temple of our God. If it is entirely absent there is no place whereon the Son of Man can lay His head."

Alcohol by affecting these brain centers in the inverse order of their development, attacks the moral or self-control centers first. Thus the finest attainments of life, among which is the power to know God, are the first to feel the blighting effect of alcohol. The loss is determined by the amount of alcohol consumed. The fourth group to be formed is the second to be injured by alcohol. By disturbing these knowledge centers we find that facts are poorly understood, impressions are dimly recorded and the sense

of time, space and distance is confused. This fact has led railroad officials and employers of men to demand total abstinence of their employees.

By paralyzing the third group of nerve centers muscular movements are made unsteady, as we readily see by the staggering gait of the drunken man. At this stage of intoxication many accidents occur to men who work around machinery, and who move among the traffic on the street. The last centers to be disturbed are the ones that control the heart and lungs. Death is, of course, the penalty for this extreme indulgence, but these cases are rare.

If alcohol has such destructive effects upon a mature man what must be the effect upon the tender brain-cells of the unborn child? We know the order of growth or development of the brain centers. If the mother uses alcohol it may soon be found present in the unborn child.

The effect is in the same order that we found it to be in the adult. If the centers of control are disturbed or destroyed the child may be a criminal before birth. If the centers of knowledge are impaired to a sufficient extent, an imbecile child may be born, or insanity may develop later in life. Add to this, undeveloped brain centers which should control the voluntary muscular movements and we have the idiot, which is a child that can not restrain impulses, acquire knowledge or control muscular movements.

If the destruction continues until the centers that control the lungs and heart are paralyzed the child is dead-born. Prof. Hahnel in writing for the journal of the German Abstaining Teachers' Society says: "Among Bavarians, the greatest beer drinking people in the world, 300 of every 1,000 babies are born dead, and 69,000 die annually in the first year of life. Norway's per cent of dead-born babies was the same before their great temperance movement gained such headway; now the infant mortality has fallen to between 80 and 90 per 1,000.

As one brain must last a lifetime it is unwise to injure it with alcohol, and it is a crime against an unborn child to impair its brain so that it will be predisposed to crime, ignorance or insanity.

What does narcotic-irritant poisons affect? What part of the body does alcohol first affect? What is an unvarying rule of nature? Give order of nerve center development. Give order of nerve center destruction by alcohol. How are brain cells of an unborn child affected by alcohol? What does Professor Hahnel say of Bavarians? How many babies die in a year in first year of life in Germany? How many in Norway? Why should brain substance receive extra good care?

III. Effect of Alcohol on Circulation

CIRCULATION of the blood is caused by the heart, which is a hollow muscle, pumping the blood throughout the body in the blood vessels.

The blood is composed mainly of fluid and cells. The red cells carry oxygen to the tissues. Alcohol lessens the strength of the red cells. A small dose of alcohol does not reduce the number of these cells, but affects their resisting power. Health depends upon the vitality of the red cells.

The white blood cells are the policemen of the body that stand guard against disease. As soon as disease germs enter the blood, or the body is wounded, some of the white cells leave the blood vessels and hurry to the injured part. These white cells have the power of putting out little arms and enclosing the disease germs, later devouring and digesting it.

When the body is in danger the bone-marrow and certain tissues will produce these white cells to three or four times the number that is normally in the blood. A small amount of alcohol will paralyze these cells, which prevents their reaching the injured or diseased part. This allows the poison or disease germ to enter the blood, go through the system and attack the weakest part of the body.

In the presence of disease germs, the fluid of the blood also has the power of developing a group of chemical substances which in various ways protect the body from disease. Thus, for example, one substance dissolves the disease germs; another destroys the poisons thrown out by these germs (such as the poison of pneumonia and diphtheria.)

Recovery from germ diseases is partly due to the production of these chemical substances in the blood. The presence of alcohol in the blood stream hinders the development of these substances thus rendering recovery doubtful or impossible.

If the walls of the blood vessels become diseased and weakened, as they often do in those who use alcoholic drinks, they may burst, causing hemorrhage. When this occurs in the brain a clot of blood forms on the outside of the wall of the vessel and the death certificate reads "apoplexy." The heart rests after every two beats; alcohol shortens the rest period, and also produces fatty degeneration of the heart muscles. This causes exhaustion which may result in another death certificate reading "heart failure."

Cases are cited where alcohol is used with apparent success to restore those who have fainted. The following explains the apparent stimulation:

Alcohol, when given, irritates the nerves of the mouth and stomach; this excites the nervous system. Alcohol also paralyzes the nerves which control the blood vessels. This relaxation of the muscles in the walls of the blood vessels, induced by alcohol, allows the blood to flow freely. This causes the apparent effect of temporary stimulation, as the flow of blood to the surface gives the impression of increased warmth, but really reduces the body's temperature. Although the heart beats faster, less blood is pumped than normally. This tends to relieve the heart, but its relaxed and enfeebled condition rapidly leads to dilation of the heart.

The act of swallowing also quickens the heart's action regardless of the substance swallowed.

Martin and Stevens in "Studies from the Biological Laboratories of Johns Hopkins University" sum up the whole matter in these words, "It has yet to be proved that the heart muscle can be stimulated by alcohol."

As alcohol can not stimulate or strengthen the heart it only adds to other heart disturbances, and when disease or accident calls for strong resisting power, the thin, flabby walls of the alcoholic's heart fail to meet the demand, and the penalty of drinking even beer and light wines is often paid with the drinker's life, and another death certificate reads, "Cause of death, heart failure."

So the remedy that was expected to "strengthen the heart" really joined with indigestion or other causes which made the first trouble, and made recovery impossible.

What is circulation? Of what is the blood mainly composed? How does alcohol affect the red cells? Upon what does health depend? Describe the white blood cells, and explain their office. How does alcohol affect them? Describe the chemical substances of the blood fluid. To what is recovery from germ diseases partly due? How is apoplexy and heart failure sometimes caused? Explain the apparent stimulation following the use of alcohol.

IV. Effect of Alcohol on Nerves

THE brain, spinal cord, and nerves are parts of the nervous system. There are two sets of nerves. One set carries the sensations to the brain, where judgment dictates to the other set of nerves the exact muscular movements necessary to protect the body from harm, or to accomplish the most accurate workmanship, or to excel in athletic sports.

Gradually machinery is taking the place of muscular labor. These machines are complex and powerful and require steady nerves in the operator. Other things being equal, the man with the strongest nerve force is the best workman. This is better understood when we know that the nervous system controls every muscular movement, controls the secretions of the body and governs our memory, thoughts and emotions. When pure alcohol bathes the substance from which nerves and their branches are largely made, the nerve substance coagulates (clots) and is therefore killed by alcohol. (Kirk's Handbook of Physiology, Page 3). Alcohol is dissolved by the fatty part of the cell and the fatty substance that serves as a shield and insulation to the nerves. (Cuttan's Psychology of Alcoholism, page 17.) These changes in some way interfere with conducting the impulses correctly along the nerves to the muscles. This explains why accidents often occur after drinking. They may occur even after drinking small quantities of alcoholic liquors.

This condition of the nerves also makes it difficult if not impossible to correctly measure distance. This fact causes many accidents to those who work around machinery or who are in congested street traffic while their nerves are still unsteady. This "hold over" effect may last from 24 to 72 hours, according to the individual.

Many managers of railroads and great business interests know this, and refuse to depend upon men who will injure their brain and nerves with alcoholic drink, even slightly, so that they are less dependable for accurate thinking and quick action.

The laws to protect the life and limb of working men have never been so strong as at the present time. In some states the employers are responsible for injury their workmen receive while on duty. This fact makes employers more careful to employ men with clear brain and steady nerves, as they well know that all safety devices are useless unless the man using the machinery is reliable.

The Continental Rubber Co., as one means of reducing accidents, forbade their men drinking brandy. Previous to this, the percentage of accidents was as high as 15.42. Two years after, the percentage of accidents was 6.06.

Not only does alcohol increase accidents, but it also reduces working ability and deceives the worker. He does less work, but is not aware of the fact.

A German scientist demonstrated this by experimenting on four men, compositors in a printing office. It was found that the men averaged a loss of 8.7 per cent in working power after taking even very small amounts of alcohol. The men believed they were doing more work than when no alcohol was taken. Other experiments proved that the effect was also shown the following day. Many men are paid only for the amount of work done. It is only fair to themselves and to their employers to be able to do their best work. Only total abstainers can do this.

Name parts of nervous system? How many sets of nerves; what are their offices? What does the nervous system control? Why do accidents occur after using alcohol? Explain "hold over" effects. Why do railroad officials demand total abstinence of their men? Why do manufacturers refuse to employ drinking men more now than formerly? How did the Continental Rubber Company lower per cent of accidents? Does alcohol lower working ability; do workmen know it? What did a German scientist demonstrate?

V. Effect of Alcohol on Character

CHARACTER has been defined as "what one really is," and reputation as "what people think one is."

The character of a nation is no stronger, nor better, than is the character of the people composing it. Anything that injures the character of the individual injures that of the nation as a whole by just that much.

Psychology tells us that every thought leaves a path in the brain substance; repeated thoughts along the same line make grooves, which, when deep enough are called habits. The repetition of the same thoughts and continual training of the same muscles make the expert in any line of work.

The use of alcohol continuously, even in the so-called moderate quantities, impairs the finer qualities of the mental faculties that arise from the activity of those brain cells which have been latest developed. This reduces the tendency toward kindness, courage, love, truth and all the better attributes of life that make staunch, noble character. (By the process of evolution, the law of which is to make better under right conditions, we are gradually conquering evil with good. The ability to do this depends largely upon self-control, which is the highest power of the mind.)

We also possess qualities of opposite character. Alcohol has the effect of exciting the brain cells of the lower and animal impulses. With self-control reduced and the animal instincts aroused, crime is more easily committed.

It has been generally understood that alcohol makes men irritable, reckless or silly. Alcohol does not create anything in the human mind, but appears to do so because of the paralyzing effect that it has on the nerve centers of the brain which control judgment, conscience and self-control. Thus we find one who is naturally brave is reckless, one who is lacking in kindness may be brutal or vicious and one who is good-natured may be silly after drinking alcoholic liquors.

The foundation of character is truth and honesty. One of the changes noticed in many persons after continued drinking of alcoholic liquors is a lack of truthfulness. They are thought to be deliberate liars, as they falsify in small things that could not possibly benefit them, as well as in things of greater importance. But this is understood when we know that memory, one of our finest attainments or developments, is very easily injured by alcohol. The cells upon which memory depends, fail to record exact impressions, the facts so dimly recorded are easily forgotten or not told as given, and the one so mistaken is not considered reliable. Many railroad accidents have been caused because orders were forgotten or misunderstood. This is one reason why railroad officials refuse to employ drinking men.

The edge of honesty is also dulled; thus we find drinking among public officials, graft, individual, state and national dishonor go hand in hand; the fine sense of honor is always impaired.

These facts, together with the fact that dulled moral impressions are still duller in the next generation, make the use, sale and manu-

facture of alcoholic drinks a national problem, and call for every patriot to take up arms against this great destroyer of character, using the truths as revealed by science as weapons.

What is character? How is the character of a nation determined? What does psychology teach about the formation of habits? How does alcohol impair the finer brain qualities? What is the law of evolution? Does alcohol create anything in the mind? What are the foundations of character? Why are users of alcohol thought to be liars? What is a patriot's duty toward alcohol?

VI. Alcohol and Citizenship

NO class of citizens is more loved and respected than the men who fought for our country. Many favors are shown them because they put love of country before love of life or family or personal gain.

There are nations that have been powerful that today stand low in the scale of nations. Others show little progress. The heads of some of these governments have investigated the cause of this decline, and have found that the almost universal habit of drinking alcoholic liquors, has lowered the physical, mental and moral force of the people. This is reported as one of the great causes of degeneracy.

Some of the leading French physicians believe that the lowered birth-rate of France is due to alcoholism, although light wine is the national drink. In France, Germany, England and Spain posters have been issued by local governments warning the people against alcohol in even moderate drinking. Horsley tells of the French posters being printed in black type on white ground. Only state officers are allowed to use this style of printing. This gives authority to the posters and ensures their being read carefully. Holland and Belgium, the states which own all railways, have forbidden the sale of spirits at their railway stations. Switzerland has published 172 pages of official literature against alcohol which includes the practical, social and scientific aspects of the liquor problem.

There are thousands of men in the royal navy and the royal army of Great Britain who are members of various temperance organizations. These organizations are encouraged by the British officers.

Germany's far-seeing Kaiser, William II., in a great speech to his naval cadets, urged them to form total abstinence societies as the British had done, adding, "The next war and the next naval battle will demand of you sound nerves. Nerve power will decide the victory. **VICTORY WILL LIE WITH THE NATION THAT USES THE SMALLEST AMOUNT OF ALCOHOL.** That, gentlemen, must be your position, not as individuals, but as Patriots."

The general interest in this subject has become so great that at The Thirteenth International Congress against alcoholism which was held at The Hague, in September, 1911, a memorial was sent to the head of every government in the world asking that a commission of specialists be appointed to investigate the effects of alcohol, and make public the findings. It asked that after investigation, prompt measures be taken to suppress the sale and manufacture of intoxicants throughout the world.

Our country is slow to recognize this enemy. Recognition will come through the enlightened individual who has enough true patriotism to demand that the stamp of the government's partnership shall be taken from the packages that contain the nation's greatest foe, alcohol. National laws are needed to protect us from the manufacture and sale of this enemy of

all nations. National advancement is impossible with a citizenship steeped in alcohol.

Hon. Richmond P. Hobson, in his speech "The Great Destroyer," says, "If character could be measured by percentage, we would have to estimate the loss in average character of the nation as fully 50 per cent. Looking upon a nation as climbing a ladder of evolution, alcohol, like a millstone, drags it half way to the bottom. The full significance of this drag appears when we realize that upon the average standard of character of its citizens must rest the institutions of a nation. It has become an axiom of history that if the average standard of character is below a certain minimum level, a nation can not enjoy self-government."

Why are patriots respected? Have nations changed places in the scale of progress? What has investigation revealed? What do some French physicians believe? What have local governments in France, Germany, England and Spain done to warn the people against alcohol? How were the French posters printed? What has Holland, Belgium and Switzerland done? What did Germany's Kaiser say to his naval cadets? What national laws are needed? What does Hon. R. P. Hobson say?

VII. Alcohol and Child Life

MANY agencies are now working to protect children from that which will cause mental or bodily harm, and to make it possible for them to possess strong characters and bodies.

Unfortunately there are many children who are so handicapped early in life or before birth that they are unable to receive the benefit of the opportunities given them. The children of alcoholic parents often possess such weakened nerves, poor memory and power of comprehension, that no effort to improve such poor mental material can supply that which the child lost at the very beginning of life.

Other children who have not been robbed of mental force have even a greater burden to bear, that of weak moral comprehension.

There is a great army of child criminals in our land for which we provide juvenile courts and child penal institutions. If the energy used to help improve the condition of these unfortunate children had been used to destroy the thing that makes such children possible, much more could have been accomplished for the betterment of the race.

The New York Academy of Medicine gave Dr. T. Alexander Mac-Nichol, surgeon of the Red Cross Hospital, the task of investigating the deficiency of school children in New York City. Fifty-five thousand children were examined. Of these, 58 per cent were below the standard of intelligence, 17 per cent were dullards, 25 per cent were very deficient and 16 per cent nearly deficient.

The habits of parents regarding the use of alcohol, were reported in 20,147 children. Of these, 53 per cent of the children of drinking parents, and 10 per cent of the children of abstaining parents, were dullards.

The family history of 3,711 children was traced for three generations. Of the children of abstaining parents and grandparents only 4 per cent were dullards, while of the children of abstaining parents but drinking grandparents, 78 per cent were dullards. Prof. Bunge, after thirty years of chemical research on the composition of milk, asserts: "The greatest marvel of the living age is that the composition of the milk of each milk-producing species is fitted to the peculiar needs of the nursing of that species. The human milk contains a substance which serves for the construction of the brain that is not found in other milk." Many women, especially the

daughters of drinking fathers, cannot suckle their babies; this may be one explanation why 78 per cent of the grandchildren of these drunkards were deficient.

All agree that alcohol is responsible to an alarming degree for idiocy, epilepsy, feeble-mindedness, and all mental deficiencies in children.

No greater shame can rest upon a government than that it fosters and protects an institution that robs children of their possibility of development, and the ability to stand equal with more favored ones in an attempt to become honorable citizens.

How are some children handicapped? What do children of alcoholic parents often possess? Do other children bear a greater burden? How could we accomplish a betterment of the race? What did Dr. T. Alexander MacNichol find in investigating 55,000 children? What was the family history of 3,711 children? What does Professor Bunge say of milk? Has the natural nourishment of babies any relation to deficiency? What shame rests upon our government?

VIII. Effect of Alcohol on Heredity

HEREDITY is the transmission of the qualities of parents to children. If conditions are right, the process of evolution is always toward the betterment of the species. If unfavorable conditions prevail, the process is reversed, which sooner or later destroys the species.

This law of evolution has been recognized for years as applied to animals, and splendid specimens of horses, cattle and dogs are the result. Even the poultry journals are filled with articles on eugenics. (The science of good begetting.) This has produced the fowl that sells for hundreds of dollars, instead of the mongrel barn-yard chicken that was the basis for this demonstration of the principles of evolution.

When these principles are understood and practiced by mankind we may look for specimens that more nearly resemble the original pattern, "made in the image of God, a little lower than the angels."

All life originates from germ-cells. The cells that unite to form the future child are highly sensitive and possess the power of development, a power no other cell possesses.

The characteristics of the father and mother are represented in these cells; as are the parents just before and at the time of conception, so is the child likely to be. Thus the character, life and health of the child depend upon the condition of the cells which unite to form life. The conduct of the parents from childhood may injure these cells.

Dr. Wigglesworth, in the Journal of Mental Science, says, "If the alcoholic poisoning of the germ cell and ovum have reached a certain degree of intensity, imbecility and even profound idiocy may be expected to result; while of a less degree the injury may manifest itself, when adult life is developing, in different forms of insanity."

If these cells are normal and surrounded and fed by pure blood, a normal and well-developed child is the result; if however, these cells are surrounded by blood, that is poisoned by alcoholic, syphilitic or other toxic substances, the cell is in a poorly nourished condition to begin its journey of life. Nicloux has demonstrated that alcohol from the blood of a mother is readily found in the tissues of an unborn child.

The old Jewish laws were very strict regarding the care of their women at that period, and certain rules were made to govern the lives of married men and women. This has resulted in a race possessed of more than average moral and mental force.

It is an undisputed fact that the mental and physical condition of the mother before the birth of the child may exert a lasting influence on the child. Many instances prove the father to be also responsible. One case reported by Dr. Mott shows that no insanity, or fits, or other nervous diseases existed on either side of the family, but the father was a chronic drunkard. Eight children were born to them. Of these three daughters and two sons are in insane asylums, one son died of tuberculosis, and one son and one daughter are normal.

Grandparents have also a strong influence. Many respectable parents often have children reproducing the bad characteristics of a grandparent.

The latest teaching on these subjects indicates that men and women may influence the quality of children they will produce. It has not been proven, however, that children born of alcoholic parents must be below normal, but it is proven that by weakening the cells of the unborn child it is predisposed to the diseases and mental weaknesses of the family. These tendencies can be partly and at times seem to be wholly overcome by education and good surroundings, but many times they re-appear to curse the next generation with renewed force.

Sir Victor Horsley says, "Evidence indicates that for a child to be 'well-born' at least two generations of healthy men and women must have played their part honestly and well." Darwin clearly puts the same thought as follows: "Our mental and moral characteristics are the direct outcome of preceding generations, and we, the living generations, are like the living fringe of the coral reef, resting on an extinct basis formed by our forefathers, and shall, in our turn, form a basis for our descendants."

To be able to do this well, the masses must be taught that alcoholic indulgence may affect the physical, mental and moral condition of the unborn child.

What is heredity? What is the law of evolution if conditions are right? If conditions are favorable? Has this law been recognized in animal husbandry? What power does the life germ-cell possess? What does Dr. Wigglesworth say? What does Dr. Nicloux say? What case does Dr. Mott report? What does late teaching indicate? What do Sir Victor Horsley and Darwin say?

IX. Effect of Alcohol on Disease

HALF a century ago physicians believed and their text books taught that alcohol was a tonic and stimulant. Dr. T. D. Crothers, superintendent of Walnut Lodge Hospital, Hartford, Conn., in "Delusion as to Effects of Alcohol" says: "One of the first breaks in this delusional evidence was furnished by mortality tables which showed clearly a higher death rate where alcohol was used as a tonic and stimulant. In pneumonia, according to the old theory, the stimulant action of alcohol on the heart was essential, and yet comparisons showed an increase in death rate wherever it was used. A number of recent authors have asserted that statistical studies showed that alcohol could not be a stimulant and tonic. In the treatment of diphtheria when alcohol was given as a germicide and heart sustainer, the mortality rates and the complicating diseases were increased and the entailments following far more serious. The same facts were brought out in the study of tuberculosis, with the addition of diminished duration and greater intensity of the symptoms. The apparent improvement ended in sudden and unexpected collapse and death."

Such startling facts have changed the hospital practices of the world. Cook county reports for 1897, number of patients 19,536, cost of alco-

holic liquors \$80 (only \$.004 per patient), and the death rate from all causes was 5.7 per cent.

The lessened use of alcohol as medicine is shown by the collated reports of seven hospitals in England. (For names of these hospitals see page 5. "Horsley's Alcohol and the Human Body.") The number of patients was about the same. In 1862, \$37,403 was spent for alcoholic liquid and only \$14,675 was spent for milk. In 1902 only \$13,186 was spent for alcoholic liquors and \$43,818 was spent for milk.

If alcoholic treatment is disastrous to adults, it is little short of criminal to administer it to children, either sick or well.

The adult system only has to provide for its repair and renewal of energy, while the child has added to this the building of its body out of itself.

The body is practically a mass of cells that are rapidly and constantly undergoing change. The growth of the child depends upon these changes, and these changes depend upon the child getting the proper amount of food, oxygen, rest, exercise and sunshine. Anything that retards the change of these cells, retards the development of the child. Alcohol retards this change, and otherwise injures the cells.

Dr. Horsley says, "Evidence is steadily accumulating which suggests that the stunted frames and weak development of many poor children is at any rate partly due both directly or indirectly to the action of alcohol. * * * It must be remembered that organs thus injured early in life probably never reach their proper development, and that in adult life, in consequence of such injury, the individual exhibits neither the full physique nor the normal longevity of his race. * * * During the years of childhood no part of the body alters more rapidly or has greater capacity for growth than the brain. It is obvious that a brain built of badly grown cells can never attain to that mental power which is essential to successful living."

Physicians give much less alcohol than formerly, and those who yet believe that it is sometimes useful, agree that it should only be given on a physician's prescription, the same as any dangerous drug is administered. The day of the family whisky bottle is past, as medicine. There is a constantly increasing number of physicians who do not prescribe alcohol under any circumstances, as medicine, because they consider it unreliable and that other substances serve their purpose better.

Many patients still demand alcoholic liquors as medicine. When the people in general better understand the character of alcohol, physicians will make more rapid progress against its use.

What does Dr. T. D. Crothers say of alcohol as a stimulant? How have these facts affected hospital practice? How much was spent for alcoholic liquors in Cook County Hospital in 1897? How much was spent in seven large hospitals in England for milk and alcoholic liquors? Upon what does the growth of a child depend? How much does alcohol affect these changes? What does Dr. Horsley say will be the result of early injury in adult life? What is said of physicians' prescriptions and the family whisky bottle? How can more progress be made?

X. The Effect of Alcohol on the Sex Life

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IN order clearly to understand the effect of alcohol upon the sex life we must know the great truths about alcohol and the great truths about the sex life.

I. The sex life is dominated by a compelling instinct that is as natural as eating and drinking. The laws and customs of modern civilization demand that the sex life must be under the control of reason, judgment and will.

II. Alcohol makes all natural instincts stronger, and weakens reason, judgment and will, through which control must act.

The sex instinct awakens at the time the youth begins to develop into the adult. The girl begins to develop into a woman at about thirteen; the boy begins to develop into a man at about fifteen.

When the sex instinct awakens in a boy he changes his opinion about girls. The boy of twelve ignores girls, he may even be rude and rough with them; but the boy of fifteen or sixteen begins to be courteous toward his girl friends and thoughtful of their comfort and safety. He is glad to do services for them to win approbation and favor. He is in his age of chivalry. He is like a young knight.

The natural young man thinks often of the time when he will marry and start to make a home. He thinks of his future wife as pure, unselfish and efficient.

When associating with his young lady friends his thoughts are usually noble and inspiring. If he sometimes has an impulse to fondle a girl friend or subject her to some familiarity, his Reason tells him that her person is sacred to her womanhood as his is to his manhood and that such familiarities are unworthy because they inflame passions that in the young man and young woman must always be kept under perfect control. If not kept under control, shame and disgrace follow.

Sometimes the young man may happen to meet lewd girls or women, or if he does not happen to meet such girls he hears about them and knows there are such. But his reason and judgment tell him that only disease, disgrace and humiliation can result from any association with such women. Further, that any association with such women would make him unworthy of the pure woman whom he hopes some day to marry.

Not only would he become unworthy of a pure woman, but he would be most likely to catch a terrible disease which might be caught by his wife and passed on to his children.

From the above statements it must be clear that all impulses to do unclean acts are unmanly and surely result in disease, dishonor, disgrace and degradation.

On the other hand, control of impulses leads to health, honor and happiness.

Alcohol and all of those drinks of which alcohol forms even a small part are harmful and dangerous to the sex life for four reasons: I. Alcohol inflames the passions, thus making the temptation to sex-sin unusually strong. II. Alcohol decreases the power of control, thus making the resisting of temptation especially difficult. III. Alcohol decreases the resistance of the body to disease, thus making the person who is under the influence of alcohol much more likely to catch disease. IV. Alcohol decreases the power of the body to recover from disease, thus making the results of disease more serious.

It is a well-known fact that young girls who are seduced and ruined are usually first brought under the influence of alcohol. Under this influence they lose the guide of reason and the help of will power, and fall victims to passion, to be disgraced and ruined.

The influence of alcohol upon the sex-life is altogether bad. It could

hardly be worse. Avoid all alcoholic drinks absolutely, lead a temperate life. Then control of the sex impulses will be easy and the sex-life will lead to joy in the home, where a happy wife will reign as queen and mother over a brood of healthy children.

What does Dr. Hall say of sex life? What does modern civilization demand? What effect does alcohol have on natural instincts and on reason and will power? At what age do sex instincts awaken? What is said of familiarity between young men and young women? What is apt to result from unclean acts? Give four reasons why alcohol leads to sex sin? What should be the rule of life regarding alcohol? What will be the results of control?

XI. Alcohol and Government

THE chief object of government is to protect the rights, health, happiness and prosperity of the people.

In our republican form of government, the people rule themselves by electing men to serve them as lawmakers or by initiating laws themselves. These laws are administered by officers elected by the voters. To secure progressive moral measures enacted into law, it is necessary to educate the voters to the need of such legislation, and who will therefore vote for such persons as will work to carry such reforms into effect.

Laws prohibiting or regulating the liquor traffic is "police legislation." Congress has no power, under the constitution, to enact police laws except as to territory under its exclusive control, like the District of Columbia, the Territories and dependencies. Congress can tax the manufacture or the sale of liquors and legislate as to the interstate traffic therein or as to exports and imports, but local regulation or prohibition of the traffic is solely within the police powers of the states.

This condition cannot be changed except by amending the Federal constitution. To amend the national constitution it is necessary to submit the proposed change to the state legislatures. If three-fourths of the state legislatures agree to the amendment, the change is made in the national constitution.

The lawmakers of our Congress and of the state legislatures have taken the position that the manufacture and sale of alcoholic liquors constitutes an "evil," or at least a dangerous traffic. To help overcome this evil, these governments tax or license and regulate the manufacture and sale of intoxicating liquor.

The brewer pays \$1.70 to the internal revenue collector of his district for every barrel of beer manufactured. He must also pay the government \$100 before he can sell his goods. The tax on imported beer is paid to the custom house officials.

Distillers pay \$1.10 on each gallon of alcohol made. Before a distiller can begin the manufacture of alcohol, his bond must be signed by two men who are rich enough to pay his tax to the United States government, should the distiller fail to do so. Should the bondsmen fail, the government may take possession of and sell the spirits in stock, the distillery and the ground upon which it is built, to satisfy its claim.

To protect its interest in the distillery, the government places its own officials in charge; store-keepers and gaugers. The store-keepers are always on duty, night and day. They weigh and measure all grain, watch the manufacture of the alcohol, and are responsible for its being properly barreled and stored, or it is bottled under their care, and sealed with a United States seal and labeled "Bottled in bond." The store-keeper also carries

the keys and the distiller cannot enter his own building unless the store-keeper is present.

The gaugers measure the alcohol manufactured, and report the number of gallons each day to the government.

This alcohol or spirits is then either "bottled in bond" or sold without change to a rectifier. He is the sleight-of-hand performer of the whole liquor business. From a barrel of spirits, by adding oils and essences, he makes bourbon and rye whiskies, brandies, rums, gins and cordials. In this process he uses sulphuric acid, prussic acid, fusel-oil, creosote and nitrobenzol. With these the purest brands of "French brandy" are made in the same cellar and from the same barrel.

For the privilege of preparing these "pure liquors" the rectifier pays the United States government \$200 per year.

It is now ready for the wholesale liquor dealer. He pays the United States government \$100 for selling distilled liquors and \$50 for malt liquors. The saloonkeepers must also pay the United States government twenty-five dollars per year before they can sell a single glass of liquor. In addition to this, they must pay the state tax, or license, the amount of which is fixed by the state legislatures.

In prohibition territory, when a man violates the state law, he must pay the same United States government tax as the licensed retail dealer.

King Malike, the Mohammedan Emir of Nupe, wrote this pathetic letter to Bishop Crowther in 1886. "It is not a long matter; it is about Barasa (rum or gin). Barasa! Barasa! Barasa! By God! It has ruined our country: it has ruined our people very much: it has made our people become mad. I have given the law that no one dares buy or sell it; and any one found selling it; his house is to be eaten up (plundered) and any one found drunk will be killed. I have told all the Christian traders that I agree to everything for trade except Barasa."

Our statesmen should listen to this appeal and also apply its logic to the citizens of their own government.

What is the chief object of government? Who makes the laws? What power has Congress? How much does the brewer pay to the government? How much does the distiller pay? If the bondsmen fail how does the government satisfy its claim? What are the duties of store keepers and gaugers? What is meant by "bottled in bond?" What does the rectifier pay the government, and how does he do his work? What does the wholesaler pay the government? What does the saloonkeeper pay and how is it divided? What did King Malike say? What should our government do?

XII. Effect of Alcohol on the Spiritual Life

IT was a wise provision of our Creator that provided a separate development of our threefold nature, the equal development of which is necessary for a symmetrically balanced character.

We watch with joy the physical progress of our children from birth, and soon after expect to see signs of mental growth. Through the first twelve years the greatest anxiety of the parents is to keep the physical and mental growth equal. If there is a slowness of development of either nature, the best authority is consulted for a remedy.

The natural time for the spiritual growth to begin is at the beginning of puberty. As the time approaches when it is possible to reproduce ourselves, our spiritual nature asserts itself that our threefold nature may be transmitted to our children. Thus from the ages of twelve to sixteen we are able to best impress spiritual truths upon the mind. It is at this time a

large percent of people accept Christ into their lives. This is as natural as the physical and mental growth, yet few express anxiety if the spiritual growth is delayed or shows weakness.

It is a serious matter for the nation as well as for the church that so large a part of our people seem unable to develop the spiritual sense. It is not mere chance that three-fourths of the church members are women. There is a scientific reason for this condition.

It is a well-known fact that the latest faculty produced by the evolution of the mind is the first to be impaired by the use of narcotic drugs. The spiritual sense is the last to be developed, it is the crowning glory of the mind to be able to know God, thus we find the highest attribute of life is the first to feel the deadening influence of alcohol.

Many children are born who have been robbed by alcohol-drinking, parents (one or both) of the fine brain qualities that make possible a spiritual comprehension. These children may be sent to Sunday school and receive Bible instruction from their mother, but little impression is made upon their minds. They are unable to comprehend God and their accountability to Him. It is impossible for them to either love, fear, or worship Him. The windows of their souls are darkened so the "Sun of righteousness" fails to shine into their hearts and lives.

There may be a slight awakening of the spiritual sense during the early years, but if an occasional spree, or even very moderate drinking, becomes the habit of such an individual, the latest developed brain cells—[those in which are the centers of our spiritual life, as truly as we find the brain centers which receive the sensations of sight, hearing or feeling], are paralyzed and not able to perform their work.

If taking alcohol in small quantities, such as beer drinking, becomes a habit, these cells become weakened and can be aroused only by a sudden grief or death-bed fear. If the drinking is heavy and of long duration, these finely constructed cells may be destroyed and we are able to understand why so many "hardened criminals" meet their fate so unflinchingly, and can comprehend from a scientific standpoint why "no drunkard shall inherit the Kingdom of Heaven."

Are parents concerned about the mental and physical development of their children? When is the natural time for the spiritual life to develop? Are parents concerned if the spiritual life of their children shows weak growth? Do some people seem to be unable to develop the spiritual sense? What is the great hindrance to spiritual growth? Does this partly explain why there are more women in the churches than men, and why there are more men than women in penal institutions? Is it easy for all children to accept Bible instruction? What is necessary to awaken such people? What is the first duty of all who are anxious to carry the gospel to "every living creature?"

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