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## MEAT NOT NECESSARY FOR BRAIN WORKERS



THE AMOUNT OF RUBBISH which finds its way into the newspapers under the head of advice about care of the health is simply astounding. Several correspondents have called the Editor's attention to a statement that is going the rounds of the newspapers which undertakes to explain, "Why the Brain Worker Can't Eat Too Much Meat." The article referred to claims that Doctor Rubner, a German scientist, asserts that "it is almost impossible for us who live in a temperate climate and pursue sedentary lives to consume too much meat." Nothing could be more absurd or more fallacious than this statement, which is, indeed, the very opposite of the truth.

THIS STATEMENT IS CHIEFLY BASED UPON THE OBSERVATION of what is technically termed by physiologists the "specific-dynamic" action of protein. This so-called specific-

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dynamic action of protein consists in the fact that protein excites cell activity, and to a degree much beyond its capacity for supporting cell action. That is, the fuel value of an ounce of protein when burned in the body is not sufficient to make good the loss of energy which the body sustains in consequence of the activity induced by the protein. This peculiar property of protein is by no means a modern discovery. That meat is a "heating" food has long been known. For centuries it has been the custom of physicians to forbid meat as an article of diet in cases of fever. Clinical observations made centuries ago by sagacious physicians showed that when meat was eaten by fever patients the temperature rose. A meat diet or diet rich in protein has the same effect upon a person who is in health, but the increase of heat is less obvious, for the reason that the body is able to maintain its normal temperature by increasing the activity of the skin, and so carries off the extra heat by evaporation.

**R**UBNER HAS SHOWN THAT A LIBERAL MEAT DIET INCREASES THE HEAT production of the body by about twenty-seven per cent. From this fact the writer of the newspaper article referred to arrives at the conclusion that meat must be a splendid food for brain workers who are generally obliged to sit still a greater part of the day. This writer is apparently laboring under the supposition that a sedentary person needs to adopt especial means to increase heat production for the reason that his life is inactive. Evidently it is only a question of clothing and fuel. Any person who is exposed to cold air and at the same time is not permitted to exercise his muscle, must, of course, wear more clothing in order to maintain the normal temperature of the body than a person who is muscularly active, since

the larger part of heat of the body is simply a by-product of muscular work. Hence, the less amount of muscular work done the less amount of heat produced, but the sedentary man who finds himself uncomfortable because of the diminished heat production resulting from inactivity has only to do one of two things, either to protect himself from loss of bodily heat by clothing himself more warmly or to maintain a higher temperature of the atmosphere about him by consumption of a little more fuel in the stove or furnace. There are three questions to be asked and answered:

- 1.** Is it more economical to maintain body temperature by the wearing of sufficient clothing, or to increase the production of heat by the burning of more body fuel? An extra suit of underclothing or an extra blanket sufficient to counteract the effect of a few degrees lower temperature might not require an expenditure of more than two dollars, and this extra clothing will stand the wear and tear of constant use for at least three months, making the cost of heat saving amounting to twenty-five per cent of the heat produced by the body during three months the insignificant sum of two dollars. The cost of the extra protein required to secure an equal amount of heat production; that is, to support an extra expenditure, say of twenty-five per cent of the total heat production, would cost at least fifty cents a day, amounting in three months to forty-five dollars, or more than twenty times the heat-saving clothing.
- 2.** Which would be the more economical, food fuel or furnace fuel in the form of wood or coal? A pound of coal contains not less than twelve thousand available heat units, costing no more than 1.5 mills per thousand heat units. An equivalent

amount of heat obtained from albumin would cost not less than \$1.50, or one thousand times as much. Evidently meat is a most expensive kind of fuel.

**3.** Is it wise to compel the body to do extra work as a heater when the same could be done so much more economically by stove or furnace? It is evident that the extra cell activity induced by protein diet, amounting, according to Rubner, to an increase of work to the extent of twenty-seven per cent must result in a premature wearing out of the body. This increased cell activity not only increases the amount of heat production, but also a proportionate increase in the production of waste poisonous matters, the contact of which with the tissues is highly detrimental. The accumulation of these waste substances induces the changes which is characteristic of old age. Or in other words, increased labor induced through the stimulation of a high-protein diet is a serious draft upon the vital resources of the body and must result in the wearing out of the body machine much more quickly than under the influence of a non-stimulating diet.

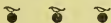
**B**UT LAYING ASIDE ALL OF THESE WEIGHTY CONSIDERATIONS, which show the absurdity of the suggestion that "a brain worker cannot eat too much meat," it must be remembered that there are sources of protein other than meat. Rubner has proved that the "heating" properties of protein are not peculiar to meat and are not due to extractives of meat, but to protein only, and are the same for vegetables as for animal protein. Pine and other nuts that are rich in protein—a pound of pine-nuts, for example, is fully fifty per cent more than a pound of meat. In addition to the protein it has a sixty per cent con-

tent of a most digestible fat. Even rice and potatoes contain sufficient protein to satisfy actual needs. It is evident then that brain workers can get the protein which they may require under any circumstances without the use of flesh foods.

**I**T MUST BE REMEMBERED, too, that persons whose employment is sedentary usually suffer from intestinal inactivity. The free use of meat by such persons produces most distressing results. Undigested fragments of the meat, delayed in the colon for hours, and often days, undergo putrefaction, and the toxins that are produced enter into the blood, bathe the tissues and set up a great variety of nervous symptoms and other disorders connected with a condition known as intestinal toxemia.

**A** MEAT DIET requires a very greatly increased activity of the kidneys, not only to dispose of the surplus nitrogen which is absorbed and excreted under the form of urea, but also to excrete the enormous quantities of intestinal toxins which are produced as the result of heart meat diet through the putrefaction of undigested remnants in the colon. Sedentary persons are always benefited by a low-protein dietary.

A high-protein dietary combined with sedentary life must exercise a peculiar pernicious influence upon the body. This effect is shown in the increasing army of neurasthenics whose miseries almost without exception may be traced to chronic intestinal toxemia a condition which to say the least is enormously exaggerated by a flesh dietary.



THE Toledo *Blade* has discovered one of the best reasons for the high cost of meat: "An Illinois bank advertises 'money to loan to farmers for feeding cattle.'"

A WRITER in *Recreation and Outdoor World*, writing of American holders of swimming records, says of Joseph Wheatley, an eighteen-year-old New York Athletic Club champion, "You would never guess nowadays that a few years ago he was a frail youngster, constantly suffering from some complaint or other; but such is the case. Fortunately, his physician was a believer in Nature's upbuilding powers and prescribed exercise and an outdoor life instead of medicine. Wheatley expressed fondness for the water, so he was told to swim, and swim he did. As a result you might now go far to find a more healthy, rugged specimen of young manhood."



## WHY WE BECOME TIRED

PROFESSOR WILLIAM H. WATERS, Professor of Pathology, Boston University Medical School, has recently made an admirable summary of the causes of fatigue, as follows: "I bend my arm once or twice or three times easily. A small amount of tissue is burned in the process and a correspondingly small amount of waste product—poison—is thrown upon the system to be carried off. The blood processes have no trouble in disposing of this waste. But I begin to bend my arms and keep doing so for an hour and the excess of tissue burned in this over-exertion—this poison—is felt over the whole body because of the inability of the natural processes to take care of this excess waste. The body is an engine whose fuel is the food we eat. The wastes from the body are the ashes. The more work we do the more food is required for consumption and the more ashes there are to be thrown off.

Fatigue is the result of excessive amounts of poisons turned into the system—the body is suddenly poisoned.”

Rest is, as Professor Waters says in this connection, an excellent way to alleviate fatigue, just as moderation in work is the best way to avoid over-fatigue. At the same time, moderation in work, even cessation from work entirely, will not solve the problems associated with fatigue, while it also has its economic objection. As the Editor of the *Milwaukee Evening Wisconsin*, who quotes Professor Water's statement, observes, “If everybody takes advantage of this warning, the United States will become an indolent nation. The number of Weary Willies will increase at an alarming rate.”

### Most People not Physically Fit

**I**T IS TRUE, as Professor Waters says, that if we continue to keep our bodies in a half-poisoned state continually, in time the whole system will become permanently affected; it is also true that “if we rest before the excess becomes too great, in the natural course of things the surplus poison is gradually carried away and the sense of fatigue disappears.” But fatigue is not to be fought by letting up on one's work, but by minimizing to the utmost the production of poisons within the system, and by preventing their accumulation in the system. For the body has four means of getting rid of its poisons: through the kidneys, the liver, the skin, and the lungs in the exhaled breath. When these various organs are behaving properly and work does not go beyond their power to eliminate the poisons as fast as they are formed, the body is bound, barring deformities or other unnatural conditions, to be in a healthy state. On this account there is positively no reason why the sedentary worker, taking

enough exercise to promote perspiration and deep breathing, should not keep as fit physically as the proverbial fiddle. The muscular worker takes in his daily labor the exercise that the sedentary man takes (let us hope) in the gymnasium, and should be in the very pink of condition.

**A**S A MATTER OF FACT, HOWEVER, most men and women of both class of workers are not fit physically. The reason for this is very often that by thoughtless habits of eating and drinking they produce in their bodies an amount of fatigue poisons far beyond the power of the eliminative organs to get rid of. The result is that the poisons, unable to leave the system, enter the blood circulation and go to all parts of the body, where they "lave" (a term often used by Mosso, the great Italian physiologist) the muscle and nerve cells and produce "fatigue," which in time becomes chronic.

### **Overeating a Common Cause of Fatigue**

**O**NE SHOULD PLAN A DIET, then, that will yield adequate energy with a minimum of poisons. The most common dietetic fault is overeating. One can do the hardest kind of muscular work on an increase of one-third above the amount required by the man who sits all day at a desk. This is a moderateness that is too little practised, however, to the detriment both of health and of the pocketbook. It is not uncommon, indeed, to find manual workers eating three or four times as much as sedentary people. Investigations made among Maine lumbermen, for instance, show that they consume eight thousand units a day, whereas three thousand calories are enough for the most strenuous kind of work, and two thou-



sand ample for the intellectual worker. That is to say, the Maine man is eating more than his body calls for by almost two-thirds.

**N**OW WHAT HAPPENS? The bad effects of overeating are overcome to some extent, it is true, in the case of lumbermen and others who work outdoors by the good influence of fresh air and active exercise. But the surplus food not needed by the body for the generation of heat and energy is changed into poisons that paralyze muscles and nerves and produce fatigue in quite the same manner as the poisons that arise in the generation of energy, as described above. This fact explains the languor and chronic tiredness of people who habitually overeat.

### How the Clinkers Clog the System

**T**OO MUCH PROTEIN IN THE FOOD also adds to the burden thrown upon the eliminative organs. In the intestinal canal there is always a certain amount of protein that has not been digested. This undigested protein decays very rapidly, and in the process of decay there is always given off "noxious poisons" (another term of Mosso's) that, as we have already described, get into the blood and go to every part of the body, paralyzing muscles and nerves, and adding their share to the flood of poisons that in the case of most people are slowly but surely crippling the kidneys and liver and rendering them incapable of eliminating the poisons that result from the normal processes of the body.

Dr. Edward Curtis has likened these "noxious poisons" to ashes in a grate: "The combustion of protein within the organism," he says, "yields a solid ash which must be raked down

by the liver and thrown out by the kidneys. The grate, then, is not properly raked; clinkers form, and slowly the smothered fire glows dull and dies"—and the chances are that the grate itself is rendered useless.

### Burning the Fats and Sugars

**P**ROFESSOR CHITTENDEN, of the Sheffield Scientific School, thus explains the importance of keeping down the protein element in our foods: "Fats and carbohydrates when oxidized in the body," he says, "are ultimately burned to simple gaseous products, viz., carbonic acid and water. Hence, these waste products are easily and quickly eliminated and cannot exercise much deleterious influence, even when formed in excess. To be sure, there is a waste of energy in digesting, absorbing, and oxidizing the fats and carbohydrates when they are found in excessive amounts. Once introduced into the alimentary canal they must be digested, otherwise they will clog the intestine or undergo fermentation, and so cause trouble. Further, when absorbed they must be transformed into fat and deposited in the various tissues and organs of the body; a process desirable up to a certain point, but undesirable when such accumulation renders the body gross and unwieldy. With protein foods, on the other hand, the story is quite different." These substances, he says, when burned in the body give off poisonous products, "which ultimately pass out of the body through the kidneys. Prior to their excretion, however, these products—frequently spoken of as toxins—float about through the body and may exercise more or less of a deleterious influence upon the system, or, being temporarily deposited, may exert some specific or local influence that calls for their speedy removal. Hence the

importance of restricting the production of these bodies to the minimal amount, owing to their possible physiological effect and the part they are liable to play in the causation of many diseased conditions."

**B**UT LET US PASS ON TO OTHER POISONS that help on the fatigue. Most injurious because most common are the poisons contained in tea, coffee, alcohol, tobacco, drugs, etc. No one who defends these substances claims for a moment that they do not contain poisons of the most virulent kind. The nausea and other symptoms which go with the first smoke are sufficient evidence of the harmfulness of tobacco. The nicotine plays havoc with the working of every organ, and paralyzes nerves and muscles. One doctor, for instance, has found eight cases of nervous deafness among his patients due to tobacco. And the effects upon the heart are not less disastrous. The eminent English physician, Sir Lauder-Brunton, says that the nicotine of tobacco "produces, first convulsions and then paralysis. When applied in small doses to the frog's heart it causes the beat at first to become slow and afterwards to become quick. If the dose be large, no primary showing may be observed. In mammals it causes a slowing of the heart, with enormous rise of blood-pressure."

### Alcohol Tiredness

**T**HEN THERE IS ALCOHOL IN ITS VARIOUS FORMS—the most ruinous of all substances taken into the human body, unless we except cocaine and similar drugs. It is ruinous to digestion; it destroys nerve control; it makes its victims susceptible to kidney and liver disorders, to arteriosclerosis, tuber-

culosis, diabetes, gout, and pneumonia, and destroys that vital resistance which is the body's chief defense against disease. Furthermore, as some one put it, the same man will do better work without than with alcohol; the same athlete will be stronger and more alert without it; the clerk or lawyer or teacher will win promotion earlier without than with alcohol; a man or woman will grow old quicker with than without alcohol. Other things being equal a man of fifty will have greater confidence in a total abstainer than in a man of identical capacity who uses alcohol moderately; a mother will give better vitality and better care to her children without than with alcohol; a policeman or fireman or stenographer is more apt to win promotion without than with it. Nor are these evil effects offset, as some of the advocates of alcohol would have us believe, by any food value whatever. This fact has been so amply shown by laboratory experiments that doctors are fast ceasing to prescribe its use.

### Not Forgetting the Patent Medicine

**I**N TRYING TO GET AWAY FROM ALCOHOL one should avoid it in its most dangerous form—patent medicines. There is “dope” for every symptom known to the sedentary worker—for headaches, for listlessness, for indigestion, for nervousness, etc.; they bear different names, and look and taste different, but most of them have alcohol as their chief ingredient, several brands containing as high as forty per cent of alcohol, those containing ten and fifteen per cent being legion. Those which do not contain alcohol contain harmful quantities of morphine, cocaine, and other drugs.

Proprietary medicines, indeed, are absolutely worthless.

They relieve headaches and other pains that affect the worker, but the relief is only temporary; they remove the sensation without at the same time removing the cause; the headache goes on just the same, but our nerves are benumbed and we do not sense it. They seem to relieve fatigue, too, but the real effect is to inject into the system virulent poisons that paralyze nerve and muscle tissue, cripple the liver, kidneys, and other organs, and work havoc with the digestion, until ultimately the drug habit becomes fixed and the victim ends in a sanatorium, or dies, a physical, moral, and mental wreck.

### Cutting Out the Caffein

**I**N REGULATING THE DIET the mental worker should go still further and cut out tea and coffee. Forel remarks that the human animal seems determined to assert his superiority over the rest of creation by the ingenuity he shows in discovering poisons for himself. Be that as it may, no man would feed to his domestic animals (and expect them to thrive) the deadly poisons which he himself takes in his tea and coffee.

**C**AFFEIN, THE ACTIVE PRINCIPLE OF TEA AND COFFEE, is a virulent poison, both chronic and acute. Under its influence one apparently is able to get through more work with less fatigue than he can do without them. The effects, however, are merely apparent; all the tea and coffee have done is to cover up the poisoning processes which accompany fatigue. The effect on the nerves is especially serious, tea in time producing wakefulness, nervousness, excitability, and unsteadiness and twitching of the muscles. Also, the digestive disorders, due to its tannic acid, are much more pronounced when tea is

freely used than are its stimulating effects. Flatulence, gastric distress, constipation, often irregularity of the heart action, and sleeplessness are the predominant symptoms of tea-drinking.

**T**HE EFFECTS OF COFFEE ARE SEEN IN EVERY OFFICE AND SHOP IN THE LAND. The typist with the dingy skin and lack-lustre eyes probably drank a cup or two of coffee for breakfast; the book-keeper who swallows an occasional headache tablet or acetanelid or other poison, derived his headache from coffee; as for the proprietor himself, he arrives at his desk, after a night of sleeplessness, with a well-developed grouch, due to heartburn, nervousness, irritability, and with a melancholia that can be traced directly to the strong coffee which he has become in the habit of taking. In most of these symptoms it is the nerves that are chiefly affected, and so we find that in the confirmed habitu   a genuine intoxication results; it is said in Paris, indeed, that coffee drunkards are considered hopeless, whereas those made by alcohol can be patched up.

**N**OW THERE IS SCARCELY A PERSON OF WORKING AGE who does not indulge in at least one of the poisons which we have named. And the worst of it all is that the use of every substance named is increasing rapidly. The importations of tea alone amount to more than one-hundred million pounds every year, with over nine hundred million pounds of coffee. Millions for substances that in most cases are taken to relieve or prevent fatigue, but that actually produce it, poisoning and paralyzing nerves and muscles, and sapping the very vitality upon which efficient work and thinking depend!

## Mind Hygiene

**B**UT FATIGUE CAUSES ARE NOT ALL PHYSICAL: mental conditions, and especially emotional states, play a big part. "Do not worry," Lincoln once said: "eat three square meals a day; say your prayers; think of your wife; be courteous to your creditors; keep your digestion good; steer clear of biliousness; exercise; go slow and easy. Maybe there are other things that your special case requires to make you happy, but, my friend, these, I reckon, will give you a good life." This advice could hardly be improved upon, particularly that with reference to worry, than which nothing is more destructive of poise, optimism and mental power. It is a state of mind found so frequently among hard working business and professional men that the impression has somehow become common that it is the work that produces irritability and fatigue, when it really is not work at all, but worry. As Professor Partridge has delightfully put it, more often it is the attitude toward work, "the emotional accompaniments of it, than the work itself, which causes breakdowns. If work is done only to finish it, and to get to the next stop; if there is feverish pursuit of an end, if work is done in disloyalty, or with lack of confidence in one's ability to do it or in its value; if it is done with eagerness to do too much at once, then work, like play done under the same conditions, may be the cause of strain." But work, says Professor Partridge, properly done, is normal to the core, even the hardest work, and the longest hours. It favors long life, and healthily old age.

**T**HERE IS ONE KIND of worry that is especially hard—"fear-thought." It usually takes the form of lack of confidence in one's abilities to do the work set before him; he faces the

future with distrust in his own powers. Failure almost always comes to a man who persists in this frame of mind, but not altogether for the reasons given—it is not merely that his capacity is kept at his estimate of himself, but that fear-thought has its effect upon the nerves, producing poisons that in time bring on chronic fatigue. The victim is always tired; he lacks the enthusiasm that is necessary to success, and in time he drops out of the race.

**T**HE POISON ORIGIN OF FATIGUE is seen in the nervous exhaustion which so often goes with headaches. For headaches are not, as it is usually thought, a certain, even a probable, sign of overwork, but are rather the result of the crippling effect of the uneliminated poisons which result from the body processes and the use of poison-containing food and drink. What every man should know is that the surest and quickest way to get rid of the headache and the nervous fatigue is to starve it out. By skipping a meal or two, even fasting for a day or two, one will find his body and mind becoming fresh again and the headache disappearing. This is, indeed, an almost certain remedy for headaches. The relief which it brings is so prompt as to seem the result almost of a miracle. It is easily explained, however, by the fact that the system has had a chance to work off the poisons which have flooded it; the muscle and nerve cells are free to perform their work unhampered by "noxious poisons," and one feels as fit as the proverbial fiddle and full of the desire to work—until bad eating gets the system poison-saturated again.

The same thing is seen in the fact that when one eats a hearty supper which the body has no use for whatever, one gets up in the morning feeling tired out and "all in." It is simply this:



the un-needed food has poured into the system a lot of poisons that run amuck in the tissues, and with the usual result—fatigue.

**E**YE WEAKNESS TELLS THE SAME STORY. The feeling of fatigue of the eyes after close application has been found to result from the accumulation of fatigue poisons in the ocular muscles. Mosso, making an extended study of fatigue in the Alps, where light is extraordinarily brilliant, showed that "when the sun is going down, to any one who is very tired it seems darker sooner than to another who is un-fatigued."

The production of eye difficulties is further identified with the production and accumulation of fatigue toxins and other poisons by the fact that the use of spectacles is confined almost wholly to those classes who are the victims of the modern indoor habit. Farmers and other workers who lead a natural outdoor life, their eliminative organs active, and their diet encouraging within the system the smallest possible amount of poisons—the victims of eye troubles are not found among these classes, but among people who lead a more or less artificial life in cities, the difficulty often beginning in the schoolroom.

### **Tiredness Involves the Entire Body**

**T**HUS IT WILL BE SEEN THAT THE QUESTION OF FATIGUE INVOLVES EVERY FUNCTION of the brain and body, every thought, every passion and emotion, the daily habits, and especially the habits of eating. Worry, we have found, manufactures fatigue poisons quite as harmful as those due to the production of muscular energy; while any food that tends to cripple the liver and lessen the effectiveness of its elimination, serves to retain in the system the fatigue poisons, and is thus dangerous as an abettor of chronic weariness.

**O**N THE OTHER HAND, over-fatigue is often responsible for the conditions named. Worry for one thing: when suddenly confronted with perplexity the injunction is given, "Oh, don't worry over it; dream over it first!" The sleep, if taken, removes the fatigue poisons and enables one to consider the situation without worry, whereas a question settled when the body or mind is weary is never settled right. Alcohol and drugs, on the other hand, are taken to relieve the effects of fatigue, while the pipe is enjoyed for the soothing effects which it affords at the close of a strenuous day's work. These, however, are but the second link in a long chain of evils that has no ending, for the poisons taken into the body to relieve fatigue, along with the poisons due to worry, contributes in turn to the production of fatigue, for which more drugs are taken, which, again, produce more fatigue, and thus *ad infinitum*, until the individual becomes a victim to the drug habit or breaks down from sheer nervous or nervous exhaustion.

**E**FFICIENCY IS THE WATCHWORD OF PRESENT-DAY LIFE. We must have efficient motor cars, efficient dynamos, efficient locomotives, and the business world is insisting more and more upon the necessity of efficient body machines. But we cannot have efficient body machines if they are constantly hampered by fatigue. We can drive a steam engine for weeks without stopping, but the human body must spend eight out of every twenty-four hours in recovering from fatigue effects, while during a large number of our working hours the energy flags and our work is poorly done. We cannot overcome the necessity for sleep, of course; and fatigue is bound to occur during the day's work; but by right habits of living we can lessen the number of hours' sleep required, at the same time making our work more spontaneous during the day. T. C. O'D.

A REMEDY FOR NARROWING VISION (from *Collier's*):  
"When life is strangling us, relief is to be had by trudging the road. Restlessness grows into calm when the shadows of the hills lie broodingly on the path of tired feet. A few days of gypsy wandering and largeness bathes us. Once again we rise strong in the morning for long hours of work, and return contented at evening after weariness.



### Getting Ready for Winter

**O**UTDOOR WINTER SLEEPING has always suffered at the hands of people who unreasonably stay indoors during the summer and with the coming of cold weather pull their bed either onto the porch or into a corner of the room between two open windows with a strong cross current. Just now is none too soon to begin inuring oneself to the outdoor habit. Twelve months ago a child of three months began taking its nap outdoors. Cold weather came and its mother brought it inside. It objected to indoor sleeping, however, and so was given an open porch, where it had its nap regularly on fair days and stormy, except when the rain blew on it. It was not long after frost and snow came before the cheeks of the once fragile child began to glow; its skin became clear, its eyes shone with the luster of health, and it became vigorous and resistant to conditions that to the ordinary child spell cold and sore throat, and often diphtheria.

**W**HAT IS GOOD FOR BABIES IS GOOD FOR ADULTS. It is folly to expect the system to be able to resist the shock of sleeping outdoors in zero weather without training. The situa-

tion is parallel to that of swimmers. Any day last winter one might have seen on a certain Chicago beach a group of women enjoying a dip in Lake Michigan. The cold bath was not a shock to the nervous system; the vitality of the swimmers was not lowered, and they did not suffer from the cold in any way. The bath was possible because they had begun in the summer and without skipping a day had carried their visit to the beach into and through the winter.

**A**ND BY THE WAY, TOO, NOW IS THE TIME TO BEGIN PREPARING FOR THE COLD SPRAY DURING THE WINTER. Even in summer the cold spray is not a pleasure to one unaccustomed to it, and what must it be if begun in winter? One may, however, begin taking his cold spray in the summer and by continuing it without missing a morning into the cold months, it will not be an ordeal to be dreaded, but a pleasure. One who does not know the pleasurable skin reaction that follows the cold spray, the feeling of exhilaration and bouyancy, the mental and physical stimulus that enables one to enter upon a day's work full of "pep" and with what musicians call "attack"—an animation that sustains one throughout the day—one, we say, who has not had this delightful experience will take our advice and begin at once to plan for his winter morning spray.



### Revising Our Open-Air Architecture

**S**INCE THE LOG-CABIN ERA of our pioneer ancestors, various styles of architecture have lent their influence to the production of American homes. Unfortunately for the health of the inmates, the general trend has been to make things as snug

as possible, to gather within the house walls so much that is comfortable, cheery and enjoyable, that staying indoors has grown to be a habit with most people.

When a few years ago people began to see the importance of open-air living, the house veranda, generally too narrow for any purpose other than to protect the entrance from rain and snow, began to widen into an outdoor living room, where for nearly half the year the fortunate owners may, if they choose, live out in the air and sunshine.

**Y**ET, THIS MEETS BUT A PORTION OF THE DEMAND. Fresh air and sunshine are as needful in winter as in summer. Yet few houses are so built as to provide adequately for either. The broad veranda, which promotes outdoor living in warm weather, very generally obstructs the entrance of sunlight to adjacent rooms, especially if the roof hangs low, so that in cold weather, when there is even the greater need for it, there is apt to be a dearth of sunlight in living rooms. Occasionally a wise householder has his veranda enclosed with glass, arranges for its heating, and makes it attractive with flowers and greenery and comfortable furnishings. Its many windows invite the sunshine, and even though the outlook be a wintry landscape, it gives a sense of nearness to nature which makes of a well ventilated, warmed and comfortable sun room, a fairly good substitute for the summer outdoor living room.

**W**INDOWS ARE FAR TOO FEW IN THE MAJORITY OF HOUSES. So much has been said and proved in regard to the importance of light for workmen that most modern manufacturing plants are well equipped with windows. The converse is true of the average dwelling, and of a majority of

school buildings, the nurture places of young life, the homes of mankind. Man is naturally an outdoor animal. If the human race is to improve itself there must be a new progression toward natural conditions.

**W**E NEED A NEW STYLE OF ARCHITECTURE favorable for outdoor living and for ample sunshine within; not an architecture that merely hangs a portico on the outside and tacks a sleeping porch on the building wherever there is an available angle irrespective of the prevailing winds or exposure to the element; not an addition of something, but a subtraction from the old plan, a doing away entirely with dark, shut-in quarters, and in their stead providing living places of light; rooms, it may be, with entire sides of casement, making possible by easy adjustment an open or closed apartment, and warm dressing rooms communicating with open air sleeping quarters dispensing entirely with the ordinary closed bedroom.

**T**HE FOOD LABORATORIES OF A HOME ought to be subject to as strenuous sanitary requirements as are public bakeries and provision shops, yet who does not know of scores of small, dark, sunless, even basement kitchens in which the food, purposed to nourish the household, is kept and cooked at a risk to the worker's health? Light, sunny quarters for all household occupations are requisites not to be overlooked if we are to achieve the best for the individual and the race.

This is the season when building operations are most active. Then let us be wise and make health the cornerstone of the new home, and plan for an all year-round basking in sunlight and breathing of fresh air.

MRS. E. E. KELLOGG.

IT IS A STRIKING FACT that of the most popular series of "beauty" articles ever published, that being contributed by Miss Lillian Russell to a group of influential newspapers throughout the country, probably two out of every three deal with the things that women eat and drink, and their relation to beauty of face and form. In a recent article Miss Russell summarizes as follows some of the reasons why alcoholic liquors produce ugliness: "Drink and you destroy your bodily vigor! Drink and your youth disappears! Drink and your mature figure droops into slovenliness! Drink and you enlarge and disease your liver! Drink and your brain becomes dull! Drink and you dim the luster of your eye! Drink and you kill that bright and animated expression?"



### Medicine Can Not Cure

**A** GREAT MANY PEOPLE LABOR UNDER THE DELUSION that there is some occult property in medicines which cures disease. Medicine may relieve pain and distress, but it cannot cure disease.

**D**ISEASE IS CURED BY THE BODY ITSELF. The body is a self-repair machine. When it is out of order, if it is cured (that is, repaired), it must cure (that is, repair) itself. It is impossible for any medicine or pills, electricity or massage or anything of that sort, to cure. We may help Nature if we work in harmony with her. We can find out what Nature is trying to do and then by working in accord with Nature we can assist a great deal, but we cannot cure. Curing is creating. It takes the very same power to heal a man that it did to make a

man in the first place. Healing and creating are both the same thing.

**W**HEN GOD MADE MAN fortunately He did not go off and leave him to himself. He stayed with him. A creative process is going on within the body all the time. Every second of our lives eight million blood-cells die and have to be removed by scavenger processes in the body. These millions of dead corpuscles are carried off and another eight million are created every second. Thus there is a growing procession, of living, newly created red blood-cells. It is only by creative process that this can be accomplished. We cannot give a man medicine that will make blood. Suppose we have some medicine that is said to make blood. Let us turn that medicine out on the table and watch the process. One says the thing is preposterous, but a medicine that can make blood in the body should be able to make blood on the table as well. It cannot do so. Blood is made by the body. It is made by the living structures within the red marrow of the bone. This was not understood a few years ago, but now we know the red marrow in the long bones and the flat bones of the body are the laboratories where the blood is made. It cannot be made anywhere else. It cannot be made in the stomach or intestines, neither can it be made by medicines. This is because there is a creative process in the body constantly going on. We say the red marrow makes blood, but the exact facts are that the same power that made the man, that made the red marrow, is doing the work. The creative power that is active in the body is in no wise different from the creative power away back somewhere that made the first man. It, too, is the Power that heals. Healing is creating.



IF A MAN LIVE LONG ENOUGH he will certainly reap the harvest of tea and coffee using, hasty eating and various sorts of abuses of the body. For "whatsoever a man soweth that shall he also reap" is a law of Nature which we cannot dodge.



### Lessons From the Pure Water Crusade

**A** STUDENT OF PSYCHOLOGY could spend a very entertaining hour in an analysis of the public's attitude toward its water supplies. The campaign against adulterated foods, and against products made under unhealthy conditions caught on from the start. Something about it appeals to the popular imagination, and the very mention of coal-tar dyes and artificial preservatives is enough to start a riot.

**A**S A RESULT OF THE ENTHUSIASM with which the people cooperated with the lawmakers and law enforcers, great good has been accomplished. This, of course, is as it should be, yet the sanitarian must regret that the reform has been so one-sided; that the subject of water has been left in comparative neglect. True, bottled mineral waters and the carbonated waters sold at soda fountains have been the subject of careful scrutiny; it is also true that the waters supplied by railways and other public carriers to their patrons are being regulated, while the public drinking cup is being rapidly banished from use. If the psychologist be not wholly free from cynicism, however, he will attribute the results obtained in these directions to the fact that in each instance they involve law enforcement, and that law enforcement has an element of the spectacular in it that appeals to the popular imagination—otherwise, why have so many laws?

**B**E THIS AS IT MAY, there must be vast reforms in the control of our public water supplies. A few years ago we labeled the common house fly the "typhoid fly," and with equal appropriateness most of the drinking water consumed in this country might be called "typhoid solution." If this statement seems radical, let us recall an estimate made a few years ago by an eminent hygienist, that annually no fewer than forty thousand deaths are caused by bad drinking water in this country. Very good examples of the relation of impure drinking water to typhoid mortality, for example, are shown by the following table, compiled by Dr. William T. Sedgwick and covering seven New England cities:

DEATHS PER 100,000 INHABITANTS (POPULATION FROM UNITED STATES CENSUS OF 1890)

	From Apr., 1888, to Mar., 1889	From Apr., 1889 to Mar., 1890	From Apr., 1890 to Mar., 1891	From Apr., 1891 to Mar., 1892	From Apr., 1892 to Mar., 1893	Average Apr., 1888, to Mar., 1893
Concord, N. H. ....	70.5	29.5	53.0	29.4	11.8	38.8
Manchester, N. H. ....	29.9	41.8	43.6	11.5	20.7	29.5
Nashua, N. H. ....	68.9	42.5	5.3	29.8	31.8	47.7
Lowell, Mass. ....	86.3	83.9	195.4	81.7	85.6	106.61
Lawrence, Mass. ....	125.2	118.1	187.0	91.6	114.1	127.2
Haverhill, Mass. ....	22.8	30.3	33.9	30.2	64.0	46.3
Newburyport, Mass. ....	14.4	28.8	57.6	28.8	50.4	36.0

**T**HE SIGNIFICANCE OF THIS TABLE is seen when we recall that the cities of Lowell and Lawrence during these years took their water directly from the Merrimac river without any purification whatever, while the other cities derived their water from comparatively, and in some instances remarkably, pure

supplies. An interesting fact developed in a typhoid epidemic in Lowell and Lawrence to the effect that these two cities "had suffered annually from two autumn increments of typhoid fever, instead of one as is customary in most places, and that the first was contemporaneous with that in other cities and towns of the State, while the second arrived considerably later. The latter was evidently due to the fact that the water supplies of the two cities had become infected as a result of the usual autumn increment of the disease in the cities and towns on the river above, so that the second increment was a crop of which the first was the seed."

**W**HAT HAPPENED IN THE GROUP OF CITIES NAMED ABOVE is taking place in every part of our country. Everywhere we find drinking water being taken from rivers under the popular delusion that running water purifies itself with extraordinary rapidity, whereas, as Professor Sedgwick says, "It is therefore not so true that 'running' water, as that quiet water, purifies itself. We may even go so far as to say that the first requirement for the natural establishment of purity in surface waters is quiescence. But quiescence in rivers is ordinarily impossible. Hence the establishment and conservation of purity in rapid rivers is today regarded as, by natural means, impossible; and no river, unless from an absolutely uninhabited watershed, is to be regarded as suitable for direct use as a public water supply."

**T**HIS IS NOT TO GIVE A CLEAN BILL OF HEALTH, however, to water supplies taken from lakes, for here the condition of the watershed offers serious problems of its own. One city of twenty-five thousand inhabitants until the past two months took its water from a lake covering perhaps an area of a

square mile. At one end of the lake were a large colony of cottages during the summer, with absolutely no regulation as to the condition of its water closets. At the same time the grocery stores, restaurants and bakeries of the city were being given white and blue certificates for the purity of their goods and the cleanliness under which they were made or exposed for sale. Quite recently efforts by interested political groups very nearly succeeded in preventing the opening up to the use of the city great wells of cold and absolutely pure water. Through these supplies with summer colonies on their shores, with their lack of sanitary regulation, it is not surprising that epidemics take toll of thousands of lives annually.

**P** RIVATE WELLS which furnish surface water are equally productive of typhoid and other diseases, particularly of diarrhea. There are no conditions under which surface water can be used with impunity, and the extra cost involved in sinking a well to the deeper-lying sources of water will be amply made up by the reduction in the amount of sickness during the summer months.

**A** ND IMPURE PUBLIC SUPPLIES have just as little excuse for being. Where they exist either by virtue of cheap politics, as in the case mentioned above, or of the indifference of the public, it is well to remember that the consumer is always at the mercy of public sentiment. When politicians see that people demand clean water just as earnestly and mean business just as they meant business when they got after the scalps of manufacturers of impure foods, the Tammany Hall of every community will give in. In almost no case need the source of supply be changed. Cities taking their water even from polluted

rivers can, by the installation of adequate purification systems, have water as pure and limpid as that which flows in the mountain brooks.

**T**HE PROBLEM IS OF SPECIAL IMPORTANCE AT THIS TIME of the year, inasmuch as diarrhea and typhoid are rife. To make certain that the water one is using is free from diseased germs, however, one should turn her kitchen into a sterilization plant and boil all the drinking water used. The water should be brought to a boil and boiled for five minutes and then allowed to cool in a clean place. The objection that boiled water is insipid and has a "lifeless" taste is overcome by aerating, which consists of pouring the water from one dish to another, holding the dishes several inches apart. To avoid further contamination, however, one should be careful that the process is carried out in a room free from dirt and bacteria-containing dust.



### Sweets for Children

**I**T IS A GENERALLY ACCEPTED IDEA that children should be liberally supplied with sweets. This indeed is needful; the appetite for sweets is entirely a natural one.

**O**NE SHOULD BE VERY CAREFUL in their selection. The most proper form of sweets for children are sweet fruits. Pears and peaches, oranges and sweet fruits of all kinds are entirely wholesome sweets. Watermelon is particularly good, if the child is not allowed to swallow the pulp. Watermelon is nothing more nor less than cellulose, water and sugar. Only the

water and the sugar should be eaten; the cellulose should be rejected. If this is done, no harm can come from eating water-melon. Many people suffer from colic after eating water-melon because of the large amount of cellulose swallowed into the stomach, more than it can well rid itself of. This, if retained, sours, dams up the intestine and the stomach and produces bloating, the formation of gas occasioning much discomfort. So, while many people do swallow the pulp without any apparent harm, it is better not to do it, especially for children.

**A**NOTHER DELIGHTFUL SWEET FOR CHILDREN is the sweetness of dried bread. There is nothing sweeter than a piece of dry bread, zwieback being particularly sweet. Bread is made mostly of starch, and when it is chewed in the mouth the saliva converts the starch into maltose. All the starch in oatmeal, wheat, rice, and other grains is converted into sugar in the process of digestion, so it is evident children can get plenty of sugar in the form of starchy foodstuffs. A potato is almost all sugar; that is, sugar in the form of starch. Maltose is another sugar that is very harmless for children, as is also malt sugar. These are simply starch that has been converted into sugar by the diastase of malt. Children can eat this kind of sugar with perfect freedom. Cane sugar, however, is not a proper food, because it is an irritating food; it is not natural to the human body. It is found in grasses, in corn, in roots, in things which are the natural food of herbivorous animals, but it is not found to any extent in fruits and cereals and the natural foods of man. That which we use as cane sugar is the result of a chemical process. Cane sugar is found in the sap of trees, but we do not naturally live on twigs or leaves as herbivorous animals do. It is found in the sap of the cherry tree. At the

time when the green cherry is ripening it is in the stem and just as it enters the cherry, it is converted into fruit sugar, a natural sugar found in all kinds of fruit. This natural sugar is ready to be immediately absorbed and utilized in the body.

**A**N EMINENT ITALIAN PHYSICIAN who made some experiments upon dogs, found that a five per cent solution of cane sugar caused the stomach to be greatly irritated, while a ten per cent solution produced such intense congestion and made the dogs so miserable that he gave up the experiment. Think, then, what must be the condition of the stomach of a child allowed to eat freely of candy, which is certainly as much as a ten per cent solution of cane sugar. The candy habit is a pernicious one and is doing much to ruin the health and teeth of American children.

**A**NOTHER POINT OFTEN OVERLOOKED is that natural sugar has associated with it the lime that is necessary to build up the bones, whereas cane sugar gives us merely the carbohydrates without the lime. Lacking this element the teeth are consequently being torn down to furnish necessary lime for the nervous system, until decayed teeth are now-a-days more frequently the rule than the exception, with the majority of children.



DIVINE sobriety, pleasing to God, the friend of Nature, the daughter of reason, the sister of virtue; modest, agreeable, contented with little, orderly and refined in all her operations! From her, as from a root, spring life, health, cheerfulness, industry, studiousness, and all those actions which are worthy of a true and noble soul.—*Cornaro*.

AN EMINENT FRENCH PSYCHOPATHOLOGIST has recently set forth the extent to which alcohol has permeated French life—and we quote his remarks because they picture to no small extent the situation as it exists in every modern civilized nation. “Greed of wealth, demoralization, political indifference, and the weakening of the social conscience have today allowed alcoholism to spread terribly. This is why the number of the alcoholic insane has grown so fearfully. Society is full of persons soaked to the very marrow with alcohol, either pure or adulterated. Alcohol intermingles with the public and private life of most persons. Such habits cause derangements which alarm those of the clearest vision. There seems no more hopeful cure than the voluntary giving up of this brain poison. There is no means of general safety of greater value than the entire prohibition of the liquor traffic. United efforts are justly directed against such poisons as lead and phosphorus, substances far less dangerous, with a view to their prohibition. With far more reason should similar efforts be put forth against alcohol. To refrain from doing this would be a distinct sign that we mean to bow before the modern deity, Mammon.”



### About Veronal

ONE OF OUR READERS HAS ASKED whether a five-grain tablet of veronal is injurious. To which we reply that every grain of this drug ever given did harm. This is not denying that in extreme cases enough good has not been accomplished to justify the use of the drug, but the fact remains that there are scores of thousands of people in this country who are suffering from neurasthenia, the direct result of the use of sleep-producing substances.



**I**T IS A GRAVE ERROR to suppose that one can take a drug of any kind and be put to sleep under its influence without being injured by it. Indeed, there is no such thing as a harmless sleep-causing drug, and putting a man to sleep with bromid of potash, opium or veronal is like putting him to sleep by means of a blow with a club. Veronal might, indeed, be called a "padded" club. One can bring about sleep with a blow with a lead pipe, or with an opiate; the results are the same in either case, and the effects on the system are equally injurious.

**A**S FOR VERONAL, it is a poison, and the sleep which it produces is not normal. We call sleep "Nature's sweet restorer," but drug-produced sleep is not in any sense a restorer, in time, on the contrary, crippling them. For twenty years the writer has not prescribed an opiate for insomnia. During this time we have prescribed treatment for many people suffering from neurasthenia, with sleeplessness almost a constant factor. But we have found that insomnia can always be brought about without the use of drugs.



### How Baseball Games Are Won

**T**HE "CLASS" which the St. Louis American League baseball team is showing is the cause of no little marvel among those who follow the "national pastime." Most people are wondering how it is being done, but to those who know the methods of the present manager, Branch Rickey, there is little mystery in the matter. In a newspaper interview the other day, Manager Rickey said of his work, "Most people have

the idea that I have a rule-ridden club. There are no rules on my club that apply to every man in the same way. I gave them the dope straight about cigarettes. No cigarette fiend can do good work for any length of time. I showed them that it would detract from their earning power. I said I supposed that all of them wanted to make as much money as possible. I said that I did, and that we would all go up together if they left cigarettes alone. Of more serious excesses I spoke more strongly. A man with his mind on looser things cannot succeed in his work. So far as booze goes, I did not have to say much. All ball players of today know what that does for a fellow, and they all know no club will keep a drunkard or even a man who is helpless before alcohol. I merely said that I supposed all of them knew that booze was dead in this club the same as in others. Aside from the standpoint of right and wrong, all vices hurt their health and curtailed their earning powers, and for that reason are tabooed here."

**T**HERE IS NO SECRET IN THE SUCCESS that attends these methods, any more than there is secret in the success of business men who for the sake of getting on cut out all poison-forming habits and conserve their energy to the last possible ounce.



### A Worthy Example

**T**HE CHICAGO *Herald* has set an example for the newspaper world that is most worthy of imitation. This able newspaper has recently developed an advertising conscience. The usual newspaper policy in relation to advertising is to accept any copy that is accompanied by the required amount of cash. The

editors have sought to soothe their conscience by disclaiming all responsibility for the matter published in their advertising columns.

**W**ITHIN THE LAST TWENTY-FIVE YEARS there has been slowly developing in the publishing world a better sentiment. For a long time one or two magazines published at the head of their advertising departments a statement to the effect that they were ready to vouch for the truth of every statement made by their advertisers, even going so far as to offer to make good in dollars and cents any loss that any person might incur through misleading statements made in their advertising columns. In recent years a still broader movement has developed, as a result of which medical advertisements of all kind have been excluded from all respectable magazines. Strange to say, a very considerable number of so-called religious periodicals have excluded themselves from this list of high-class publications by continuing the publication of patent medicine and other pernicious medical advertisements.

**T**HE CHICAGO *Herald*, in eliminating from its columns liquor advertisements of every description, gave the following reasons for this most commendable action:

“**T**HE *Herald* goes into many thousands of homes. In virtually all of these homes there is an abiding sense of the need of protection against the abuses of the liquor traffic, especially for the young. In a constantly increasing degree there is abstention from the use of liquor for the sake of the young. There is the haunting fear that from the first indulgence the young and unformed character may unconsciously drift into an uncontrolled and destructive habit of excess.”

**T**HE THING NECESSARY ABOVE ALL OTHERS for the advancement of the temperance cause is the creation of a public sentiment against the entire liquor traffic. The newspapers are the most powerful of all means of molding public opinion. If every newspaper in the land would take the stand which the *Herald* has so courageously taken, the result would undoubtedly be the rapid development of an over-whelming sentiment against the liquor habit and the traffic in alcoholic beverages. It is to be hoped that the example of the *Herald* will be followed by other influential journals.



ALAS, for man's savage inhumanity! It is a terrible thing to see the table of rich men decked out by those layers out of corpses—the butchers and cooks.—*Plutarch*.



### How Much Gastric Acid the Stomach Makes

**P**ROBABLY FEW PEOPLE HAVE ANY IDEA of the enormous quantity of acid which is required to do the work of digesting our daily food. According to the best authorities the stomach produces every day from one dram and a quarter to five drams, or more than half an ounce of pure hydrochloric acid. This does service not only to digest the food in connection with the trypsin but also performs many other useful purposes. It stimulates gastric glands to make pepsin. It activates the pepsin which is inactive when first secreted. It controls the opening and closing of the pylorus. It excites the flow of pancreatic juice

and bile. It activates intestinal fluids and with all the rest acts as a powerful disinfectant destroying obnoxious germs thus keeping the stomach in a wholesome state.

**A** PERSON IN WHOM THE STOMACH CEASES TO MAKE HYDROCHLORIC ACID, a condition known as achylia, is exposed to the invasion of harmful bacteria of many sorts. These persons are also liable to the development of cancer of the stomach and adjacent organs.



### Tobacco and Physical Efficiency

**T**HE EDITOR of the *Medical Times* recently prepared a symposium on the subject of tobacco and its effects on boys and young men, to which contributed four athletes, men whose names are known to every youth who is at all familiar with American athletics. "Eddie" Collins, the famous second baseman of the Philadelphia American baseball team, one of the most remarkable ball players in the history of the game and a splendid example of physical and mental fitness, opens the discussion with the following paragraph:

**"I** DO NOT FEEL THAT I AM IN A POSITION TO JUDGE as to the merits or demerits of the use of tobacco, as I have never used it in any form. Throughout my course at Columbia University, where I engaged in athletics, and in my career as a professional baseball player, I have found it incumbent upon me to be in prime physical condition at all times. I did not take up smoking as a boy, and as I have no desire for it, I have carefully refrained from the use of tobacco as a man, in the

belief that I should conserve my powers to the fullest extent. "Smoking may or may not be harmful to young men, but why should a boy take a chance on something which might have a deteriorating influence, when he can get along as well without taking that chance. In these days of active competition, it is necessary for a man to put forth his best efforts if he is to attain success, and he should do nothing which will detract from his natural and physical abilities in that direction."

**P**ROFESSOR WILLIAM G. ANDERSON, Director of the Yale University Gymnasium, says that "it is the concensus of opinion among most athletes that smoking is detrimental, and the majority of men training for teams do not use tobacco. And, finally, the 'academic standing' of the smoker is lower than of the non-smoker."

**P**ROFESSOR G. L. MEYLAN, Medical Director of Columbia University, says that after twenty-four years experience in teaching hygiene and physical education, he is convinced that tobacco is injurious to growing youths. "The effects which may be attributed at least in part to the use of tobacco by adolescents are," he says, "rapid and irregular pulse (100-120); poor circulation, manifested by pallor of skin and cold extremities; poor 'wind' and lack of endurance; nervousness and irritability. These abnormal conditions are most marked in youths who are of a nervous temperament, lead an unhygienic life, and use much tobacco. Some cases have come under my observation where the excessive use of tobacco was undoubtedly the chief cause in producing unfavorable symptoms. This was proved by the rapid and marked improvement which took place when the use of tobacco was discontinued.

One case, a boy eighteen years old, smoked twenty-five to thirty cigarettes a day; his pulse was 128 and irregular; he was a candidate for pitcher on the baseball nine, but found that nervousness, irritability, and lack of endurance interfered seriously with his efforts to win a place on the team. After three weeks of total abstinence from tobacco, his pulse was ninety and regular, he improved rapidly in steadiness, control and endurance, and won the coveted place on the team. Many similar cases could be cited to show that tobacco is injurious to growing youths and to prove the contention that no efforts should be spared to influence boys and young men to abstain from its use."

**P**ROFESSOR HARRY L. HILLMAN, Director of Athletics in Dartmouth College, makes the statement that there is no doubt that smoking is injurious to boys and young men, and, "athletic sports are the best means of finding this out. An athlete who uses tobacco is very apt to injure his heart and usually the blame is labeled 'athletics.'

**"A** TOBACCO USER LACKS ENERGY, his training is hard work rather than a pleasure, his digestion is not what it should be, he is unreliable in competition or in a pinch, he cannot recuperate rapidly after a hard struggle and he does not repair as readily as one who does not use tobacco. Invariably a smoker thinks he can run a 100-yard dash, a mile run or any other distance and do as well as a non-smoker. He will perhaps for a number of times, but the double strain of the use of tobacco and strenuous exercise is likely to permanently injure the heart action."

**M**ICHAEL J. DONOVAN, one of the best known athletes America has ever produced, and for thirty years Athletic Director of the New York Athletic Club, considers a man "very much better off physically if he does not smoke. It goes without saying that a boy or young man, who has not attained his full growth, should never consider smoking. I cannot give better advice to anyone than I do to my own son, to whom I have already said, 'Don't smoke and don't drink and your battle is half won.'"

**W**ITH REGARD TO BUSINESS MEN, one reason, says Mr. Donovan, why they are "so often in bad physical form is that they smoke to excess. If a boy or young man expects to amount to anything in athletics, he must let smoking and all kinds of liquor alone. They are rank poison to his athletic ambitions."



### Not in Vain, Anyhow

**"THE FARCE OF 1906"**—the late Federal pure food law might well be called. On the face of it the law of 1906 guaranteed much, but in reality it guaranteed nothing; it promised much in the way of protection to the consumer, but gave no protection whatever. When, therefore, on February 24th of the present year the Supreme Court of the United States declared the measure unconstitutional, a genuine service was probably done the consuming public. To most people the statement on a label that a product was guaranteed under the Pure Food Law was conclusive evidence that the American government stood back of the product and guaranteed its purity and freedom from injurious substances. Thousands of tons of



inferior food products have undoubtedly been accepted by the consumer under the belief that the pure food label meant pure food, when, as a matter of fact, it assured the consumer nothing more than this, that the label told the truth with respect to naming the substances which entered into the manufacture of the product. Nothing, however, was said about the poisonous of these substances. And often, too, unscrupulous manufacturers designed and worded labels in such a way as to make it next to impossible for the purchaser to tell what the package really contained.

**N**OTWITHSTANDING THIS, HOWEVER, THE LAW OF 1906 PERFORMED ONE GREAT SERVICE that justifies its appearance on the statute books: it developed a pure-food consciousness on the part of thousands of American manufacturers, and opened the eyes of the consumers to the need of greater care in the selection of foods, while also it improved conditions under which manufacturing was done. And even if a federal law were never again enacted, conditions could by no means become as bad as those that existed before 1906. But there will be a new law—one that not only is constitutional, but one that effectually protects the consumer—and, too, that will benefit the honest manufacturer by inspiring the confidence of the public in his products.



“MODEL MAN LIVES EIGHTY-TWO YEARS” was the heading given a recent newspaper dispatch announcing the death of a citizen of Sedalia, Missouri, at the age of eighty-two years, who had never sworn an oath in his life, never tasted intoxicating liquor, never chewed or smoked tobacco, and was never sick until three days before his death.

# New Medical Discoveries

## of Interest to Lay Readers

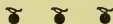
### The Blood-Cells in Exophthalmic Goiter

**D**OCTOR KOCHER, the greatest of all living surgeons, and the world's greatest authority on goiter, reports that in exophthalmic goiter the number of white blood-cells are diminished. The diminution relates particularly to a certain form known as neutrophiles, while another form known as lymphocytes is increased. Kocher does not operate upon any patient unless he finds this sign present.



### Picric Acid for Skin Lesions

**J.** A. COLLIVER writes in the *California State Journal of Medicine* that he applies a water solution of picric acid in various forms of skin diseases with great benefit, especially in acute and chronic eczema, erysipelas, ringworm, psoriasis, as well as burns. In mild cases the solution is painted over the diseased surface several times a day and allowed to dry. In more severe cases gauze dressing wet with solution are applied to affected parts.



### Simple Treatment for Boils

**B**ERGER, an eminent French physician, treats boils with a combination of tincture of iodine and ichthyol. The skin over and around the boil is painted with tincture of iodine; then

the boil is covered with gauze saturated with ten per cent ichthyol in petrolatum or paraffin oil. The pad is removed twice a day, parts cleansed with benzine, then painted again with tincture of iodine and pad renewed.



### A New Method of Purifying the Blood

**N**EWSPAPERS TEEM WITH ADVERTISEMENTS OF BLOOD PURIFIERS that are recommended as of special use in the spring time as a means of clearing out the impurities which are supposed to have accumulated during the winter months. Lord Bacon advocated as a means of blood purification a copious blood letting every spring. His idea was that by letting out several pints of blood once a year one would rid himself of his polluted blood by compelling the body to manufacture a new supply and thus renew the purity of the vital fluid and insure himself against disease.

**N**EITHER OF THE ABOVE METHODS of blood purification have borne the test of experience. So-called blood purifying medicines are absolutely worthless. Blood is not purified by putting something into it but rather by getting something out of it. Lord Bacon's method was long ago abandoned as brutal and dangerous.

**D**OCTOR ABEL, OF JOHNS HOPKINS UNIVERSITY, and his associates have recently devised a method by which the blood may actually be washed and thus relieved of its impurities. The method consists in opening an artery and passing the blood through a tube into a peculiar sort of filter, in passing

through which the blood's impurities are removed, the blood returning to the body through a vein that has been opened for the purpose. The method has been successfully employed upon various animals, especially large dogs. The success of the method depends upon making the blood incapable of coagulation by administering before the beginning of the experiment a proper dose of hirudin, a substance which is obtained from leeches.

**D**OCTOR ABEL BELIEVES THAT THIS METHOD MAY BE DEVELOPED into an important therapeutic agent, and that by its means poisons may be removed from the blood more effectively than by any method heretofore known.



### Low Protein Diet in Psoriasis

**I**T IS WELL KNOWN TO SKIN SPECIALISTS that psoriasis is one of the most obstinate forms of skin disease. Schamberg, Kolmer and others report (*Journal of Cutaneous Diseases*, October and November, 1913) experiments in the treatment of psoriasis and other skin diseases by means of a low-protein diet, from which we quote as follows:

**"A** LOW-PROTEIN DIET HAS A MOST FAVORABLE INFLUENCE upon the eruption of psoriasis, particularly when the latter is extensive. There can be no doubt that severe cases of psoriasis improve under such a diet, almost to the point of disappearance of the eruption. Conversely, a high diet exhibits an unfavorable influence on psoriasis, commonly causing an extension of the eruption. Whether a high

nitrogen diet can stimulate an outbreak of psoriasis in a psoriatic subject who is at the time free of the eruption has not yet been determined.

**T**HE GREAT PROLIFERATION AND EXFOLIATION OF CELLS by the skin in psoriasis demand a large supply of protein, which can only be procured from the lymph- and blood-streams. This protein supply may be derived from the ingested food, and a possibility exists that the great demand of the diseased skin for protein may also be satisfied by the protein reserve in muscle tissue, which thus may become depleted and later require restoration. This would explain the ready and persistent retention of nitrogen in these cases. A protracted, low-protein diet may diminish the proliferative activity of the skin by diminishing the supply of the principal building material, namely, protein. On the other hand, a high-protein diet may stimulate the proliferative activity of the cells by furnishing an abundant supply of the necessary protein."



### Too Much Surgery in the Treatment of Exophthalmic Goiter

**I**T IS NOT UNCOMMON NOWADAYS to hear the charge that too many patients are subjected to surgical operation. There can be no doubt that this is true in a number of morbid conditions, especially diseases affecting the organs of the abdominal cavity.

**T**HE LATE DOCTOR MOSSER maintained that cases of exophthalmic goiter are too frequently submitted to surgical operation. He urges that hydrotherapy, rest, and diet be

thoroughly tried in every case before resorting to surgery and in his experience a large proportion of cases were curable by non-surgical means.

The experience of the writer in connection with the Battle Creek Sanitarium in dealing with the cases of this sort is entirely in harmony with that of Doctor Mosser.



### What to Eat and How to Eat It

**T**HE POSTAL LIFE INSURANCE COMPANY (in the latest number of its quarterly, *The Postman*) under the head of "Dietetic Guide Posts" tells the whole story of what and how to do with one's food in a most admirable summary as follows:

Chew and taste your food thoroughly.

Have regular hours for meals, but if not hungry, eat little.

If you chew and taste your food properly, an excess is not likely to be taken. Eat some bulky foods of low caloric value such as tomatoes, lettuce, carrots, parsnips, turnips, celery, oyster-plant, salsify. They prevent constipation and over-feeding.

Limit your repair-foods.

Increase your energy-foods with increase of muscular work and activity.

Mental activity does not require increased food-consumption. There is no known heat- or energy-equivalent for mental work.

Exclude business, worry and bad humor at meal time.

Rest before and after eating.

Do not drink water when food is in the mouth.

Eat some fresh fruit and raw food every day.

Use salt sparingly.

Use "hot" condiments sparingly.

Be cautious with sea-food, especially if raw, or of doubtful freshness; take no chances of typhoid or food-poisoning.

After eating, brush the teeth and rinse the mouth thoroughly with a weak salt-and-soda solution.

Eat fresh fruit at end of meal to preserve teeth.



### The Handicap of the Cigar

**S**CIENTIFIC MEN ARE BEGINNING TO SUBJECT TO THE TEST OF CRITICAL INVESTIGATION some of the so-called harmless indulgences which are in vogue throughout the whole civilized world and so practised by millions without the slightest suspicion of any possibility of injury.

**A** RECENT NUMBER of the *Journal of the American Medical Association* (March 28, 1914) publishes the results of a careful investigation made by Doctor Bush, in which various tests by the aid of the instruments of precision employed in the psychologic laboratory were applied to fifteen men, for the purpose of ascertaining the effect of tobacco on mental efficiency.

**W**E QUOTE: "The test showed that tobacco smoking produces a 10.5 per cent decrease in mental efficiency. The greatest actual loss was in the fields of imagery, perception and association. The greatest loss, in these experiments, occurred with cigarettes. Nicotine was found in the distillates of all tobaccos tested. Nicotine was not found in the smoke of any tobacco, except that of cigarettes, and then only in traces. Pyridine was found in the smoke of all tobaccos tested. Pyridine seemed to be the principal toxic factor in the smoke."

### A Narrow Escape

**T**HE PURE FOOD INSPECTORS OF SAN FRANCISCO the other day put in an appearance just in time to capture one hundred and twenty-six tons of canned soup and pork and beans which were unfit for food, but which would have soon found their way to the stomachs of thousands of unsuspecting people, to their serious detriment. The soup and beans were fed to the fishes of San Francisco Bay. The fishes did not mind the filthy ptomaines which this rotten food contained, but it is quite possible that some of them later found their way to the stomachs of San Franciscans, who thus took their damaged pork and beans at second-hand.



### Meat—To Eat or Not to Eat

**T**HE JUNE NUMBER of the *American Review of Reviews* devotes nearly two pages to a review in *Het Hollandsche Revue* of a book by Dr. Felix Ortt on "The Dearness of Meat." In discussing the subject of the amount of protein necessary to support the activities of the average person, Doctor Ortt, quoting from Doctor Rubner and others, shows that assuming 150 grams of meat (about an ounce and a half) to be the meat consumption per diem needed by the average normal person, and reckoning that the meat contains twenty per cent albumin and five per cent fat, this gives us thirty grams of protein and  $7\frac{1}{2}$  grams of fat in the meat consumed.

**D**OCTOR ORTT CONTINUES: "This corresponds, as concerns the albumin, to about one-third of the optimum. . . . Rubner's researches show that for the cell-building re-



quirements of the body, thirty grams of the albumin in meat correspond to thirty-four of that in milk, thirty-seven of that in rice, sixty-two of that in peas, and ninety-eight of that in flour. These qualities of albumin are found respectively in one liter of milk, 470 grams of rice, 270 grams of peas, and 790 grams of wheat. Thus 470 grams of rice will furnish the body just as much albumin for its needs as 150 grams (1½ oz.) of meat. But 470 grams of rice contains, besides the albumin, four grams of fat and 360 grams of carbohydrates, while the meat contains 7½ grams of fat, but no carbohydrates.

“THESE FIGURES FURNISH ACCURATE DATA from which can be estimated the cost per day of balanced rations containing the right proportions of albumin, fats, and carbohydrates, but composed of varying constituents. By long and careful computations, based on these figures and on current prices of various foodstuffs, including meats, fish, milk, grain, roots (such as turnips, beets, etc.), cabbage and other green vegetables, it is shown clearly that a satisfactory balanced ration, meeting all the body's needs, is much more cheaply obtained when the required fat and albumin are obtained from vegetable courses instead of from meats.”

DOCTOR ORTT QUOTES STILL FURTHER FROM DOCTOR RUBNER and others to support his contention that a satisfactory and wholesome diet can be selected without resorting to meat, says the *Review of Reviews*: “Doctor Rubner declares that such a dietary, containing milk, but with no meat, or with a scanty proportion of meat, can be made entirely acceptable for children, adults, and the aged, and for laboring men and non-laboring men. He declares that much of the demand for

meat is mere custom, or even aping of one's neighbors. The Dutch authorities, Doctor Mijnhiff, Doctor Pijnappel, and Doctor de Groot, express similar views. So does the famous Danish food-physiologist, Doctor Hindhede, whose experiments proved that perfect health can be maintained for months on a diet restricted to potatoes and fat, and that "the potato, by reason of its large content of food-salts, exercises a very favorable influence on gouty and rheumatic conditions, . . . while the excessive use of meat is favorable to the development of these and similar diseases (*i. e.*, diseases which have as a common cause too great acidity of the blood.")



### The Welfare of the Teacher

**T**HE APPEARANCE ON THE BOOK MARKET of several new volumes having to do with rural school conditions recalls the fact that all of the present-day agitation in behalf of school hygiene takes into account the health of the child, but the welfare of the teacher practically not at all. The reforms in hygiene of the school-room are equally valuable whether they are secured in one way or another. It might serve to add stimulus to the movement, however, if we persistently pointed out that, as Professors Betts and Hall have shown, "the teacher whose entire personality radiates health and physical well-being has a great advantage over the teacher suffering from ill-health or from physical defects. Perfect teeth, well-kept hands and nails, an easy poise, grace of movement and all other signs of care and attention to the well-being of the body are a constant source of suggestion to the pupils. On the other hand, decayed or uncleansed teeth, untrimmed nails, stringy hair, or

other evidences of carelessness in personal hygiene will go far toward nullifying the most expert teaching."

**T**OO, IT IS A FACT that "teachers are shorter-lived than workers in other occupations. They are also subject to various ills induced by their work and manner of life which, while they may not shorten life, rob it of much of its joy and satisfaction. A study of the cases of illness among eighteen thousand teachers for one year showed them to be liable especially to influenza, nervous complaint, throat and chest difficulties, intestinal disorders and anemia. In the matter of tuberculosis the teacher makes an appalling showing, the mortality rate being approximately as high for the teaching profession as for the notoriously unhealthful occupations of stone-cutter or saloon-keeper."

**T**HESE CONDITIONS ARE TO A VERY GREAT EXTENT THE DIRECT RESULT OF THE HAZARDNESS OF THE TEACHER'S OCCUPATION under present conditions of bad ventilation, worse lighting, ill-regulated heating, long hours, and the nervous strain incident to teaching itself. Certainly if any class of workers deserve radical reforms in conditions under which they labor, it is teachers, particularly in the small towns and rural districts.



DRUGGIST: "Pills, my dear?"

Little Girl: "Yes, please sir."

Druggist: "Antibilious?"

Little Girl: "No, sir, uncle's bilious."—*New Haven Leader*.



## Question Box



11558. *Coldness in Back.*—*M. P., New York:*

“Please suggest the cause of a cold feeling in the back, between the hips, in the case of a woman twenty-five years old, in good health, living chiefly on a low-protein diet.”

*Ans.*—Abnormal sensations of cold, heat, numbness, etc., are due to disturbances of the nerves. When located in the back these sensations are most commonly due to colitis.

11559. *Inflammatory Rheumatism.*—*M. L. S., Illinois:*

“Please suggest treatment for the following case of inflammatory rheumatism of three months standing: patient recently began hydrotherapeutic treatment with a nurse. After the first treatment, which was a hot blanket pack followed by a cold mitten friction and oil rub, the patient suffered intense pain at night, although the same pain had been present the previous evening before beginning the treatments. She responded well to the treatment, perspiring freely and reacting well; no chill at any time during treatment. What treatment would you advise?”

*Ans.*—Cold applications should not be made in cases of inflammatory rheumatism unless the temperature is quite high. Cold applications increase the pain in rheumatism by checking perspiration. Patient should be kept in a state of perspiration by hot water drinking and hot applications. This suggestion is, of course, general in character. In every case of inflammatory rheumatism a physician should be called and directions followed.

(Continued on page 18, Advertising Section)



## Book Review



### Teaching of Sex Hygiene in the Public Schools

**I**N spite of all the publicity that has been given the subject, the teaching of sex hygiene (its methods and aims) in public schools is obscure in many minds. One thing that has complicated the situation is the failures that have occurred in some of the cities that have attempted to introduce sex instruction—failures usually due to haste and lack of preparation on the part of the teachers. Much of the discussion of the subject, too, has occurred at conventions, the proceedings of which are not given popular distribution. To inform the general readers of the present status of the question has been Doctor Lowry's aim in the present volume. Doctor Lowry has been the author of several valued books issued by the same publishers and dealing with problems associated with instruction in sex matters from the standpoint usually of the boy and girl, and we are pleased to see the present volume take the subject into the public school itself.

"Teaching Sex Hygiene in the Public Schools." By Edith Lowry, M.D. 50 cents net. Chicago: Forbes and Company.



### Doctor Montessori's Own Handbook

**D**OCTOR MONTESSORI in her handbook must have had in mind the many questions asked her by mothers, for there can arise few questions concerning her method that are not answered in the handbook. It gives a full and clear description of the method, and, what is of the greatest practical value, a description of a Montessori apparatus, with full directions for use. And this fact must disabuse the minds of people who have conceived the Montessori method as consisting of a group of more or less attractive toys, the playing with which constituted the Montessori method. This conception of the system is shown by the present volume to be quite untrue, as also the fact that one is not prepared to apply the principles without careful study of the principles and the spirit of the

method—and it is to convey both a knowledge of the principles and the spirit with which they are applied that the present volume has been written. The book is profusely illustrated with charts and photographs of the apparatus used in the Montessori school.

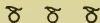
"Dr. Montessori's Own Handbook." By Maria Montessori, M.D. \$1.00 net. New York: Frederick A. Stokes Company.



### The Deaf

**T**HE present volume is an unique study of a subject about which too little is known economically and socially. As Mr. Best says, the deaf do not form a large part of the population, so that many people seldom come in contact with them, with the result that problems connected with them receive scant attention. The object of the author in the present work has been to consider the attitude of society in America toward the deaf, and to discuss the duties which have been recognized in respect to them, the status it has created for them, and the extent and forms, and the adequacy and correctness of this treatment. The book is divided into two parts: the first is devoted to a study of their status in society, and the second to provision made for their education. The volume is the latest addition to the Crowell Library of Economics, and we are not overstating its merits when we say that it is one of the best numbers added to this excellent library. Interesting statistics are given as to the causes of deafness in various parts of the country, while the methods which obtain in various States in the education of the deaf are thoroughly presented.

"The Deaf: Their Position in Society." By Henry Best. \$2.00 net. New York: Thomas Y. Crowell Company.



### Eugenics

**D**URING the year 1913, thirty-two of the largest American universities through the generosity of Mrs. Huntington Wilson provided a lecture on the subject of eugenics, in each case delivered by a member of the faculty. They were arranged for, says Mrs. Wilson, in the belief that "the most necessary step to be taken towards the end of awakening a

eugenical conscience, and thus paving the way to an effective operation of public opinion and to wise legislation along eugenical lines, must be that of education. Therefore, the purpose was to have the subject of eugenics what it means, what the necessities for it are, and what are its aims—put clearly and forcefully before as many undergraduate student bodies as possible." The present volume is made up of twelve of the most important of these lectures, representing many of the most eminent authorities in American science: Dr. Charles B. Davenport, Director, Department of Experimental Evolution (Carnegie Institute); Dr. Robert H. Wolcott, of the University of Nebraska; Dr. Victor C. Vaughan, of the University of Michigan; Dr. W. H. Howell, Johns Hopkins University; Dr. Harvey Ernest Jordan, of the University of Virginia; Dr. Herbert John Webber, of the University of California; Dr. Arthur Holmes, of the Pennsylvania State College; Dr. Charles A. Ellwood, of the University of Missouri; Dr. Albert Galloway Keller, of Yale University; Dr. William Herbert Carruth, of Leland Stanford Junior University; Dr. Morton A. Aldrich, of the Tulane University of Louisiana, and Dr. Edward L. Thorndike, of Columbia University.

The book contains an excellent introduction by Dr. Lewellys F. Barker, of Johns Hopkins University, who thus sums up the problem of eugenics so far as it effects the man in the street: "Can man, from now on, through the use of his intelligence, learn enough about the influences of heredity and environment to permit him consciously and successfully to act in the direction of a selective birth-rate which will compensate, or more than compensate, for the race-impairment threatened by his conscious interference with the selective death-rate?" Eugenists, as Doctor Barker says, are optimistic and believe that he can.

"Eugenics: Twelve University Lectures." \$2.00 net. New York: Dodd, Mead and Company.

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### "The Shifting Scenes"

**M**R. RUSSELL, in the present volume of memoirs, gives the reader good measure. The book has grown out of twenty-five years' experience in newspaper work, in which he filled every position from "deputy assistant mailing clerk to publisher," occupying at different times the post of editor of the *New York Herald*, the *New York World*, and the *Chicago American*. Newspaper work cannot be the debased and debasing thing

often reputed to be when a veteran can say, as Mr. Russell says, that "the best job on earth is that of the city editor of a New York daily. Other employments are but rubbish in comparison." The author has a trenchant style, and is an acute observer and profound thinker, and those portions of the book dealing of memorable chapters in American history of the last quarter of the nineteenth century are of intense interest—such chapters as "The Hay Market and Forward," "Why Harrison was Nominated in 1888," "The Rocky Road to Johnstown," "How Harrison was Nominated in 1892," "How Cleveland was Nominated in 1892," etc. Of more human interest are the two chapters on the metropolitan newspapers of the "80's" and "90's," also "Old Days with the Tramp Printers." There is scarcely an event in American history covered by his newspaper career with which the author has not been in intimate touch, and this familiarity with men and scenes forms a striking back-ground to all that he writes.

"The Shifting Scenes." By Charles Edward Russell. \$1.50 net. New York: George H. Doran Company.



### The Amazing Argentine

**M**R. FRASER well characterizes Argentina as "amazing," for no matter how well informed the reader has been with regard to the great South American republic, he cannot help being amazed, or amazed anew, at the tremendous array of facts and figures which the author produces. Mr. Fraser made a special visit to Argentina for the purpose of gathering material for his book, traveling from Buenos Aires in the East to the Andes in the West, and from Tucuman in the North to Bahia Blanca in the South. Everywhere there is the same story to tell, of phenomenal growth and development. And one is further amazed at the fact that, while seventy million acres are under cultivation, and furnishing quantities of wheat, corn, and other cereals that are vitally affecting the world's market, yet only one-sixth of the total land suitable for cultivation has been broken by the plow. All this Mr. Fraser tells, and in addition, he gives graphic pictures of the people and of their homes and home-life, of their studies and railways, of their education and their pleasures. A feature of the book are the fifty-five delightfully colored photographs.

"The Amazing Argentine: A New Land of Enterprise." By John Foster Fraser. \$1.50 net. New York: Funk and Wagnalls Company.