Herald of Health

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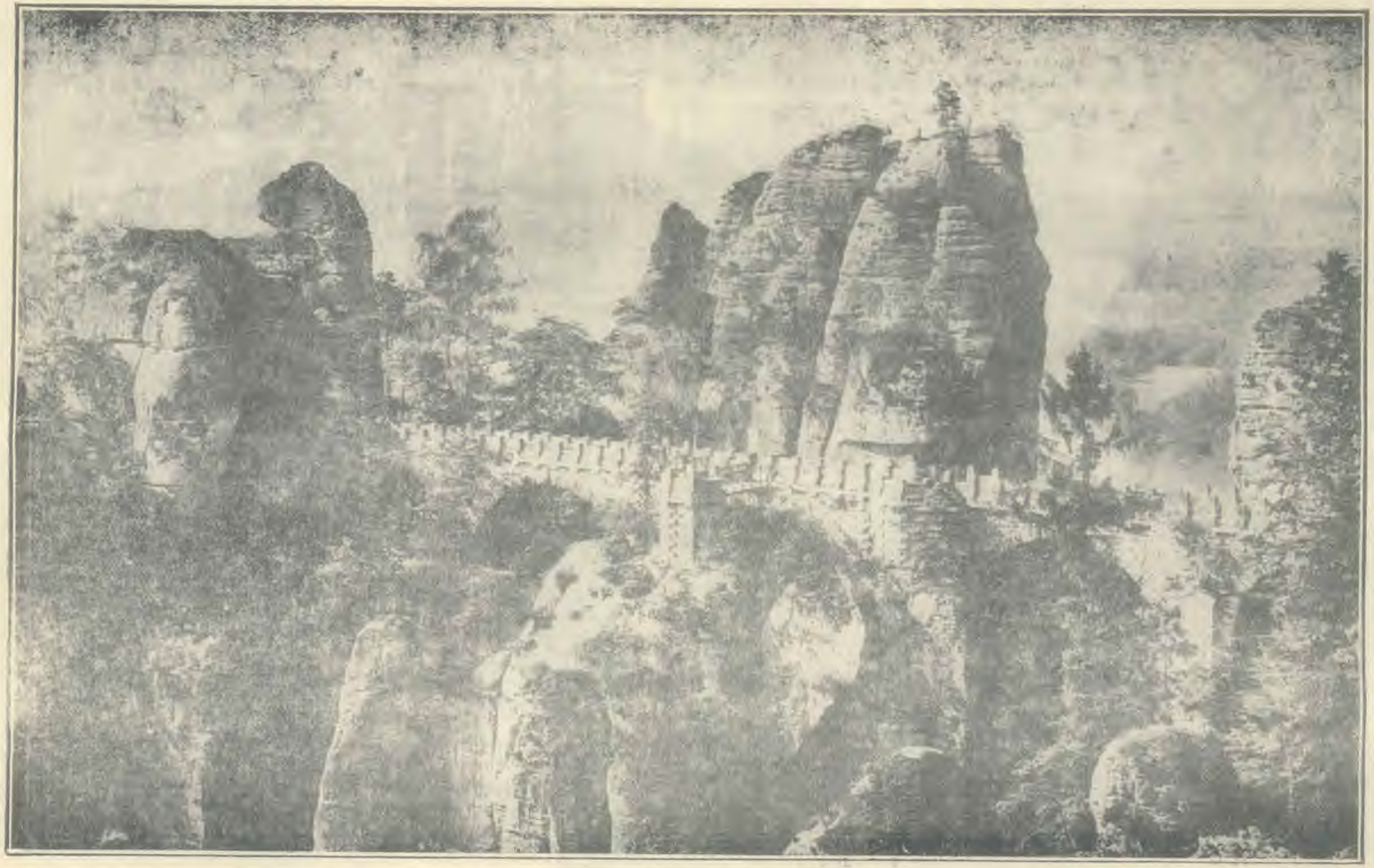

A View in Saxon Switzerland

General Articles

Milk as a Disease Transmitter

The Children Often Wholly Dependent on Cows' Milk—Care Should Be Used in Securing an Article Free from Disease

By Daniel H. Kress, M. D.

Milk is a staple article of food upon the tables of civilized nations to such an extent that the cow has been termed the "meek foster mother of the human race." Upon her the younger members of the family especially depend for nutrition. While this vital fluid may be used by mankind, and is of value as a food when pure, no one factor contributes more heavily in the production of disease than a tainted or impure dairy supply. Unfortunately, milk forms one of the best breeding grounds for bacteria of all kinds; and since it cannot be taken as nature designs it should, direct from the udder, every effort must be made to prevent exposure and the introduction of foreign matter.

Unprotected milk is a source of danger. The bacteria which gain entrance, though few in number, multiply with such extreme rapidity that in a few hours, under favourable conditions, they are innumerable.

Few are aware of the amount of filth that finds access to the ordinary unprotected milk pail. It has been estimated that in one large city alone, more than twenty tons of cow manure is consumed by the inhabitants of the city each year by the use of milk.

Great alarm is felt when the water supply of our cities contains bacteria to the number of one thousand to the cubic centimeter, and efforts are wisely put forth to improve, at great expense, the purity of such water. Yet it is not uncommon to find from ten to twenty millions of bacteria to an equal quantity of milk served on the average city table.

Guard Against Avoidable Causes

State laws have been enacted to lessen the dangers arising from impure milk. An absolutely pure milk supply is out of the question. Therefore all that any state law can demand, is that avoidable causes of contamination be guarded against. In Michigan, where water containing five hundred bacteria to the cubic centimeter would not be tolerated, the law demands that the milk shall not contain more than two hundred thousand germs to the cubic centimeter. If water containing five hundred bacteria to the cubic centimeter is dangerous, milk containing one thousand times that many would be one thousand times as dangerous as a carrier of disease.

Dr. Wiley discovered that the ice cream served in the city of Washington contained anywhere from fifty millions to four hundred millions of bacteria to every cubic centimeter. To ascertain the number contained in each teaspoonful, it is needful to multiply this by five, as there are five cubic centimeters to the spoonful. We find, therefore, that ice cream may contain anywhere between two hundred fifty millions and two billions to each teaspoonful.

Infected Milk and Infant Diseases

The many diseases of infancy are without doubt due largely to infected milk, which forms the chief article of food for the young. The modern mother either cannot or will not nurse her children. German women are said to be better able, and also more willing, as a

rule, than the average mother; yet it has been found that in the city of Berlin, only one mother out of every four now nurses her children, and over two thirds of the babies have to be artificially fed. In American cities it is not better.

Cow's Milk not a Perfect Substitute

Cow's milk is not a perfect substitute for mother's milk, no matter how carefully or scientifically it may be modified or prepared; but since it is the food that has to be accepted as a substitute, every effort should be made to furnish it as free as possible from bacteria. As all the milk contains bacteria, the only practical remedy—although there are objections to it—is in boiling, or pasteurization. Wherever this has been carried out, excellent results have been obtained. For instance, in Sandhausen, near Heidelberg, where pasteurization of milk has been enforced by law, the mortality of infants under one year of age has been reduced from forty-six per cent to ten per cent since its introduction.

Typhoid in Milk

Dr. John Trask, past assistant surgeon of the Public Health and Marine Hospital Service, called attention to 317 outbreaks of typhoid fever epidemics, 125 scarlet fever epidemics, and 51 diphtheria epidemics, brought about through the agency of milk.

In the past, typhoid fever epidemics were attributed to the water supply; but after improved water supplies eliminated water as a factor, and typhoid fever epidemics still continued, the attention was called to milk as a causative factor of these epidemics. Dr. Harrington, of Massachusetts, reported eighteen local outbreaks of typhoid fever; and of this number, fourteen were traced directly to the milk supply.

Scarlet fever epidemics due to infected milk are not uncommon. In an outbreak in Boston, of 227 cases in four days, 195 were in families supplied by the same dairy. This dairy also sold milk at Cambridge, Somerville, and Everett. In these four places, 717 cases of scarlet fever were reported. Eighty per cent of them were supplied by the same dairyman. In 1906, during a period of three months, twenty cases of scarlet fever occurred at Melrose, Massachusetts. Nineteen of these were customers of one milkman.

At Evanston, Illinois, an outbreak occurred in January, 1907. Out of 157 cases, 153 were in families that received their milk from a dairy which supplied only one eighth of the milk used in Evanston. Many other similar cases might be cited to demonstrate that scarlet fever is spread frequently through the use of milk.

Diphtheria in Milk

In 1877, an outbreak of diphtheria due to the milk supply was reported in England. In 1886, a similar epidemic was reported at Melrose, Massachusetts. In 1898, an outbreak of fifteen cases was reported in Philadelphia, in houses widely scattered, the children attending different schools, but all were consumers of milk from one dairy.

In 1903, thirty-five cases of diphtheria occurred at Los Angeles within ten days, in thirty-three families, all of whom used milk from one dairy. Diphtheria bacilli were later found in the throats of three of the milkers.

At Hyde Park, Dorchester, and Milton, Massachusetts, in 1907, seventy-two cases occurred within one week. Of this number, thirty-two were reported in one day. Of the seventy-two cases, sixty-nine were in families using milk from a dairy farm where the farmer's grandchild had the disease.

Beginning October 3, 1906, within a few days, thirty-six cases of diphtheria developed in the suburb of Clifton, Ohio, within four squares of each other. Each of the thirty-six patients drank the suspected milk. Where only one member of the family drank this milk, as happened in several families, only that member contracted diphtheria. In two families who took milk from this dairy, but sterilized the milk before using it, no diphtheria appeared. In the case of a small boy

who returned from Europe on the afternoon of October 4, and who, on reaching home, at once ran to the cottage of the coachman and there drank a glass of the suspected milk, diphtheria appeared on the evening of October 6. The following day, the coachman, his wife, and their daughter all had diphtheria, all having drunk of the same milk.

At this time, two cases developed in a boarding house in the heart of the city, several miles distant from the other cases. These two, mother and child, had daily visited the boy's grandmother in Clifton, and there had drunk milk. This milk came from a small dairy, and the boy who delivered it had a sore throat.

There are a number of other diseases common in infancy and early childhood which can, with a little investigation, be traced to a dirty or infected milk supply.

Bowel Disorders from Milk

Summer cholera among infants, dysentery, and other bowel disorders so prevalent in warm weather, when the bacterial growth in the milk is favoured, are unquestionably due chiefly to the milk supply.

To deliver milk in sealed bottles is an improvement over the old method; but this does not eliminate the danger of milk contamination, for bacteria gain access to the milk before bottling. The bottles themselves, unless boiled, become a source of danger. Frequently full bottles are carried into a sick room and emptied, and the contaminated air from the sick room rushes into the space that had been occupied by the milk. These same bottles are again filled with milk, and the germs of disease are planted in the milk, where they multiply rapidly. The bottles then find their way to other homes. In this way, germs may be conveyed from family to family.

In view of these facts, it seems almost criminal to serve milk to children without first boiling or pasteurizing it. A little attention given to this will save an unnecessary outlay of means in doctors' fees, and will also save much sickness and suffering.

How to Keep Healthy

Some Choice Health Hints—Simple Means for Keeping Well

By David Paulson, M. D.

Good health is a good form of life insurance. When you sell health for money, you exchange wealth for trash. If you want to preserve your health, you must fight those things which cause disease.

Fresh Air and Sunshine

Your lungs cannot be washed, but they can be aired.

There is no fresh air trust. No one has a "corner" on the air market.

You would not offend your stomach with dirty water. Then why fill your lungs with filthy air?

A flood of sunshine in the home may fade carpets, but it puts the bloom of health upon your cheeks. Take your choice.

An open window is better than an open grave.

Warm, stuffy rooms have killed more people than ever froze to death.

If you sleep out-of-doors, you can get along with an hour's less sleep than otherwise. You save that much time by breathing fresh air.

One of the most certain ways of producing unhealthy blood and also unhealthy mucous membrane is to poultice the lungs sixteen times a minute with impure air. Why not do the heroic thing—that is, screen your verandah and fit it up for an outdoor bedroom?

Deep Breathing

You will live longer if you take longer breaths, for you will have better blood.

You ought to practice deep breathing until it seems as natural as saying your prayers,

and then you are not far from the kingdom of health.

Deep breathing improves the digestion. Practice it frequently during the day. More die of air starvation than of food starvation.

After each meal, breathe as deeply as you can, ten times in succession, then breathe naturally for a minute, then take ten more deep breaths. Increase this by one round every day until you take from three to four hundred deep breaths daily as a regular habit.

Dietetic Suggestions

Do not eat a morsel between meals.

If you keep your digestive mill constantly grinding, it will soon wear out.

Food must be well relished in order to be well digested.

Avoid iced foods and drinks.

Do not make a cold storage plant of your stomach.

Many a man feels "put out" because of what he "takes in."

Masticate. If you taste your food before you swallow it, you will not have to taste it afterwards.

Chew for your lives. If you chew *long*, you will live long; and you will not need to eat so much.

Eat your bread with gladness.

Some one has well said, "Do not eat when you are mad, or bad, or sad; *only* when you are *glad*."

It is not only necessary to bring a good appetite to the table, but it is also important to come with a glad state of mind.

When one eats in an ugly, dissatisfied, contemptible state of mind, he is sinning against God, and is wronging himself. The correct ideal is to thank God at the beginning of the meal, and then continue feeling thankful during all the meal.

Do not eat between meals. Children should not be permitted to piece at all hours of the day. Nature does everything in regular rhythm. When we persist in breaking into that, we speedily break down the digestive system.

Eat more natural foods. Such green garden truck as cabbage salad, lettuce, spinach, and carrots cleanse the alimentary canal by their bulk, and the blood by their "vitamines" and mineral salts.

Do not fry starch foods in grease. In frying them, the grease percolates down through, and covers every little particle of starch with a coating of fat, so that it is bomb-proof to both mouth and stomach digestion. The digestive juices cannot get at it until the food reaches the small intestine, and the bile cuts off the grease.

Genuine, old-fashioned whole-wheat flour is better for the health than white flour, because God has put the "vitamines" and much of the mineral in the covering of the grain. The same is true of natural brown rice. Fowls that were fed exclusively on polished rice for three weeks, began to be paralyzed, and suffered other symptoms of disease. When they were fed on whole rice, they were soon restored.

It is a mistake to suppose you must eat flesh in order to be strong. The ox does not get its strength by eating another ox. Corn is not improved by being changed into pork; in fact, it may have trichinæ or tapeworm added to it. There is no advantage in eating secondhand food, any more than there is in wearing secondhand clothes.

Drugs, Spices, and Condiments

"Avoid patent medicines as you would a pestilence."

Intemperate eating is much more common than intemperance in drinking.

Tea and coffee are drugs, not foods, and should come from the chemist's shop instead of the grocery.

Use salt sparingly. Condiments should be wholly discarded, because they irritate the stomach, tending to produce gastric and intestinal catarrh.

Foods that taste hot when they are cold, continue to be hot after they are swallowed. Mustard plasters may be applied externally, but they should not be used internally.

It is because we have so little scientific

cookery that so many have to resort to crude flavours that give the palate a "twist," but that also injure the nervous system.

Water Drinking

Do not drink while eating, nor eat while drinking.

If you do drink at mealtime, you should drink between the mouthfuls instead of with the food.

Drink a glass of water on rising and on retiring, and as frequently as convenient during the day.

During the winter, many people almost forget to drink water. Such should be reminded that water drinking is simply bathing on the inside. The average mortal would live much more comfortably if he drank a larger quantity of water.

Exercise

When we are resting, two-thirds of the blood is in the internal organs; when we are exercising, two-thirds of it is out in the muscles. Active exercise is the best means to relieve internal congestion. The benefit remains a long time after the exercise has been taken.

There is no better all-round exercise than vigorous, energetic walking. It should be taken with the head erect, chest up, abdomen drawn in, breathing deeply through the nose, maintaining at the same time a cheerful state of mind, trying to be in harmony with nature and nature's God.

A capital way of strengthening the abdominal muscles is to sit well forward in a chair, and then tilt forward and backward, raising the knees each time. Do this a few times a day when you have nothing else to do, and you will be astonished, in a short time, to find how it strengthens the abdominal muscles; and it is far more important to have strong abdominal muscles than it is to have strong muscles in the arm.

The prevailing athletic mania, which is so "highly esteemed among men," we may be sure is an "abomination in the sight of God." Luke 16: 15.

The United States Public Health service says "that the champion athlete often dies young. It recommends moderate exercise outdoors every day. Walk to your business. Walk for the sake of walking. Take two hours' outdoor exercise every day."

The present athletic craze is unquestionably of the devil; the "work cure" is of God. Take your choice.

Religion and Health

Health and happiness result from obedience to God's laws. Misery and unhappiness result from disobedience.

We shall make but little progress in this campaign for better health until our souls are gripped with the great truth that the laws of health are the laws of God, that sickness and suffering are directly or indirectly due to the violation of these laws.

If we co-operate intelligently with God in the restoration of health, making use of such opportunities as are within our reach, discarding such things as God has clearly shown us are wrong, God will give us all the health that He sees, in His infinite wisdom, we will put to good use in this life; and He will bless to our own good and to the good of His work whatever infirmities He permits us to retain, just as He did in Paul's case. In other words, He will make them work together for *our* good.

Every invalid should heed the divine injunction, "Come unto Me, all ye that labour and are heavy-laden, and I will give you rest," and have implicit, personal faith in the God who upholds the universe, and has promised He will *never* leave us nor forsake us.

The Germ of Typhus

TYPHUS fever has since the Peloponnesian war at least, says the *Scientific American*, been travelling companion to Mars; and its various names—famine, siege, camp, putrid fever—have well indicated the relationship. An adequate history of this infection would be the history of Europe since Charles V, to go no farther back. With its congeners—smallpox, cholera, plague, typhoid—typhus has modified the course of most wars, has indeed abruptly ended some wars. The widespread Napoleonic compaigns served to disseminate typhus throughout Europe; and now, a century after, the like pandemic condition is liable to obtain. And only by the proved ability and vigilance of our coast quarantine authorities are we assured of being spared "visitations" of this pestilence.

This typhus is a filth disease, transmitted by the louse's bite, and only that way. Brill's disease, of which more presently, is a mild form of typhus; and our American tabardillo, which our American physician Ricketts was martyred in studying, is "the thing itself."

The typhus mortality is especially high among military surgeons—it has been 60 per cent; and indeed, up to May 1st last, above two hundred doctors and nurses have died in Serbia fighting this so indifferent ally to any and every foe—this slayer of non-combatant and soldiery alike, far more destructive than any ordnance. The only effective means thus far has been to eradicate the louse; which, in the circumstances now obtaining in many parts of Europe, is a procedure as available as was sweeping the Augean stables. So that now, more than ever before in history, is the need of some such prophylactic against typhus as has been so successful against smallpox and typhoid, as has been successful in considerable degree against cholera and the plague. And, indeed, the blessed boon would seem to be forthcoming at this, the psychological moment.

In the pathological laboratory of Mount Sinai Hospital, in New York city, Dr. Harry Plotz, a physician not yet twenty five years old, isolated from the blood of Brill's disease sufferers a rod-shaped (bacillary vegetable) parasite which Dr. William H. Welsh has named the *Bacillus typhii exanthematus*. This germ when first isolated is anaerobic (unable to exist in the presence of oxygen); but after a time it can be grown aerobically (in the presence of air). It is pleomorphic (occurring in various distinct forms), 0.9 to 1.93 microns long, and in breadth one-fifth to three-fifths its length. It is not acid-fast, it has no capsule, and polar bodies can be demonstrated in it. At the time of this discovery the Balkan war was sending over plenty of "straight typhus material;" and Dr. O'Connell, the physician at the Port of New York, allowed Dr. Plotz to take blood from such patients; and these specimens yielded the bacillus got from the Brill's disease sufferers.

Complement fixation tests were then made by Dr. Plotz and his colleague, Dr. Peter K. Olitzky. They used the serum of eight cases of typhus fever; and antigens were made up from organisms obtained both from cases of Brill's disease and straight typhus. The antigen made from the Brill's disease bacillus binds the complement in the same manner as the antigen made from the bacillus isolated from the typhus cases. And complement fixation tests were made in thirty-six control cases with absolutely negative results. Inoculations in guinea pigs of a pure culture of the bacillus gave the disease to those animals. And serum from a convalescing typhus patient was proved to have bactericidal properties against the organism obtained from Brill's disease. Thus, the latter is really an endemic form of typhus, the real, the virulent form being manifest in that epidemic now ravaging in Serbia.

These findings Dr. Plotz reported in the

Journal of the American Medical Association of May 16, 1914, and on the evening of April 14th last, before the Pathological Society of New York and to the applause and most hearty congratulations of many eminent physicians and scientists, Dr. Plotz announced not only the discovery of the germ of typhus, but also that this discovery has resulted in the perfecting of a preventive serum. It is, of course, too early to be certain of its efficacy; however, many physicians going to Serbia to fight typhus have had themselves inoculated with it, thus evincing their faith in it.

Where Do You Sleep?

IT is recognised by most minds that sleep is a physical, mental, and, in truth, a spiritual necessity. Poets have said some very beautiful things about it, and called it by some very sweet names:—

Nature's soft restorer, balmy sleep.
Life's nurse sent from heaven to create us anew day by day.
Oh, sleep! sweet sleep! whatever form thou takest thou art fair.

But they have never said more than is true concerning its value to man.

The ancients understood something of the importance of sleep, and a god, Morpheus, was especially dedicated to preside over slumbers, and to give sweet dreams. Probably our readers do not believe in this feature of Roman mythology, but for all that it has its signification in real life. It is indicative of a known want in human existence. Romance also talks of its "sleeping beauties" and of its "wakeful witches."

About one-third of our time should be devoted to sleep, so that the man who has lived seventy years should have spent about twenty-three of these in slumber's sweet forgetfulness. Of course, we read of men who are said to have spent but a few hours nightly in sleep, but we must regard them as some of nature's nondescripts, or at least exceptions to a general rule. We may cheat nature with the hope of gaining time, but after all it will be a mistake, though it may take years to convince us of our folly.

There is no fact more clearly established in the physiology of man than this, that the brain expends its energies and itself during the hours of wakefulness, and that these are recuperated during sleep. If the recuperation does not equal the expenditure, the brain withers—this is insanity. Thus it is that in early English history, persons who were condemned to death by being prevented from sleeping, always died raving maniacs; thus it is also that those who are starved to death become insane—the brain is not nourished and they cannot sleep. The practical inferences are three: 1. Those who think most, who do most brain work, require most sleep. 2. That time saved from necessary sleep is infallibly destructive to mind, body, and estate. 3. Give yourself, your children, your servants—give all that are under you the fullest amount of sleep they will take by compelling them to go to bed at some regular, early hour, and to rise in the morning the moment they awake; and within a fortnight nature, with almost the regularity of the rising sun, will unloose the bands of sleep the moment enough repose has been secured for the wants of the system.—*Many Thoughts*, page 563.

This is both wise and thoughtful counsel concerning the value of sleep, and now the force of the question, "Where do you sleep?" will appear, for if one-third of our life is spent under wrong conditions, nature must suffer for this as well as for all absolute neglect. When you sleep, is your head in the corner of a room buried under heavy exhalations of carbonic acid gas? Or do you sleep where the sweet breath of the roses can blow across your couch with restfulness for your slumbers, and inspiration for your dreams?

Some sleeping apartments are little less than pestilential, and when their occupants rise in the morning from that "carbonic corner," it is at least with aching heads and confused perceptions.

The Creator has supplied an abundance of air, and all nature seems to appreciate

the gift with the exception of the human factor. And this being, who should be the most intelligent of all, pushes his head into a corner, and undertakes to sleep in an unventilated and evil-smelling room.

Each person exhales about one cubic inch of carbon-dioxide, and at least one cubic inch of other poisons at each respiration. This is thrown off into the atmosphere, and, if unchanged, the air in a room soon becomes poisonous and unfitted for use. At least 3,000 cubic feet of fresh air are required per hour by each person, and without ventilation—good ventilation—this cannot be secured.

How foolish, then, to sleep with the head pillowed in a corner of the room. Even if the door and window of the room are open, this must be a destroying practice, but with the door and window closed, it is nothing short of slow poisoning. Nearly 500 gallons of blood pass through the heart to the lungs each day. This must all be purified by casting off the poisonous elements through the breath, and by taking in the pure oxygen by inhalation. For this process more than eighty barrels of air are daily required, but if the air is retained stagnant in a room it becomes a deadly power instead of a life-giving agency. The air contained in a seven by nine bedroom, eight feet high, would remain fit for breathing less than ten minutes when inhabited by only one person, if unventilated.

The head should not be pillowed in the corner of a bedroom, but rather in the centre; neither should the door or windows be closed. Sleep can only become nature's true restorer when the best of conditions obtain for plenty of fresh air.

Again we ask the question, "Where do you sleep?

Your "Peck of Dirt"

IT is an old saying often quoted when eating amid doubtful surroundings that "everybody will have to eat a peck of dirt."

"Yes," said the old farmer, pulling a hair from his mince pie and spitting out a button from his next mouthful, "I may have to eat a peck of dirt in my lifetime, but I don't want to eat it all at one meal."

In recent days people have found out that clean food means good health and dirty food means bad health. At the same time many a diner would lose his appetite if he went into the kitchen of the restaurant where he is eating.

Conversely many restaurants make a point of inviting visitors into their culinary departments where things are kept so neat and clean as to really afford a good advertisement.

The man who has been compelled to get his food in restaurants and cafes for many years records below some of his experiences. The record becomes edifying if you proceed to kick every time your attention is called to anything similar :—

"I have seen a waiter wipe his sweaty forehead with the towel he carried on his arm for wiping dishes.

"I have seen knives, forks, and spoons, which had been used a short time before, simply wiped on a not too clean tea-towel without even dipping them in water.

"I have seen tumblers, after having been used at table, simply wiped with a not too clean tea towel without even dipping them in water.

"I have seen knives, forks, spoons, and tumblers, after being at table, rinsed in greasy, yellowish dish water, and then wiped with a tea-towel which was an approach to rubber roofing in colour.

"I have seen restaurant kitchen help pass hands through their hair and then handle sliced bread.

"I have seen two mice jump out of a bread-box, and the sliced bread therein sent to the table as if nothing had happened to it.

"I have seen a waiter pick two flies out of a glass of milk with his fingers, and then place it on a table to be drunk by a child.

"I have seen a cook at a nickel bound grill in white cap and coat insert his finger in his mouth to scratch the interior surface, and upon removal immediately pick up a nice porterhouse steak and place it upon the broiler.

"I have seen flies proceed direct from a spittoon to a bowl of berries on the counter which were waiting there to be served when called for.

"I have seen a cook change his shoes and socks in his kitchen, and then, without washing his hands, proceed to the handling of food.

"I have seen a bowl of sugar spilled upon the floor, then picked up with the hands, and carried directly to the table.

"I have already probably seen too much, and will cease with the observation that we eat heaps of microbes without receiving any harm, and then again harm does result.—*The Healthy Home.*

Do Men Need More Food Than Women?

THAT men eat five or six per cent more than women—not because they are gluttons, but because they actually require that much more nourishment—appears as the result of an investigation made in the nutrition laboratory of the Carnegie Institute at Washington by Francis G. Benedict and L. E. Eames, and presented on January 13 to the National Academy. Our quotations are from the paper as printed in *The Proceedings of the Academy* (Baltimore, February). The reason for the discrepancy seems to be that women have a smaller proportion of active tissue than men of the same weight, and more inactive material, such as fat. Say the investigators:—

"From the earliest attempts to adjust food-intake to the energy requirement, it has been recognised that the dietetic needs of men as a class are somewhat greater than those of women. This increase has been commonly ascribed in large part to the variations in the muscular activity, and yet there has been a definite belief that the basal energy requirement for women may be materially different from that for men. In connection with observations made on a large number of normal men and women, primarily for the purpose of comparing them with pathological subjects, we have accumulated the results of observations on eighty-nine men and sixty-eight women, all of whom were in 'presumably good health.' The experiments were made with essentially the same technique and with the subject in the same condition of muscular repose and the postabsorptive state, *i. e.*, twelve hours after the last meal. Under these conditions, differences due to muscular activity are entirely eliminated, and we obtain the basal normal caloric output of the individuals."

The investigation disclosed that the average woman generates only 1,355 heat units in the twenty-four hours, as against 1,638 produced by the man, or about two per cent more for the latter, per pound of body-weight. When groups were compared, after careful selection of individuals of nearly the same height and weight, the men were found to produce about twelve per cent more heat than the women. We read further:—

"We rigorously excluded athletes from these comparisons, and hence we are dealing here with non-athletic men and women of the same height and the same weight. It is thus reasonable to suppose that the actual body surface of the different groups must have been very nearly the same, and it is not logical to assume that the larger heat-production noted with the men was due to a disproportion between the body-measurements and the body-surface. We believe that these data show a basal metabolism for men some five or six per cent greater than for women of similar height and weight, and that this increase is due to the fact that in all probability the women, particularly in those groups with the greater body-weight, had a much larger proportion of subcutaneous fat than the men, thus indicating a consequent smaller proportion of active protoplasmic tissue."—*The Literary Digest.*

Editorial

The Pure Milk Problem in India

WHEN we take into consideration some of the prevailing opinions with regard to the selection of a milk for domestic consumption, the facts become a matter of importance. One person thinks that, because she has access to goat's milk, she has all there is to be desired in this line; another feels the same about ass's milk. And often we hear a mother say with an air of confidence and satisfaction, "I am getting the milk for my baby from this or that Jersey, Guernsey, or Devon cow." Confidence is a great thing, and we hesitate to upset the assurance of such mothers by telling them that it is quite possible they are doing the worst possible for the baby. Milk being a very important article of diet, so much so that it is the mainstay of life for the first two years, the question will bear close investigation.

From the standpoint of the infant nothing compares with the mother's milk. It furnishes the baby substances necessary for its proper development that are obtainable in no other milk. Goat's milk is all right for kids, ass's milk for baby asses, cow's milk for calves, but none of these are the best for the infant. The mother who weans her baby to enable her to attend operas, circuses, theatres, moving picture shows, and to keep up her social functions and exposes her infant to the dangers of artificial feeding, is shirking her responsibility as a mother, and does not deserve the appellation of which the world is justly proud.

Yet there are some mothers who cannot nurse their babies. For such it becomes necessary to furnish a substitute. The nearest to mother's milk should be selected. Ass's milk is supposed to have a composition nearest to that of mother's milk. Allowing this to be the case, because of the insufficient quantity procurable, it need not concern us farther.

Because of the inability of procuring good cow's milk in India, the goat is often resorted to, even to the extent of putting the infant to the udder of the goat and letting it work out its own salvation. While this at first thought might seem ridiculous to the "finicky" mind of the Westerner, yet upon second thought it is not so bad after all as it does away with the handling and after contamination of the milk, an important thing in India. The greatest draw-back to this is the milk of the goat in question may not be suited to the individual needs of the infant, as the food constituents in the milk of goats varies materially. One may have a high fat content, while in another it may be very low. The same is the case with the proteins and milk sugar content. For this reason it is better to take the milk for the infant from a herd of goats, which milk will run something as follows.

Specific gravity	1.030	
Fats	7.4	per cent
Proteins	5.9	,, ,,
Milk Sugar	3.5	,, ,,
Water	8.2	,, ,,

This is two to three times as strong as the average mother's milk. For this reason it becomes necessary to dilute the fats and proteids by adding water and at the same time adding sugar of milk. In this way goat's milk, as well as cow's milk, can be made to resemble in food constituents, mother's milk. The following is the composition of the average mother's milk.

Proteins	2.5	per cent
Fats	3.0	,, ,,
Milk Sugar	7.0	,, ,,

Cow's milk adapted or modified to meet the needs of the individual infant is probably

the best substitute for mother's milk in infant feeding. What has been said about taking the supply from one goat answers equally well with the cow. It is better to select the milk from a mixed herd of cows as the constituents in the milk of each cow are very liable to vary. Then again, if the one cow from which one may be using the milk happens to be diseased, he gets a greater share of the disease than if the diseased milk were diluted with the milk from thirty or forty other healthy cows in the herd. The country bred cow yields a milk having the following constituent;—

Fat	6.	per cent
Proteins	4.	„ „
Milk Sugar	4.	„ „

If you glance at the table giving the proportion of food constituents in the average mother's milk, it will be apparent at once what changes are necessary to make in the cow's milk that it may resemble mother's milk. The fats and proteins in cow's milk are about twice as high as in mother's milk, and the milk sugar is about one half as high as in mother's milk. Therefore, if one dilutes the cow's milk one-half with water and adds from three quarters to one ounce of milk sugar to the seer of mixture, the result will be very similar to that of mother's milk.

It goes without saying that the principles of cleanliness and sterilization often mentioned in these columns on this subject should be adhered to. This modification also takes it for granted that the milk is free from adulteration to begin with, as to modify a milk as we have just outlined when it is half water to begin with, would be disastrous to the infant.

In India, the buffalo is a very common source of milk supply. The fact of the matter is, that in many places one has to pay more for buffalo's milk than for cow's milk. The reason for this is its high fat content. More ghee and butter can be made from the same quantity of buffalo's milk. But for infant feeding it is not nearly as suitable. It is too rich for even the adult in many instances. Even when diluted to the proper consistency, it will not agree with the average infant. The curd of buffalo milk seems to be tougher and harder to digest than cow's milk. The mother often finds that her baby is not doing well, that it is having frequent attacks of indigestion. Upon investigation it is found that the baby is getting buffalo's milk. A change in the milk remedies the trouble. An analysis of buffalo's milk shows the following per cent of food constituents:—

Fat	8.0	per cent
Proteins	4.3	„ „
Milk Sugar	5.0	„ „

Very complicated formulae have been elaborated for the modification of cow's milk to meet the needs of the infant, but in India a few suggestions put in a simple way, thoroughly carried out, will do more good than the more elaborate methods. Infant mortality in India is an overwhelming problem. It is a problem that has hardly been touched with the tips of the fingers as yet. But when we consider the hundreds of thousands that go into the grave prematurely, mostly between the ages of one or two years and birth, due in most cases to wrong methods of feeding, we will be thankful to see any reform no matter how simple, that will make a start toward the reduction of this needless slaughter of the "innocents."

We get into the habit of thinking when the subject of milk is dealt with that it simply means that infants are the subject of the controversy, that is, we are in the habit of associating the subject of milk with child welfare; but on the contrary, milk plays an important role in the food economy of the adult. Milk contains all of the essentials in the most easily digestible form. This makes it a very valuable article of diet in diseased conditions, as fevers and tuberculosis, and in convalescence from most diseases. Sometimes you hear one say, "I cannot use milk; it does not agree with me." This is quite often the case with plain milk as it comes from the cow. Sometimes it does not agree with

some individuals, but I have failed to see the person or patient yet who could not take milk in some form or other as there are so many ways of modifying milk.

It can be used with limewater, the whey separated from the curd and each used separately. It can be made into a junket. Combined with ice it is used in the form of iced milk. It may be frozen, with the addition of a little sugar and some kind of a flavour. When beaten up with the whites of eggs or the whole egg it makes an egg nogg which is very nourishing. Custards, kumiss, and milk puddings of various sorts are nourishing preparations. Milk is also used with Vichy and aerated waters. Many people can take milk in this way who can not bear the plain milk. Some people can use milk if the cream is removed. It is true this removes some of the nourishment of the milk, yet there still remains the sugar, proteins and salts.

Buttermilk is another valuable preparation that is often borne better by individuals than milk. There are some Indian preparations that would often be of service to those that are accustomed to such. They are,—dhai, chorian, kunda, khoya, and rubri. Dhai corresponds to buttermilk or kumiss, and the other preparations are curd, obtained by boiling down milk to verying degrees of evaporation and prepared in various ways. These without doubt are nourishing, but their concentration would often be an obstacle to their use.

If a little time or attention were given to the use of milk in its various forms and if adapted to the needs of the individual, there would not be such a waste of money as takes place in the purchase of patent preparations such as Sanatogen, Albulactin, Glaxo, Malted milk, Benger's Food, Mellin's Food, etc., etc.; the list of which would take the whole of one issue of HERALD OF HEALTH. All of these concerns are making money and feathering their own nests on selling casein at Rs. 15 to 20 per pound. The question for us to decide is, whether we are going to be foolish enough to help them do it?

The populace of the earth are complaining of living being so expensive. This is due to a large extent to the fact, that the people are being educated by false and glaring advertising that patent foods are a necessity. The money is being snatched from an incredulous public. If you don't believe it, take time to consider the hundreds of millions of pounds that are being squandered yearly in the world in this way.

: Mother and Child :

Every Attention But One

"THE family" sat in the library, a little anxious-eyed. The doctor stood in the doorway. "Your aunt is just worn out, that is all. She must have absolute quiet and rest for a while, and have appetizing meals served to her. She must be given every possible attention. One of you girls should be made a sort of bodyguard and attendant for her, to amuse her, read to her, run errands for her, and look after her person and her room. She needs some one with her constantly. What she needs is perfect freedom from annoyance, irritation, and excitement. She will be better than ever at the end of a month like that."

Then the doctor went out, and the family talked it over. "It is a fortunate thing that I took that first-aid course, isn't it? I'll be able to give Aunt Emily the very best of attention now. I'll move a cot into that little alcove in her room, and take up my headquarters there. It will be just what Aunt Emily needs, and it will be fine training for me. Mrs. Alcott said the best way to become proficient in serving the sick is by actual practice." So spoke Olive, the eldest daughter.

It must be confessed that the family was a little dubious about this plan. "Don't you think Violet could do it better?" suggested father.

"Why, father?" Olive's voice was very indignant. "Why should Violet do it? She hasn't had any training in nursing at all. And she is the youngest daughter——"

"Violet is so even-tempered and cheery," continued the father. "It seems to me she would be very comfortable in a sick room. Of course, she has not had the training—but cheer is a big thing for a sick person."

"I am the oldest, I have had training, and it seems to me I ought to have the chance."

In the end, Olive had her way. Aunt Emily herself was not consulted.

The doctor often talked with Aunt Emily. He watched her closely. He also watched Olive as she went about her work. She did not neglect the duties that came to her, that was evident; the room was spotlessly clean, and always sunny. The bed linens were immaculate. Aunt Emily herself seemed to be receiving every attention. But the doctor was not satisfied. In spite of good food, much rest, entire quiet and relaxation, Aunt Emily did not improve. What was the matter?

He watched Olive's attitude toward her aunt, and observed every look and every movement. Finally he was convinced that he knew what was wrong. When he left that day, he motioned to Olive to follow him. "My dear," he said, kindly but very firmly, "I want you to let your sister take your place here for a few days—the little plump one—what is her name? Yes, Violet, I want you to turn everything over to Violet for a while. A change is sometimes good for a patient."

"Why, Doctor, have I been doing so badly?"

"No, you have worked hard, you have kept the room perfectly clean, you have read, you have served meals. But now let the other one try it."

Olive was hurt. "I am sure Aunt Emily has no reason to complain. I have given her every possible attention."

Olive was banished, and Violet was sent in to her aunt, to take her sister's place. And again the doctor watched. It must be

confessed that the room was a little less orderly. For instance, the long muslin curtains were generally drawn back away from the window, and thrust over the corner of a picture. The doctor's eye rested upon them more than once. Aunt Emily explained promptly: "I like to feel the breeze coming in full and strong, and I do not like to see curtains blowing back and forth. And I do like to give the sunshine a broad sweep at me. It wrinkles the curtains badly, and looks untidy, but I wanted it, and of course Violet fixed them for me." The doctor smiled.

Nor was the bed always immaculate these days. The white coverlet was often wrinkled. The doctor's eyes rested upon it. "Violet and I have such nice long talks," explained Aunt Emily. "I like her to sit on the bed near me. It messes the coverlet, but it is great fun." And again the doctor smiled.

One afternoon he dropped in unexpectedly. The room and the patient were unpresentable, to say the least. A comb and brush lay on the white coverlet. The two were eating apples, and two unsightly cores were on the dresser tray. Aunt Emily only laughed at the doctor's expression, "Violet was just ready to brush my hair, when I happened to think of the apples. But never mind, Doctor, she'll brush it nicely when you're gone."

"Did you forget your medicine at two o'clock?"

"I forgot all about it," declared Aunt Emily, laughing again.

"I remembered it," said Violet, "but I remembered you said it was better for one to be interested and amused than to take countless bottles of medicine, so I just brought in the apples."

"Quite right," said the doctor. Then he added, "As I explained to you, medicine is the least essential part of your aunt's treatment. If any one accuses you of neglecting your patient, Miss Violet, send him to me."

"A cheerful heart doeth good like a medicine," said Aunt Emily, softly, turning fond eyes upon her young niece.

"Exactly," answered the doctor.—*Young People's Weekly.*

SUGAR DRUNKARDS

MOST persons know that alcohol comes from the fermentation of sugar. Few seem to realize, however, that this form of fermentation may take place inside the human body as well as outside of it. Experiments prove that this is not infrequently the case. It follows that when this does occur the patient may be as truly drunk as though he or she had been drinking at a bar.

Naturally the degree of drunkenness is never so large as in the case of the drinker of alcoholic beverages. Nevertheless, it is important to bear in mind another point, which is the fact that experience proves, that the very worst form of drinking is that in which the system is constantly kept under the influence of a little alcohol each day.

Now, the fact is that the use of sugar in America has advanced far beyond the bounds of all reason. Sugar is cheap, for one thing, and candy manufacturers with their alluring advertisements are numerous. Tea, coffee, cocoa, and the various beverages known as "soda" add to the intake of sugar. The results are that the American people use far more sugar than people of any other nationality.

Sugar is a food and an excellent one. It is relatively easy to digest, is easily absorbed, and furnishes more heat and energy than any other food element except fat. Like all the other food elements, there are limits to the amount of it that can be eaten with safety, and these limits vary with each individual. Sugar creates heat and energy; it does not build muscle. To make use of it in the system there must be a need for it. This means that the one who uses it most should be doing a good deal of muscular work or be needing an extra amount of heat

production, as in winter, for example. The facts are, on the contrary, that those who use the most sugar, at least the eaters of much of the candy sold in such enormous quantities, are exactly the ones who need it least, girls and women who do no hard muscular labour. Sugar indigestion, followed by fermentation, and in many cases the formation of alcohol in the system, is exceedingly common with this class.

While it would be folly to say that the sugar habit is as bad as the liquor habit, it is certainly true that in many cases the results differ only in degree, as has been said. Dietitians hold that the average daily amount of sugar necessary is not to exceed four ounces, a quarter of a pound. Many a girl will eat two or three times this amount in an evening in various forms of candy, and perhaps repeat it day after day. Is it any wonder, then, that intestinal fermentation is one of the most common symptoms with which the doctor has to deal? Even with hard muscular work not more than eight ounces of sugar a day can be eaten with safety.

Beware of being a sugar drunkard, then, as the habit is almost as hard to break off as is the drinking of alcoholics.—*E. F. Robinson, M. D., in Healthy Home.*

SWOLLEN GLANDS

THE lymphatic glands are present in greatest numbers in the neck, the axilla, the groin, along the bronchial tubes, and in the mesentery.

In health they are so small as not to be noticeable or palpable, and are situated along the course of the lymph vessels.

These vessels take up and carry a fluid, watery in appearance, which exudes from the small blood-vessels and which bathes the individual body-cells with nutrient material and carries off poisons from these cells. This watery fluid is called lymph. It is finally collected into a large duct which empties into the subclavian vein.

The lymphatic glands situated along the lymph vessels are there for the purpose of filtering or straining from the lymph, substances detrimental to the health of the body, thus preventing them from entering the blood. Disease-producing germs in great variety are entrapped in the lymphatic glands. Sometimes the germs are so numerous or so virulent as to cause great swelling and inflammation of these glands, and sometimes suppuration and abscess-formation take place. For instance, what is commonly termed blood poisoning in the hand may, if neglected, sometimes cause inflammation in the glands of the arm pit, the infection travelling up the lymph vessels to the axillary glands. In many of the acute infectious fevers, enlargement of the lymphatic glands in various parts of the body takes place, and with the departure of the disease the glands nearly always apparently return to their normal dimensions. In some of the more chronic diseases the glands remain enlarged and may continue to increase in size, so making their removal advisable.

There is, in all probability, in all cases of glandular enlargements some source of infection. When possible, this source of the trouble should be ascertained and the difficulty remedied. But whatever the avenue of infection, the natural forces which the body has for dealing with disease should be strengthened by hygienic methods, as bathing, fresh air, and a pure, nutritious diet.

In the chronic varieties, in the case of children, alternate hot and cold applications may be tried, and the swollen part may be painted with tincture of iodine. It is well, however, to consult a surgeon early. This is especially advisable for individuals of more mature years, when enlarged glands may be due to malignant trouble.

J. J. BELL, M.D.

TAKE time to teach the toddling tot to be kind to all animals; and then the mature man will never be neglectful of, nor cruel to them.

A Few Suggestions on the Preparation of Food for the Sick

By George E. Cornforth

Perhaps it is too obvious to need mentioning that the diet of the sick should consist of articles which will impose only a small tax on the digestive powers, but, at the same time, they should not be lacking in nourishment; and they should be made as appetizing and attractive as possible.

Beef teas, broths, and extracts, have been accepted as standard articles of diet for feeding the sick, under the impression that they are concentrated nourishment in a very easily assimilated form. Perhaps the name *extract* is to blame for this mistaken idea, because it suggests that the extract contains all the nourishment of the meat, or at least the most important part of it, in a concentrated form. The fact is, however, that these preparations do not in any sense contain the nutritive properties of the meat. They contain the *flavouring matter* of the meat, and therefore, because they taste as if they contained the nourishment, they deceive the user into believing that they do. They are also the stimulating part of the meat, and therefore they cause one who partakes of them to *feel* stronger. Did you ever hear of anything else that makes a man feel stronger when he is not? The Bible says, "Wine is a mocker;" so is beef broth, or chicken broth for that matter; "and whosoever is deceived thereby is not wise."

A glass of apple juice contains several times more nourishment than does a glass of beef tea. Dr. Franklin White, of Harvard University, says. "I always feel that it is pathetic to see people buying beef extracts for invalid foods, knowing, as I do, that they cost so much and contain so little of any value. Twenty-five cents' worth of beef juice will yield only six parts of food value to the body, while twenty-five cents' worth of eggs will yield seven hundred parts; and twenty-five cents' worth of milk one thousand parts of real value to the system. It takes from fifteen to thirty glasses of beef juice to equal the food value to the body of one glass of good milk."

The fact is the meat fibre is the nourishing part of meat, and that cannot be dissolved in water by soaking or cooking. That which is dissolved is the substances which are the waste products of the life processes of the animal, which would have been eliminated by the excretory organs of the animal if it had lived. I often tell people that if they are going to eat meat at all, it would be well for them to make a good strong soup out of the meat and throw it away, and then eat the meat, which would be practically as nourishing as before the broth was made from it.

The only redeeming feature of beef tea, the only reason why it is of any value in the diet of the sick, is the fact that it is stimulating to the digestive organs, and sometimes to the appetite of the patient,—strange that such a disgusting concoction should ever stimulate appetite,—and therefore may be the means of getting the patient to take something which *is* nourishing. But beef tea itself should never be depended on for nourishment. And it is well to remember that the taking of it introduces into the sys-

tem waste products which must be eliminated, and in that way it puts an extra burden upon the eliminative organs of the patient; while in sickness, especially, it should be the aim to put as little burden as possible on all the vital organs of the body.

There are on the market vegetable extracts, put up in the same form as beef extracts, and bouillon cubes, which so closely resemble meat extracts in chemical composition and flavour as to deceive one if he does not know beforehand that he is eating a vegetable product; but they are free from the objections to beef extracts and broths, and make most excellent substitutes for them.

It is an interesting fact that fruit juices and *vegetable* broths are also stimulating to the digestive organs, and are an antidote for such waste products as are contained in beef tea, containing substances which help the body to throw off those wastes. And at the same time they contain real nourishment. The mineral elements contained in fruit juices and vegetable broths may be called "nature's medicines," for it is being found that it is a lack of these which allows the body to succumb to many illnesses. And, in addition, the nourishment contained in fruit juices is in a predigested form. While many man-made foods are falsely called "predigested," fruit juices are real predigested foods. Fruit juices also have germicidal properties. There are few, if any, disease germs that can live in pure lemon juice. Apple juice will destroy the germs of Asiatic cholera. Blueberry juice will destroy the germs of typhoid fever. Other valuable juices are orange juice, grape juice, and pineapple juice. All these facts make fruit juices the food par excellence for the sick.

The water in which almost any vegetable has been boiled, although commonly thought to be unfit for food and only fit to be thrown down the drain makes a more wholesome broth than any kind of meat broth.

Hot buttered toast is another article which is among the first to be thought of to offer to a sick person. But a hot, thick slice of bread with butter soaked into it, though many enjoy its taste, and the eating of it requires little effort, is not adapted to the stomach of a sick person; neither are jellies and many other dainties that are offered them. Instead of hot buttered toast, serve dainty thin slices of bread thoroughly dried, and toasted to a delicate brown throughout the slice; and fresh fruit or fruit juices may well replace the jelly. The toast may be dipped in hot cream, or even simply in hot water, if desired. Then a nice hot fruit sauce served over it makes an enjoyable fruit toast, which is wholesome and nutritious. I suppose the thing which causes such undesirable articles to be offered to the sick is a feeling of pity for them, and a desire to give them something which will taste a little better than the food they get when they are well. But we should think rather of giving them something that will really be easily digested and nutritious. At the same time the desires and tastes of the sick one should not be ignored. In fact tact should be used in discovering the likes of the patient without asking him, and then effort should be made to suit the food to the patient's taste as far as is consistent with supplying wholesome food and that which is suited to his condition. Each meal should be as much of a surprise as possible in being more attractive and palatable than the patient expects. The patient should not be where the odour of the cooking food can reach him.

Hot foods should be *hot* when they reach the patient. To accomplish this the dishes in which they are served should be heated. Cold foods should be *cold*.

Gruels, when properly made, are easily digested and nutritious, but not when made by simply stirring some cereal into boiling water. The cereal from which gruel is made should be cooked in a double boiler as thoroughly as if it were to be eaten as a cereal. It should then be thinned with hot milk or cream or water, strained, to be sure it contains no lumps, seasoned with salt, and served

hot. A gruel should be of such consistency as to have a rich taste, not thick like gravy, nor thin and watery.

Scrupulous neatness and care are required in cooking and serving food to the sick. Some seemingly trivial, careless act may be sufficient to take away the little appetite a patient may have. The tray on which food is served should be covered with a clean white napkin, and the silverware should be bright. If there are in the home dainty china and pretty little glass dishes, here is place to put them to good service. Anything which suggests heaviness is fatiguing to the sick. If possible, broth should be served in a thin, light cup, partly filled; milk and fruit juices in a thin, light glass: the bread should be thinly sliced, the toast should be thin and crisp, crackers freshly toasted, the fresh fruit cut and arranged in some new and unexpected way. A straw placed in an iced drink may make it more palatable. A sprig of leaves, a flower, a quotation from Scripture, or a pretty verse may bring pleasure. While the patient may be too sick to mention or apparently to notice such little services, they will, no doubt, in almost every case bring a bit of brightness to him, and help to break the monotony of his long and weary day.

Specific Directions

Some foods that may be served to the sick are: Fruit juices; vegetable broths; dal broths; milk and milk preparations; malted milk; eggs prepared in various ways; gruels; toasts; fresh, crisp, tender lettuce; baked potato.

One of the most valuable of fruit juices, because always obtainable, is orange juice. It is palatable without the addition of sugar. Grape juice is good, but unless it is pressed from fresh grapes it repuires the addition of sugar to make it palatable. Apple juice freshly pressed from clean, sound apples is valuable and palatable. Blueberry juice is an excellent drink. This may be the juice drained from canned blueberries, or it may be prepared by stewing fresh blueberries in scarcely enough water to cover them, draining in a jelly bag, and sweetening slightly. Lemonade made with two lemons to three cups of water, and sugar to sweeten slightly, makes a good drink.

Temperance

Alcohol and the Brain

THE brain is the great power control centre for the whole body. Not only does it evoke energy in all parts of the system, but it also regulates bodily functions and activities so as to enable the organs to do their work efficiently. Recent discoveries have revealed the fact that a large portion of the surface of the brain is divided into compartments or areas for different duties such as control of sight, of hearing, of the legs, arms, etc. Further research has shown that messages are transmitted from the brain to the various organs at the astounding speed of over one hundred feet per second—equivalent to about sixty miles an hour. Moreover, the brain not only sends out impulses to the muscles for the production of movement, but receives and records the sensations which are constantly coming in from the sense-organs, as eyes, ears, skin. This ability which the brain possesses to record impressions constitutes the basis of what we usually call "memory."

One of the special sections of the brain called the "cerebellum," or small brain, has the function of co-ordinating the sense im-

pressions received from the action of the muscles, so as to enable the person to maintain an erect posture, or perform the more complex movements of walking.

Protected by the skin, the bones of the skull, and two interior membranes, this intricate and delicate piece of machinery is rendered immune from all ordinary external damage. How then can any harm come to the brain save by some blow, or piercing of the skull? Only by some internal force acting upon it. Such a force is the blood. The blood is the nourisher of the brain and is constantly coursing through the myriads of minute cells in the covering membranes, providing the nourishment that is essential for the vitality of the nerve fibres and for the evolution of the stream of energy which is constantly rising from the nerve centres. Should there be a lack of blood the brain functions cease and the individual becomes faint, unconscious, and unless the defect is quickly remedied, he will die. If on the other hand there should be too copious a supply of blood, a vessel may break, and flood some of the nerve centres and cause the paralysis of a large part of the body. Should the blood be diseased or contain any poison, the noxious substance will find a lodgment amid the convolutions of the brain and grave disturbances will ensue. Nerve fibres will be destroyed, convulsive movements will take place in parts of the body corresponding to the area irritated on the surface of the brain, unreasonable errors will be made by the individual, and he may be, in due course, consigned to a hospital, a mad house, or even a grave.

Among the poisons which are frequently taken into the system and which have such distressing effects on the brain is alcohol. This travels through the stomach and part of the intestines, and is absorbed into the blood before it can be conveyed to the brain—a journey sometimes of nearly *thirty* feet. The distance that it travels, however, has little or no effect on its deadly influence over the delicate structures of the "control station."

The slow poisoning by alcohol of the higher cerebral structures, revealed first by loss of energy, lessened capacity for business and diminished attention to detail, is rarely attributed to the real cause. A sufferer from alcoholic poisoning will complain of "headaches" through too much reading, "tiredness" through overwork, "the blues" through someone's unkindness, and never think to put all of them down to his own folly in consuming alcohol.

Should a large quantity of alcohol be taken within a short space of time the cerebral control will become paralysed. The person will, for a short time, appear "conversational," seeming to himself and to any friend who may be in the same stage of poisoning, to be "brilliant," whereas his thoughts are really superficial. This stage will develop into noisiness and emotional excitement as the brain comes more and more under the power of the drug. The next change will be the commencement of narcosis, then dullness and heaviness. If the consumption of alcohol is continued, unconsciousness may supervene, and brain-control over respiration and circulation may be effected and death ensue.

Another effect that alcohol has on the brain is to cause a reversion to the inabilities of childhood. Walking is a complex movement requiring much practice and necessitating the pouring out from the brain of constant and varied messages in order to direct with unfailing accuracy the frequently altering positions of the legs and feet. Inability to control these completely is characteristic of early childhood. Should the cerebellum and allied centres be exhausted by illness or starvation, or drugged with alcohol, a reversion to such a state is brought about. This explains why consumers of alcohol sometimes find it difficult to walk home in a respectable manner and maintain their equilibrium.

Yet another most important function of the brain is interfered with by alcohol, and

that is the power to retain sense-impressions. Memory is one of the later acquisitions of the mind, and according to the rule that the latest and most recent faculties of the mind are the first to suffer under the stress of poisoning, illness, or advancing age, it is but natural that alcohol should cause this early failure. The untruthfulness and inexactitude of those who take alcohol is frequently due not so much to a wilful determination to lie, as to a vague inability to recall accurately promises, facts, and events, for the very reason that alcohol has prevented the brain-cells, upon the activity of which memory depends, from recording exact impressions.

Thus it is evident that alcohol, whether taken in large or small quantities has an injurious effect on the power and activity of the most important organ of the body. It interrupts the control of the muscles, hinders the recording of vivid impressions, prevents clear thinking, brings headaches as well as heartaches, and makes men inaccurate and unreliable.—*A. S. M. in Present Truth.*

TEMPERANCE DRINKS

ASIDE from an occasional glass of freshly-made lemonade, or similar fruit drinks prepared in the home from the juices of fresh fruits, most, if not all, of the so-called temperance drinks contain a varying percentage of alcohol and are otherwise more or less harmful. Ginger ale and beer, for example, exert a distinctly irritating effect upon the delicate lining membrane of the stomach which ultimately may lead to gastric catarrh or some other form of stomach disorder. There is only one ideal temperance drink and that is "Adam's Ale," fresh from the tap or the spring. Pure water is both the safest drink and the best means of quenching the thirst. Consider for a moment the millions of pounds wasted annually on manufactured beverages of one discription or another. Surely, there would be little hardship in denying oneself these drinks and the saving would be a very considerable one on the part of many temperance people.—

Good Health—English.

PHYSICIANS AGAINST ALCOHOL

AT the annual session of the Ohio State Medical Association twenty-three physicians organized an association for the study of alcohol and other narcotics. The following quotations from remarks made at the opening meeting of the new association show how medical opinion is swinging around on the subject of alcohol:—

"In the past the medical profession made a mistake in telling patients that alcohol was a valuable medicine. We were wrong, and are responsible for a large part of drinking. Alcohol is but a narcotic, a sleep-producing drug. The profession has not informed the public of that fact, and it is our duty to do so."

"The true hope of temperance lies in awakening the big firms to a realization of the economic conditions and the economic waste resulting from alcohol. Doctors have often been quoted as favouring the use of alcohol. We must correct that impression."

"For years we thought that typhoid cases needed alcoholic stimulants, but we know better now. After every operation it was thought that in desperate cases whisky was the proper stimulant. In the last ten years I have not used whisky in a surgical case."

"The true solution of the liquor evil will come when all employers realize that industrial efficiency is not promoted by the use of alcohol."

"I have reduced the prescribing of alcohol to almost nothing."

"If there were no saloons in Cincinnati, in two years a hospital half the size of the new city hospital would be too large for your city's needs. It is liquor that fills the hospitals."

"There is no doubt, from a scientific standpoint, that alcohol is injurious."—*Health and Temperance.*

PROHIBIT IMPORTS

"THE Westminster Gazette" recently published a letter recommending the prohibition of certain unnecessary imports from abroad from which we quote the following paragraph :—

"We are constantly told by medical authorities that tea, coffee, tobacco, and alcohol are not only unnecessary to human life, but positively harmful. Tea, coffee, tobacco, and wine come exclusively from abroad and have to be paid for by the export of goods or in gold. If economy in the consumption of things coming from abroad is so vitally necessary, why does not the Government safeguard the health and credit of the nation by prohibiting the import of these commodities? Without such prohibition it will, I think, be found impossible to make the individual realize that his cup of tea or coffee, glass of wine, pipe or cigarette, is ruining the nation."

Money wasted on these articles is not only an economical loss, but also means disastrous effects upon the health and the efficiency of those who indulge. The writer goes on to say, if such prohibition is impossible or inadvisable, "why not put on a very high import duty, so that those who do not choose to give up harmful luxuries should, at any rate, contribute in larger proportion to the cost of the war?" Why not?—*Good Health—English.*

NOT PAID IN FULL

Scene—Municipal Court, Chicago. Miss Elizabeth Nauskauskis on the stand.

Judge—"Were you ever injured before?"

Elizabeth—"Yes, in the knee."

Judge—"Did you fully recover?"

Elizabeth—"No, only five dollars."—*Boston Transcript.*

BOTH CHARGED

A LITTLE girl, brushing her hair, found that it "crackled," and asked her mother why it did.

"Why, dear, you have electricity in your hair," explained the mother.

"Isn't that funny?" commented the little one. "I have electricity in my hair, and grandmother has gas in her stomach."

WHY HE KNEW

A CHRISTIAN SCIENTIST found a small boy sitting under an apple-tree doubled up with pain.

"I ate some green apples," moaned the boy, "and how I do ache."

"You don't ache," answered the C. S., "you only think so."

"That's all right," said the boy; "you may think so, but I've got inside information."—*London Opinion.*

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TO EXTERMINATE LICE

After a considerable amount of experimentation, Frankel, director of the chemical laboratories of the Austrian Cancer Research Society, announces that methylphenylether is a safe remedy, killing lice within ten minutes, even without direct contact, while it does not irritate the skin. This substance is also known as anisol.

TURPENTINE KILLS LICE AND OTHER VERMIN

A German authority says that an experience of seventeen years has demonstrated that purified turpentine oil in spray kills lice and their eggs and all kinds of vermin. Purified turpentine does not stain the clothing nor irritate the skin, and is not toxic to man if there is sufficient ventilation. It is cheap, and is not so inflammable as benzine. It may be sprayed over the hair, after which a flannel cloth dipped in turpentine may be tied over the head with a towel. In the morning there will be no live vermin. An ointment may be made containing from fifty to sixty-five per cent of turpentine, and may also be used to advantage as a vermin destroyer.

SULPHUR REPELS VERMIN

It had long been observed that workers in the sulphur mines in Italy did not contract malaria, though the disease was rampant in the vicinity. Later it was observed that the reason for this immunity was that the sulphur fumes drove away the mosquitoes. Advantage has been taken of this fact by dusting the underclothing of soldiers with precipitated sulphur. In contact with the perspiration, this forms minute quantities of sulphureted hydrogen, which seems to have the property of driving off all vermin. Sulphur, by driving off mosquitoes, fleas, and lice, should be a reliable protection against three dread diseases—malaria, bubonic plague, and typhus fever. It requires a period of twenty-four hours for the sulphur to develop sufficient sulphureted hydrogen to be effective.

FLIES, DIRT, AND INFANT DIARRHEA

The Bureau of Public Health and Hygiene of the New York Association for Improving the Condition of the Poor, has been making an intensive study of the effect of flies and dirt upon the prevalence of diarrheal disease among infants. Nurses have carefully recorded houses in the districts under observation, as "clean" or "dirty," and as "protected" or "unprotected" from flies. The result of a large number of careful observations made during a period of two years gives a fly factor of 1.9 (which means that nearly twice as large a proportion of babies have diarrhea in houses where there are flies as do in houses where there are no flies); a dirt factor of 1.8 (which means that diarrhea is nearly twice as common in dirty houses as in clean houses); and a fly-and-dirt factor of 2.4 (which means that there are nearly two and one-half times as many diarrheal cases in houses both dirty and fly-ridden as in houses which are clean and free from flies). As diarrhea is the most common route to the baby's burying ground, the above-mentioned facts are significant.

A BEAUTY DIET

Lucrezia Bori, famed for her beauty as well as for her voice, is an enthusiastic believer in a vegetarian diet as a beautifier. In a recent article, "Vegetables as a Beauty Diet," she said: "You may miss meat and pastries at first, but you will soon find that to be a vegetarian is anything but unpleasant. Before long you will prefer a tempting salad to any piece of meat placed before you." She believes that oranges and grapefruit are always an aid to beauty, but says, "We have these things the year round, and I want you to take advantage of the summer vegetables and fruits; there is nothing which equals them as a beautifier." She expresses the wish that every reader of her article shall give fruit and vegetables a fair trial this summer. "A smooth, transparent, healthy complexion, free from blemishes, will be the result."

WORK OF ROCKEFELLER FOUNDATION IN CHINA

The Rockefeller Foundation has determined to undertake the improvement of medical and hospital conditions in China, the work being placed under the China Medical Board, organized for this purpose. Aid will be given to the medical schools, which at present are poorly equipped for their work, and the staffs will be strengthened in the hospitals. Chinese medical students will also be helped to continue their istudiesn other countries.

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