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COLD AIR AS A TONIC.

J. H. KELLOGG, M. D.

ADVERTISEMENTS of "the best tonic" often appear in the newspapers, but the best tonic in the world, in my opinion, is cold, frosty air,— zero air, if you please. There is nothing like it.

A great many people make the mistake at this time of year, of running away from Jack Frost. There is a regular exodus from our northern cities, particularly New England cities, every winter. Multitudes annually migrate to the South. There seems to be a sort of fear of cold air, of frosts, of zero temperature. I suppose it is born of the fact that we are growing weaker, that the race is deteriorating, that we have less vital resistance. We are becoming more and more accustomed to luxurious habits, to enervating customs.

This rushing away from winter weather is, however, the greatest possible mistake. The cold winter is the very thing that gives the people who live in the North the advantage over those who live in the South. It is the inhabitants of the temperate zones, the people who live in the colder countries, like England, the United States, and Canada, who rule the world; and the reason why they rule the world is because they have more stamina, more energy, more vigor, more vitality. It is not because they eat so much beefsteak, but because they have the advantage of a good strong tonic, at least once a year.

In the autumn, when the frosts come, the trees begin to prepare for winter. The bark becomes thicker; the sap does not circulate so rapidly; the tree puts on a winter coat. It is preparing to protect itself from the winter winds and cold. The same thing is true of horses, cows, sheep, dogs, and other animals that live in northern regions. In the autumn their hair or wool grows more rapidly, and becomes longer and thicker. But take a sheep from the northern climate to India or Africa, and the wool of that sheep will become simply hair. Take a sheep from the torrid zone to the North, and in a few generations the descendants of that sheep will get thick wool in the place of silken hair.

It is exactly so with human beings. When the cold weather comes on in the autumn, nature gives us a winter constitution. If the skin does not become thicker, it does become more active and vigorous. A thousand years ago our ancestors roamed about the forests of ancient Britain clad only in paint, although exposed to a cold and inclement climate; today the descendants of this hardy race who live in the British Isles lead the whole world in physical stamina. One reason for this lies in the fact that they have always had the benefit derived from battling with the cold. Thousands of persons die of too much coddling where one dies of exposure. Exposure would not be

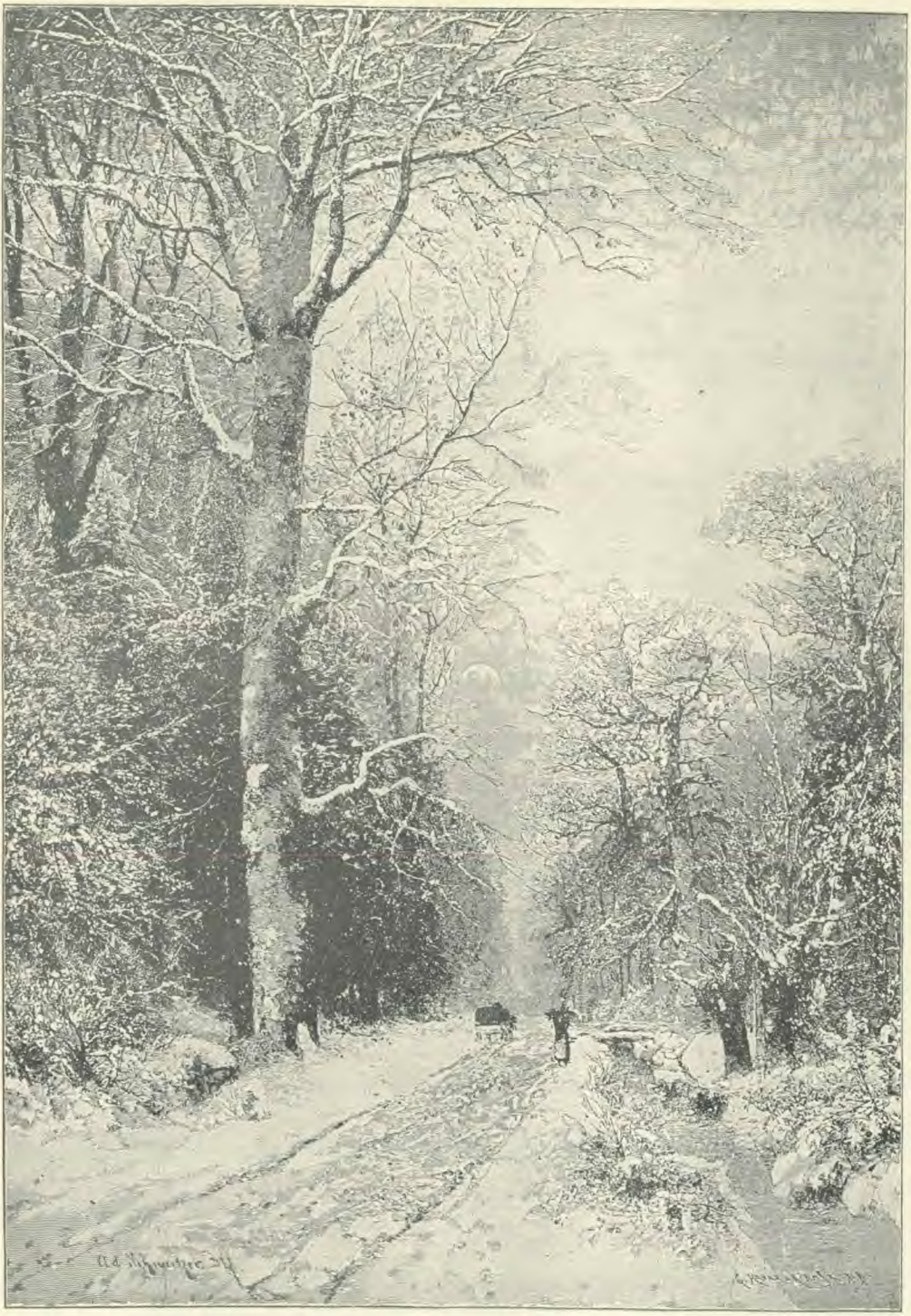
exposure were it not for the coddling beforehand, which breaks down the bodily vigor.

Cold weather supplies a natural exhilaration far superior to the stimulation caused by any possible artificial agent. It arouses every energy of the body. The vital fires burn brighter, just as do the fires on the hearth. The little folks, as they sit about the hearth and look into the fire, exclaim, "Winter has come, for the fire burns brighter." The fire does burn brighter, because there is more oxygen brought in contact with the burning wood. The air is richer in oxygen, and denser.

Notice the difference between zero air and air at, say, a hundred degrees above zero. One fifth, or twenty per cent., of the air is oxygen. It is not quite one fifth, but we will call it that. Now suppose that in one thousand cubic feet of air, one-fifth oxygen, there are two hundred cubic feet of oxygen. That is true at 100°. We will lower the temperature of that air. Air increases in volume as it rises in temperature, and for every degree that it rises in temperature it increases one four hundred and ninetieth of its volume, that is, about one five hundredth. Then in one hundred degrees it will increase one hundred five hundredths in volume (or decrease, as the case may be), which will be one fifth. Hence by lowering the temperature of this air to zero, the amount of oxygen which it contains will be one fifth greater. But we have a decrease in volume, and the thousand cubic feet of air will now be eight hundred cubic feet, so there will be two hundred cubic feet of oxygen in this eight hundred cubic feet of air; but there will be also one fourth as much more, because there will be two hundred cubic feet of air more, so we shall have fifty cubic feet of oxygen more; or, in other words, when we reduce this thousand cubic feet of air to zero, we shall have two hundred and fifty cubic feet of oxygen, being twenty-five per cent. more oxygen than at 100°. Consequently, when we take in a breath of twenty-five cubic inches, as we ordinarily breathe, we breathe one fourth more oxygen at zero than when the air is at 100°, and if we breathe the air at 50°, we get one eighth more oxygen than at 100°.

The oxygen is the fire-supporting element of the air. If there were no oxygen in the air, the fire could not burn; and if there were no oxygen in the air, we should die: we could not breathe at all. The intensity and the activity of our life depend upon the amount of oxygen in our bodies, and the amount we can get in. Our bodies store up oxygen. The amount of oxygen stored up in our cells and tissues is gradually consumed from day to day in the work done through the working hours, but during the night it is stored up again. In the summer it is hard for us to get oxygen enough stored up during the night to make up for what we lose during the day. But in the winter the cold air is denser, and we can store up more oxygen; as we get a larger supply of oxygen, the tide of life rises, we are more active, our nerves are keener and more thoroughly alive, our wits are sharper, and our muscles are more vigorous. We all know how it feels to go out walking on a keen, snappy morning; we feel as if we wanted to run; there is something exhilarating in the air. One comes back with his eyes sparkling and his cheeks rosy; he looks more thoroughly alive than before he went out.

If we have the privilege of living in such an atmosphere for the three winter months, it raises us to a higher level than the one to which we have descended during the three months of summer. Consequently, in the spring, if we have lived rightly during the winter instead of shut-



NATURE'S TONIC.

ting ourselves up in unventilated rooms, and gormandizing with flesh foods, turkey dinners, and that sort of thing, we ought to be stronger and more vigorous for the tonic of the winter air. Unfortunately, however, a great many people come out in the spring in a very miserable state of mind and body; then they go to the doctor, and ask him to give them something for spring biliousness.

Spring biliousness is simply the natural consequence of winter gormandizing and winter idleness and hibernating. A great many people shut themselves up in the winter just as the bear does. The bear goes into a hollow tree, and the man goes into a hollow house. The bear protects himself as thoroughly as he can from the cold. Many animals that burrow in the ground shut themselves up in little holes for the winter, far away from the air, and sometimes the opening is all stopped up with rubbish and snow. They live there all winter, getting just enough air barely to keep them alive. A great many people make the mistake of doing the same thing. I have known people to go so far as actually to plug up the keyholes of the doors and to stop every little knot-hole so as to make sure that there could not get in a bit of air.

But if we had to pay a price for air,— so much a barrel, or so much a hogshead, or so much a cubic mile,— we should appreciate it more, and care a great deal more to get it, and breathe a great deal more of it.

An old sea-captain said that at one time the water supply got short, and he had to put everybody on allowance. The allowance was two quarts a day. Everybody smiled at the idea of having two quarts of water to drink a day, and one man said he could not drink half that. But the captain said that before noon the very man who had smiled at such a liberal allowance, said, "Captain Bates, would you be so kind as to give me a drink out of your canteen?" He had swallowed his large allowance, and wanted more. If he had not thought he was limited, he would not have drunk half so much. If we could put a price on air, and make it worth its weight in gold,— and it is worth its weight in gold, and a great deal more, — and if the people only believed that, they would breathe a great deal more of it. It is so cheap that we disregard it, and do not put a proper estimate on its worth. Here is this oxygen, the life-giving element of the air, the thing that stirs up the vital fires, and supports the vital processes of the body: and there are people this very winter actually barricading themselves against it, while it is sighing and roaring and even moaning for a chance to get in and do them good.

We people who live in the North get the benefit of the winter constitution that nature puts on; it lifts us up out of the low condition into which we fall during the hot season of the year, when we are exposed to germs, when we are breathing millions of them at every breath, taking them into our lungs and bodies, and exposing ourselves to them constantly in air and water. Think what a blessing it is to be able to breathe absolutely pure air three or four months in the year! Look at the landscape out of doors, and see how pure it is. The whole ground is covered with snow that is so pure that it is put before us as the poetic emblem of absolute purity— "as white as the snow." And this snow covers up all the germs; the ground is frozen; all the decaying things are frozen; all the germ-producing processes are paralyzed; all the filth and dust that go to contaminate the summer air are covered up by the snow — buried under the pure snow; so the miles and miles of air that come sometimes in little tastes of wind and blizzard and cyclone are absolutely pure.

The people who live in a southern climate are obliged to take germs all the year round, for a steady diet. Every little gust of wind, every little breeze, stirs up germs in the dust, and the air is swarming with them. But here we have a wonderful blessing in the clear, crisp, cold, pure, hyperoxygenated, exhilarating air of winter. Such air has no germs in it. Breathed with proper precautions, it has life, vigor, and vital renovation in it. How the heart beats under the stimulus of this life-giving oxygen! How the pulse bounds! How the thoughts fly! How imagination runs! How the busy workers in liver, stomach, lungs, brain, muscles, nerves, in every fiber, every gland, every nook and corner of the vital domain, spring to their tasks! Life has twice the efficiency under the healthfully stimulating influence of the pure, cold atmosphere of the northern winter, than is possible in the damp, heavy atmosphere of the malarious South. But to secure the benefit of nature's best tonic, it is necessary to go out of doors and breathe this cold air, and to let some of it come into the house to work out its purifying and beneficent influences. Make a friend of the cold, and the cold will be a friend to you, bringing you new strength and vitality, courage and happiness.

THE INFLUENCE OF DIET, EXERCISE, AND BATHS UPON MENTAL DEVELOPMENT.

JAY W. SEAVER, M. D.

ALL growth seems to be dependent upon certain well-defined factors, that are generally summed up in the word "environment," and certain other influences, less clearly understood, that we call heredity. The latter may be considered as a force over which the individual has little control, and yet that reacts upon him with sufficient power to transmit racial types of both mind and body through indefinite periods. The former constitute the changeable forces that may be modified to a greater or less extent, and that are primarily connected with the functions of nutrition, elimination, and intellection.

At this period of the year a consideration of mental growth is specially appropriate, since school life is occupying so large a part of the activity of every community, and the question of how to make the school most efficient is the foremost one in the minds of all parents. The one element of mental poise and activity has been predetermined by the quality of ancestors transmitted to the child, but how to make voluntarily variable influences conduce to the finest product is the problem to be solved.

The organ of the mind is the brain, and the nerves are its prolongations. Like every other organ of the body, its development will depend on its nutrition and its use or excitation. Without appropriate nutrition, growth must be imperfect. Either all parts of the organ will be impeded in their progress toward full normal size, or the quality of the structure will be impaired, or some portion of it will be arrested in its growth, and revert to a less highly organized form of tissue. All these forms of degeneration may be seen in external organs in cases of severe wasting diseases, like typhoid fever.

Use, or functional activity, bears quite as close a relation to growth as does nutrition; and the nerve cell, quite as truly

as the muscle cell, must have its protoplasm renewed by the consumption of the material in activity and the renewal of it from the nutrient current. Anatomists have noted that in the cases of subjects that had lost a limb, certain brain areas that had been thrown out of use had undergone atrophy, or degeneration, until they no longer contained characteristic nerve cells; and it is a common experience to find the nerves unable to control a part properly when their function has been suspended for even a short time, as for two or three weeks.

For convenience in study, the growth of the organ of the mind may be divided into three periods of seven or eight years each, according to the sex of the individual, the female developing in all respects somewhat faster than the male. At birth the brain constitutes about one seventh of the total weight, and at the eighth year it has reached within a few ounces of its complete size, while the other tissues are only one third grown, the brain at maturity being only about one forty-second of the total weight. This period, then, is one when the nervous system is being prepared to control or direct the body, and its function is largely concerned in trophic processes and in getting control of the motor and sensory organs. The child may be said to be getting acquainted with itself. It is learning how to use its own organs. The soft tissues have not increased in proportion to bone growth during this period, and there is little muscular strength. The systemic demand has been for soft foods, with plenty of phosphorized materials in them.

At the beginning of the second period the physical activity demands more nutriment for the organs of locomotion, for they must increase faster as the child attempts acquaintance with the outside world. The mind becomes inquisitive, and the body must be its servant. The sensory organs become accurate in their work, and each new thing must be tested by every sense organ. These sense impressions are the data for future mental review, which constitutes thought. The skin is the organ of that important tactile sense that at this period tells us most about things, and seems to have the most direct communication with the brain; and hence its care should be such as to make its impressions the most complete and natural. Its activity should be promoted in every way, and the bath should be used as a stimulant of the nerve activity as well as for its esthetic value. During this period there is a marked acceleration in the rate of growth of bony tissue, and at the eleventh year the girl outstrips the boy of the same age in height and weight, and maintains this superiority for three years, when the boy passes her and remains taller and heavier during the remainder of life. The nutrient demand of this second period is large; the appetite of the growing boy is proverbial. It reduces everything edible and many things that are not edible, from the green apple to mince pie. The importance of diet is apparent when we consider the demands made upon nutrition.

During the third period the body becomes mature, "rounds out," and reaches its limit of healthful size and activity. The brain increases very little in size, but its activity becomes more marked, and covers a wider range than in either of the former stages of its growth. The sensory organs are all complete, and pour constant stimuli into the brain, which is highly receptive, and thus gathers the information that it may later use in abstract and general ways. Obviously, the nutrient demand is less than in the preceding stage of growth, for food is now used largely for fuel; then it was used both as fuel and for construction of tissue, thus requiring largely nitrogenized material.

We have not considered the value of exercise in connection with the periods of growth, for it seems at first only remotely related to mental growth, while in fact it is second only to nutrition in the initiation and execution of mental processes. A very large part of the whole brain area is given up to the control of muscles and the reception of the sensory impressions that call them into action either directly or reflexly. As all the brain cells are connected more or less closely, it seems fair to say that whatever assists or injures one part must to some extent help or harm the whole. Muscular exercise may, then, be a valuable method of rousing into activity the largest number of brain cells, and, through the improved circulation of the blood, must powerfully promote the nutrition of the brain as well as secure such a change of the cell contents as is demanded by the law of its life. Many of the so-called nervous diseases are perversions of the activity of brain cells that are unused in normal ways and that consequently exhibit their energy in abnormal form. This might not be a serious phase of the subject if a method of action of any organ did not tend to become habitual, and then a diseased condition becomes fixed or chronic. The daily use of some form of exercise that shall train the brain cells to work harmoniously toward some specific end must not only give good control of the body and health of its organs, but must be fundamental in giving mental control and health.

Every teacher, therefore, should understand gymnastics, and apply some form of them in the daily program of the pupil's life, if he expects to train the brain of the youth into the symmetrical and fine working organ of the mind. New forms of muscle working are brain exercises, and may be looked upon as a vital help in connecting thinking and doing, and thus making life efficient.

REFLECTIONS UPON HYGIENE IN A GREAT CITY.

MARY HENRY ROSSITER.

Reflection Number One.—Here the stomach is a great and terrible god. It eclipses poetry, philosophy, the arts, music, money, love,—everything. If I am walking down Broadway, thinking of those "innumerable footsteps" coming, passing, receding, crossing, suddenly my eyes are startled by the sign, "Oyster Stew," "Oysters on the Half Shell," "Clam Broth," "Bouillon." Am I hungry?—No. It is only half an hour since I breakfasted.

If I stop for a moment to look at some famous painting, and try to carry the picture away in my mind, the pleasant image is thrust aside by another sign, "Horton's Ice-Cream," "Ice-Cold Lemonade," "Ginger Ale," "Tea and Coffee." Am I thirsty?—Yes. But I long for a drink of water, not for something that will make me yet more thirsty.

If I go to a concert, my meditations upon the wonderful influence of harmonious sounds are interrupted by the offer of alleghrettis or French bonbons by my charming neighbors.

So it is everywhere. If one had never before been conscious that he had a receptacle within for food, he could not forget it now. On every side he is reminded of his stomach and its needs. It would seem that this god, the stomach, must be propitiated by constant offerings. If the ubiquitous saloon is no attraction,

the restaurants, cafés, dairy lunch-rooms, fruit-stands, bakeries, hotels, with their flaring or insidious invitations, present a variety of temptation that must find one's vulnerable spot. Appetite is their subtle accomplice, and sits grinning within, confident that you must yield at last. For there is something very imperative about these gastronomic placards. They seem to say not only, "Raspberry Ice," "Moxie," "Quick Lunch Served at any Hour of the Day," but also, "You must eat, you know," "Surely you can't pass *me.*" Many a neglected "Ice-Cream Soda" sign still hangs, sad and reproachful, upon the walls of memory, and will not be driven away. These signs are not accustomed to being driven away: the people of the great city too often bow down to the god, and worship it. The conditions of city life are such that they can scarcely avoid this tacit and usually unconscious homage. They are obliged to hurry. They have no time to eat slowly, and thoroughly to masticate their food at home. Hence they start away unnourished and unsatisfied. Down town they have no time, opportunity, or inclination to eat or drink what the body requires. So they remain unsatisfied and unnourished. When hunger or thirst becomes intolerable, they eat or drink the most easily obtainable food or beverage that promises to satisfy the immediate demand, thinking simply of the present effect, and not at all of the future consequences. "Anything to quiet that demon inside," is the thought of far too many. But the demon inside is not quieted that way, and it is no wonder that the inhabitants of our great cities are so fast falling victims to dyspepsia, nervous prostration, and a thousand other ills that arise from conscious or unconscious subjection to an ignorant and untrained digestive system.

Reflection Number Two. — However grimly determined one may be, it is almost impossible to live hygienically in a great city, if one be a stranger or a brief sojourner. The metropolis has no notion whatever of hygiene. Suppose you must go to a restaurant or hotel for breakfast. Since you could not get a drink upon rising, you would like one now. But you do not approve of ice-water, and there is no cold filtered water to be had. You will take fruit instead. But the waiter's idea of an order for fruit and your own differ painfully. You eat one peach and a bunch of grapes, and think longingly of your generous fruit breakfasts at home. Oatmeal combines well with fruit, so you take some. But you wait in vain for crackers or rolls to eat with it. You can not make the waiter understand that it is either proper or pleasant to eat bread and butter with oatmeal. You cling to your habit of eating something hard with all soft foods, so as to promote mastication and the flow of saliva; hence you insist upon the rolls. When you finally get them, the oatmeal is cold, and the waiter is in such a hurry to remove it that you give up that part of your breakfast in despair. But if you happen to be a vegetarian, your troubles now begin in earnest. Since you have eaten fruit, you do not care for vegetables. You can not get them without meat, anyway, unless you wish to empty your pocket-book for one breakfast. You hesitate to order eggs, remembering all you have heard about invalid eggs. But finally you compromise on an omelet, with the subconscious thought that the invalidism will not be so easy to distinguish. But, alas, you can not conquer your notions, and when the omelet comes, fried, and peppered, and seasoned with cheese or ham, you leave the restaurant either hungry or burning with thirst, according as you have or have not eaten the omelet. An immense pity fills your heart for peo-

ple who accept these conditions, and who suffer under them because they have never heard of a simpler and better way. Even a day or two of city life brings to your own senses a touch of the all-pervading and irresistible dissatisfaction. All day long, after this morning's uncomfortable experience, you are faint, or irritable, or thirsty, or all three combined. You do not like to drink ice-water; you would rather eat but two meals a day. You know, however, that three o'clock is the worst possible time to get a dinner in the city. You can not get a good vegetarian dinner at any hour or anywhere in the great American city.

You wonder why some enterprising young man does not go to London, and study the famous vegetarian restaurants there, and then establish one in New York or Chicago. Meanwhile you are hungry. You can think of nothing else until you have satisfied this awful craving. What can you eat? Eggs again? Impossible! Suppose you try this elegant café. "Roast beef, roast lamb, roast pork, veal stew, stewed kidneys, sweet breads, mutton chop, pork and beans, Boston baked beans,"—"there, I'll take that, and some baked potatoes, and mashed sweet potatoes, and green peas; no tea or coffee, or wine, or salad, or cheese, or"—but the waiter has fainted, and while you are escaping as unobtrusively as possible, you mentally resolve that hereafter you will take an apple and a biscuit in your pocket, and spare the feelings of the old and experienced.

Still you are hungry. "Stupid, why didn't you think of soup? There was celery soup on the menu, and that surely would be eatable." You seek out another café like unto the last. Here you order at once "cream tomato soup," and the vision rises before you of the delicately flavored dish by that name that your sister makes at home. The cream tomato soup arrives. One taste reveals the fact that from the hygienic point of view, roast beef would be meritorious compared with this; for the soup is so hot with condiments, even the names of which you have forgotten, that in mercy to your mucous membrane you lay down the spoon, pay your bill, and depart, once again a sadder, hungrier, and wiser man.

However, it is not hygienic to starve. By this time it is three o'clock. In sheer desperation you enter a dairy lunch-room, and shutting your mind to all the stories you ever heard of tuberculosis in milk or germs in raised bread, you order a bowl of bread and milk, and fiercely determine never again to darken the doors of a barbarous city hotel or restaurant. You think you will start a health mission among the cooks and chefs of New York, and resolve to devote your life to improving the outlook in the great city for future wayfaring would-be plain and hygienic eaters.

Reflection Number Three.— One would be much happier, if obliged to live in the great city, not to know so much about germs. Although you have taken the greatest care in selecting a room that seems clean and wholesome, you can not help an uneasy feeling about its previous occupants. How do you know that some poor body has not died of consumption within those walls? and what assurance have you that every article in the room was thoroughly disinfected afterward? Indeed, you have your own mental assurance to the contrary, for what do the thousands of city landladies know or care about bacilli and your health? You, however, take pains not to stir up a dust. You are very gingerly about touching the floor with your bare feet, or coming into close contact with any of the upholstery.

When you leave your room, and enter a street-car, the terrible idea of germs still follows you. You are crowded in

among all sorts of people. You think, a little sternly, that people of your disposition really ought to live alone on an island.

Feeling as you do, that you hardly dare breathe even through your nose, you wonder greatly that so many of the great throngs of people you pass, go along with their mouths wide open. You are almost moved to cry aloud, "Keep your mouths shut! Don't you know you are breathing in and swallowing millions and millions of germs every minute?"

Almost every one compresses his lips and holds his nostrils while passing a gas house or an oil refinery, but the invisible and odorless poisons, the microscopic organisms that lurk in dust and miasms, are far more deadly than those malodorous gases and vapors that publish their presence by smoke or smell.

Another offense to the student of hygiene in the great city is the open fruit-stand. To say nothing of the mystery that surrounds the place and the methods by which the fruit is ripened, it is a passing marvel that people will buy it after it has been exposed all day to the clouds of dust that sweep up the street, to the handling and proximity of everybody and his wife, and the worse than doubtful means to which many fruit vendors resort to make their stands attractive.

On the whole, after spending a week in New York or Chicago, after the wholesomeness of a country town, one is moved to change a famous line by Browning, and to exclaim,—

> O, a day in the city square,
> There is no such danger in life!

MATADOR OR ABATTOIR: WHICH IS THE MORE CONSISTENT WITH ENLIGHTENED CIVILIZATION?

J. H. KELLOGG, M. D.

We find occasionally in the newspapers and in guide-books and works of travel, blood-curdling accounts of the bull-fighting exhibitions which are constantly to be seen in Mexico and other Spanish countries. There are brilliant descriptions of the agile capering of the capeadores, of the venturesome audacity of the banderilleros, of the skilful horsemanship of the picadores, and of the dexterous swordsmanship of the matador who escapes death himself by a hair's breadth in taking the life of a bull. Long disquisitions have been written upon the horrors of bull-fighting, and Spain and Mexico have many times been held up to the scorn of the world because of the bull-fighting proclivities of their people. One writer recently remarked that in his opinion a nation that would tolerate bull-fighting "ought to be wiped off the face of the earth."

Do not imagine, gentle reader, that we are going to offer any apology for bull-fighting. This so-called sport is certainly the devil's business; if sport at all, it is hellish sport. It offers a spectacle well calculated to manufacture demons, cut-throats, cold-blooded murderers, human fiends, assassins, thugs, fratricides, and matricides. But compared with some ways of killing brutes, bull-fighting has at least one redeeming feature,— the bull has a chance to kill his would-be murderer, to gore and trample in the dust his tormentors, which he has a perfect right to do, a God-given right. "Surely your blood of your lives will I seek, by the

hand of every beast will I seek it." Gen. 9 : 5.

When the human race began its onslaught upon the lower animals, God put

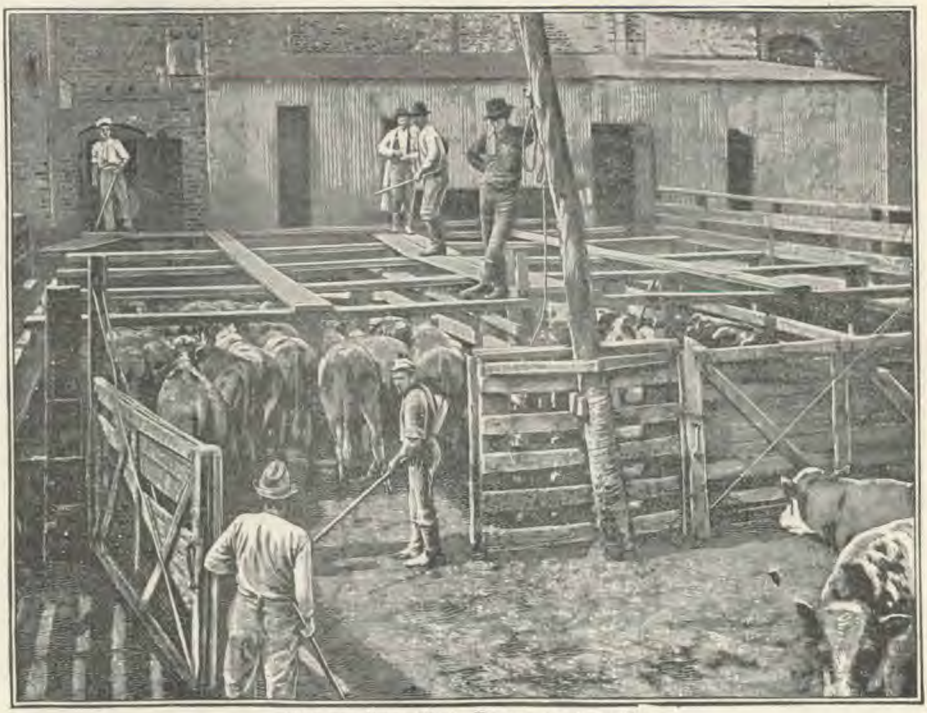
"In Blissful Ignorance of Their Fate."

in the heart of every beast a self-preserving instinct from which he derives the impulse to take the life of man. Then began the strife between man and beast as to which should kill the other. In thus giving the animal the disposition to kill man, God provided for a "square fight," giving the animal a chance to execute divine vengeance upon its pursuer; to save its life by taking the life of its would-be murderer. Viewed from this standpoint, there is one thing worse than bull-fighting, with its matadores, picadores, chulos, and and muleteros. Now listen, reader, while I tell you what it is. It is the abattoir! Do you object to this arraignment of one of our much respected institutions of all great cities, and one of the most prodigious wealth-producers of all the various businesses in which men are engaged in the great metropolis, if we may judge from the colossal fortunes accumulated by those most largely engaged in the killing business? Let me ask you to take a peep through one of the great abattoirs of a large city. Unless you have already been accustomed to spectacles of gore such as are afforded by the town slaughter-house or "butchering-day" on the farm, you may perhaps feel shocked before you have completed the tour of one of these stupendous slaughter-pens.

The *Cosmopolitan* and the *Gentleman Farmer Magazine* have recently published lengthy and profusely illustrated articles giving the details of the whole business, so that it is possible for one to attain a very exact knowledge of what takes place in one of these establishments without running the risk of soiling his garments with blood or becoming nauseated by the

reeking stench which "smells to heaven," not only in the immediate vicinity of the stock-yards of Chicago, for example, but sometimes pours out such a malodorous venom as to insult the nostrils of more than half the two million population of that filth-ridden city. Through the kindness of the editors of these magazines we are able to furnish our readers with a number of these life-like cuts, which are made from photographs taken on the spot, each of which carries with it an appeal, the eloquence of which might move a heart of stone.

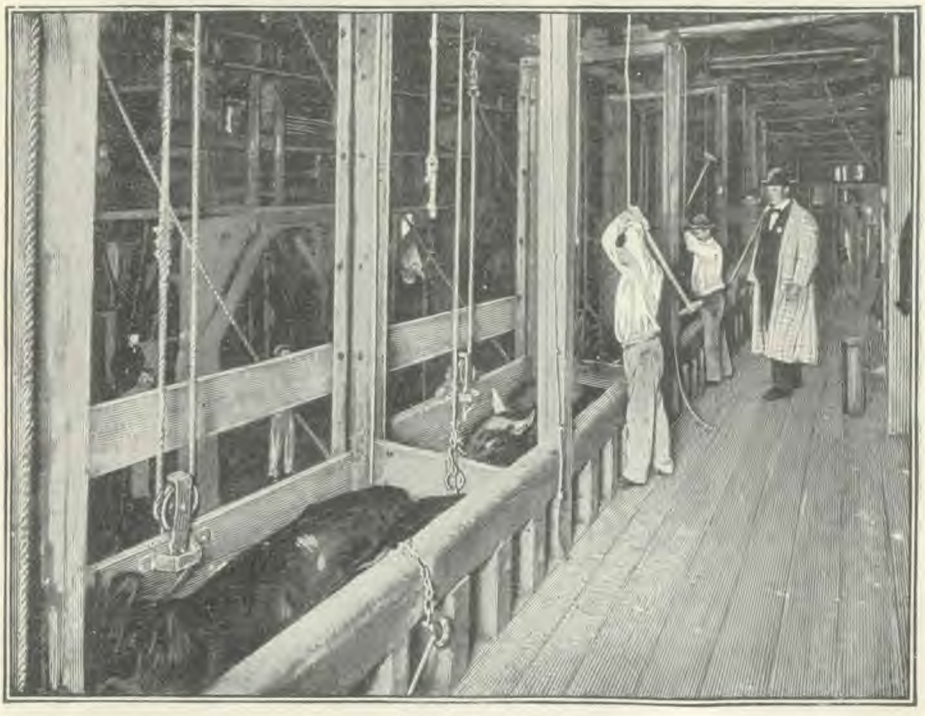
In the Union Stock-Yards of Chicago enormous wealth has constructed a machine for killing, the most extensive to be found in all the country. As the *Cosmopolitan* says, "It is a region of order and death, but a sight that will stir the most casual onlooker or the deepest philosopher." And it does stir—it changes every man who comes in contact with it. Let us look at some of these pictures, and let each one of us note how we are "stirred." The man whose soul is not so calloused that he has ceased to think humanely, and has lost sight of the great fatherhood of God and the great kinship of all living, sentient things, must be stirred to feel that the slaughter-house, whether it be the wretched shanty just outside the limits of some country village, or the enormous structure filled with ingenious machinery of every description managed by a great packing company, is simply a place where organized murder — premeditated, systematic, deliberate murder—is carried on. True, it is not so regarded by the men who are engaged in it, but it is nevertheless murder, and by the wholesale.



WAITING THEIR TURN, EXPECTING TO BE FED.

Our first illustration presents a small section of the cattle-pens in which the

poor brutes are confined "in blissful ignorance of their fate." Here, we are told, there are often to be found from "forty to fifty thousand hogs, twenty thousand cattle, and five thousand sheep." Two hundred acres of yards are densely crowded with unoffending brutes, waiting to be slaughtered. As the writer of the article referred to tells us, "hardly any sunrise sees in existence any part of all this life that on the previous morning bleated, squealed, and bellowed under the urging whip of the drover." Think of it! More than one hundred and fifty thousand lives snuffed out in one day! In 1897 nearly four million cattle were passed from whence they are crowded into a long alley, an outer and upper view of which is shown below. The alley is divided into compartments, into which the poor brutes are crowded two by two, and so closely hemmed in that they can not stir. Confused, dazed by their new surroundings, frightened by the drover's whip, possibly imagining that they are being parceled off to be fed, they meekly stand, waiting they know not what; presently an assassin, unseen, unsuspected, slips up behind, and deals each poor brute a sledge-hammer blow between the eyes, which fells him to the floor — not dead, but insensible.



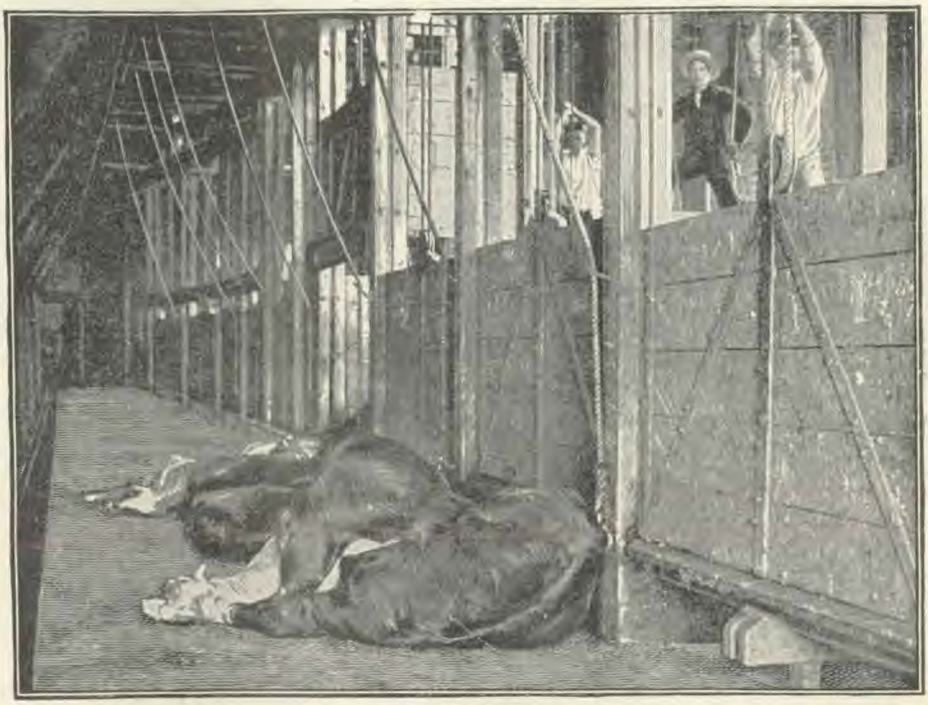
THE ASSASSINATION.

through these yards, and more than eight million hogs, to say nothing of the vast numbers of sheep and calves.

On page 763 is shown one of the yards into which the cattle are driven in small lots when they are to be slaughtered, and

One of the big doors shown in the picture now rises, and the innocent victims are rolled out upon the floor. At this point they are seized, swung aloft, flayed, eviscerated, drawn, and quartered, and hung up to ripen by slow

processes of decay until they become "Christmas beef," possessing just the right odor and flavor of putrescence to suit the appetite of the epicure — tender



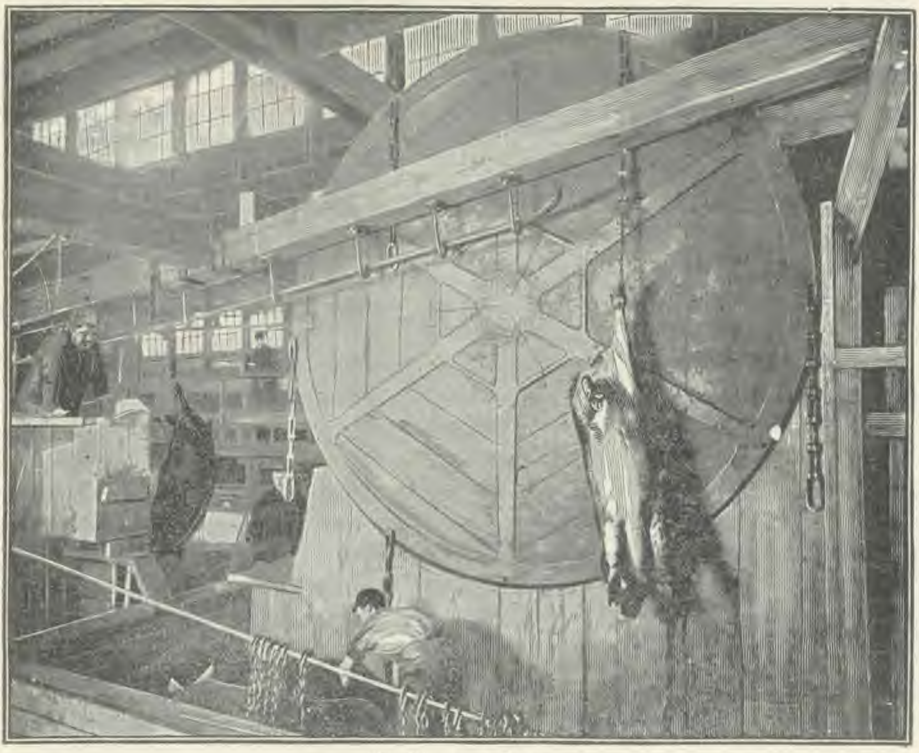
DONE TO DEATH.

morsels to be torn into shreds by dainty teeth that are carefully cleansed and polished three times a day only to be as many times plunged anew into the decaying carcass of some dead beast.

If the dumb creatures of the pen happen to be pigs, "they are driven in lots of fifty into a grim chamber where the wheel of fate awaits them. Here they come, squealing, crowding, dripping from their bath, only to face the wheel, and death in the shape of a huge butcher in whose hand gleams a blood-wet stiletto, and whose apron drips red. The wheel is immense, solid, and without spokes. About the rim, where spokes would be if it were not solid, hang chains with hooks at the bottom. As the wheel revolves, the chains come down and drag upon the floor. Two men are here. As the chains descend, they are seized, and the hook is fastened about the hoof of a hog. The wheel goes on, and slowly the porker is dragged upward out of the jam, while the next chain is fastened to another hog.

"As he ascends, an automatic appliance seizes the hook about the foot, releases it from the hog, and substitutes another victim, without even so much as a jolt or a fall. This is the carrier from then on, and the rail is a direct sloping path to death, dissection, and the refrigerator. In five minutes the kicking, squealing victim will be halved, and hanging with thousands of others in a dim refrigerator, awaiting the car or the packing-room.

"The sloping rail keeps the hog moving by mere force of gravity. As it moves along, one in a long solid line, to the butcher, a dexterous move of the blade ends its career. It passes on, and an electric button which the chain scratches



The Wheel of Fate.

in passing, registers its death, and indicates in the office of the superintendent of the yards the number of hogs slain thus far. For ten yards the body gravitates downward, and bleeds, the blood running into a special reservoir from which is drawn the material for fertilizer."

Consider a moment, reader, how much blood is poured into that reservoir. A calculation based upon very moderate figures shows that the amount of blood annually shed in the Chicago abattoirs alone is more than sufficient to float five great ocean steamships. What crime have these poor brutes committed that they should be thus executed? What law of God or man have they violated that they should thus prematurely die; that their blood should be poured out upon the soil as a fertilizer? Verily, the blood of multimillions of innocents cries from the ground.

After witnessing such horrors, who will say that the abattoir is a noble industry, or, as the writer of the article referred to in the *Cosmopolitan* claims, that it is "the greatest business in Chicago" and "the most interesting thing in Chicago"? Who will dare call the butcher's business honorable, and with the same breath denounce the bull-fight as a national disgrace, an outrage against public morals, a school of murder and of all crimes of violence? We shall not undertake to dispute that this is all true of bull-fighting. The complacency with which Spanish soldiers cut off the heads of captured Cubans, and the equal alacrity shown by the Cubans in butchering helpless Spanish soldiers who fell into their hands until the cold-blooded business was stopped by American rifles leveled at the heads of the would-be offenders, shows clearly enough the effect of the bull-ring upon the Spanish character.

The influence of the abattoir, of the common slaughter-house, is equally shown in the moral deterioration evident in the

men whose lives are devoted to the slaughtering of innocent beasts. The ears of such men become deaf to the agonizing cry of the intelligent brute that suspects its fate. The spectacle of a living being pouring out its life blood in a gushing stream loses its ghastliness; the sight of quivering flesh, of writhing entrails, loses its gruesomeness; life, that divine spark of infinite energy which animates all living things and makes all sentient creatures kin, — this wonderful, mysterious, inexplicable life, — loses its sacredness. The hired assassin is almost always a butcher. The perpetrators of many of the most atrocious and cold-blooded crimes have been more frequently butchers than men of any other occupation. That a man is professionally a murderer of brutes is almost universally, in Christendom, regarded as a disqualification for service upon a jury in which the question of responsibility for human life is involved.

The slaughter-house, the abattoir, is a blot upon our civilization. It is a crimson crime, the awful effects of which are stamped upon the characters of millions of unborn infants. The sight of quartered and eviscerated beasts hanging in the markets, corpses paraded along the public thoroughfare, is demoralizing to old and young; but the thirst for blood, the carnivorous appetite engendered by generations of perversion, demands flesh for satisfaction, and so hundreds and even thousands of men must be employed to wade knee-deep in blood, that "men with fleshy morsels may be fed."

A Fair Fight.

The Mexican chooses to have his beef killed in the ring and to get a little entertainment and excitement out of it by giving the animal a chance to fight for its life. When the animal is dead, its carcass is dragged out, skinned, dismembered, and finally buried in the stomachs of the spectators the same as if it had been killed in the slaughter-house or prematurely shortening its existence, shutting out from its eyes forever the light of the sun, the beauties of the world, shutting away from its ears forever the pleasant songs of the birds and nature's universal music, and cutting off from it forever all the simple pleasures which have been divinely ordained for its gratification,—this is simply unprovoked, pre-

A Torrent of Blood.

butchered by machinery, as in a modern abattoir.

In England, in former times, it was the custom to turn the animal awaiting slaughter out into a large field, and set a parcel of savage bulldogs upon it to tease it until nearly dead so that its flesh might be tender. In other countries it was the practise to hang the animal up by its heels and flog it to death with stout whips. These special cruelties are not now tolerated, but the greatest cruelty of all,—robbing the animal of its right to live, meditated, systematic murder. Does the word sound harsh? It is only because our conscience has been seared, our sentiments have become blunted, our judgment perverted, our natural instincts reversed; we have false conceptions of things; we look upon the animal as we look upon a stone or a tree, forgetting that it is, like ourselves, a sentient being.

If some reader considers that the views expressed in this article are extreme, let him recall the fact that there are in India two hundred millions of people who hold

the life of a beast almost as sacred as that of a human being, who will willingly die of hunger rather than

"Pollute their bodies with the food profane,"

as Ovid sings. In China, Burma, Persia, Siam, and Japan there are as many millions more who regard animal life with the same respect.

A few years ago the Janes, a numerous religious sect in India, concluded their annual feast by visiting one of the slaughter-houses of Calcutta, where cattle are killed to satisfy the bloody appetite of Mohammedans and European merchants and missionaries, not to buy carcasses for a barbecue, but for the purpose of purchasing and setting free a number of cows. Who ever heard of such an example of pity and compassion in Christendom?

(To be concluded.)

THE DISEMBOWELING.

THE DECEPTION OF ALCOHOL AND ALCOHOLIC LIQUORS.

W. H. RILEY, M. D.

THERE is no substance more deceptive in its effects upon the body than alcohol. Contrary to the opinion held by so many, — that it assists digestion, quickens the circulation, strengthens the muscles, increases bodily temperature, and improves the condition of the body generally, — science has demonstrated over and over again that it does just the reverse of all this.

It has been shown repeatedly that alcoholic liquor, when taken into the stomach even in moderate quantities, diminishes the secretion of the gastric juice, coagulates the albuminous part of the food, thus rendering it more difficult of digestion; paralyzes, to some degree at least, the muscular coats of the stomach; and when taken for any considerable length of time, causes atrophy of the glands of the stomach and ulceration of its mucous membrane. All these conditions interfere to a greater or less degree with the digestion of food, and consequently in the same measure with all the functions of the body. Experiments on the lower animals show that alcohol is very quickly absorbed from the stomach, and hastens on to work its mischief in other parts of the system.

After absorption from the stomach, the next organ of importance with which it comes in contact is the liver. It causes congestion of this organ by paralyzing the vasomotor nerves, and interferes with all its functions. The cells in which the work of the liver is done, are paralyzed and poisoned by the alcohol, so that none of the functions of the organ are properly performed. As the poisonous effects of

the alcohol continue, the cells in time waste away, and are finally destroyed. The wasting and disappearance of the essential cells of the liver are attended and followed by an ingrowth of the fibrous and supporting tissue, so that under the influence of alcohol there is a gradual but certain transformation of the normal tissue of the organ. The liver cells being poisoned and destroyed by the alcohol, the connective tissue increases in quantity, and the liver tissue becomes hard in its structure. But even this supporting fibrous tissue can not resist the poisonous effect of alcohol, and finally gives way to it. This tissue also degenerates and wastes away, so that one who is in the habit of making post-mortem examinations of the livers of those who have been in the habit of using the drug continuously, finds scattered through the liver white masses of soft friable tissue with not a single trace of either liver cells or the fibrous tissue which originally made up the structure of the healthy organ, and also that every vestige of the normal liver tissue is entirely absent in these places. On account of the peculiar external appearance of a liver of this kind, it has been called the "hob-nailed liver." The organ in this condition is totally incapable of performing any of its normal functions, and death sooner or later is the result.

From time almost immemorial, alcohol and alcoholic liquors have had the credit of acting as cardiac stimulants and tonics, and even at the present day this opinion is entertained, not only by the laity, but by a large number of the medical profession. Such an opinion, however, can not stand in the light of scientific experimentation and clinical experience. It is true that alcohol and alcoholic liquors, even when taken in moderate doses, increase the number of beats of the heart per minute, but this does not mean that the circulation is accelerated. So far from this, there is abundance of proof on all sides of the question that alcohol retards the circulation of the blood through the blood-vessels and tissues of the body. The circulation of the blood is kept up through the body by the force of the heart beat, together with the force acting in the arteries. Anything that will increase the blood pressure in the arteries increases the circulation, and anything that lowers the blood pressure retards the circulation. Alcohol has a paralyzing effect on the vasomotor constrictor nerves, and interferes with the normal contraction of the muscles of the arterial walls, and this lowers the blood pressure and retards circulation. It is a well-established physiological fact that anything which lowers blood pressure causes the heart to beat faster. Alcohol, on account of the effect on the nerves, lowers the blood pressure in the blood-vessels, and consequently the heart beats more rapidly. Another reason for the increase in the heart's beat is the fact that alcohol has a paralyzing effect on the vagus nerve of the heart. When this nerve is stimulated, the heart beats more slowly. Alcohol, by its paralyzing effect on this nerve, allows it to beat more rapidly. But because the heart does beat more rapidly is no evidence that the circulation is accelerated, and we know that such is not the case.

This paralyzing effect of alcohol upon the vasomotor constrictor nerves is well illustrated in the congestion of the liver, of the lungs, of the face, and of other parts of the body, seen in persons who have been addicted to the use of alcoholic liquors for a long time.

A man takes a drink or two of liquor, and thinks that he is stronger, that he can lift more, that he can endure more physical exertion, than he could before he took the drink. But if we test his muscles carefully both before and after

taking the alcoholic liquor, we shall find that the alcohol has greatly diminished his muscular strength. He feels stronger, but he is really weaker, and this can be demonstrated beyond a doubt by any one who will take the pains to do so.

Alcohol also destroys the normal function of the blood. It unites with the hemoglobin of the blood, and tends to break down the red blood-corpuscles, and in every way interferes with the oxygen-carrying properties of the red blood-corpuscles. By cutting off the normal supply of oxygen that should be carried to the tissues, it interferes with proper oxidation, and consequently lowers the temperature of the body, interfering with the nutritive processes of the body generally. This is one reason, at least, why people addicted to the use of alcohol have a large amount of adipose tissue. A man who has been given to the use of alcohol for a period of years, frequently has a large amount of adipose tissue, a florid complexion, and often receives credit for enjoying good health; but such is not the case. His red face is due to the fact that the blood-vessels of the face are paralyzed, and the face is congested with blood; he is in no sense in a normal, healthy condition. He has a large amount of adipose tissue because of the degeneration which the alcohol has caused in the normal tissue of the body, and because oxidation has not been carried on to its proper extent in the body; and the result is the accumulation of a large amount of adipose tissue which ought really to have been burned up in the body in doing some useful work.

Alcohol also interferes with the action of the kidneys. It prevents the elimination of waste matter from the body, and is often the cause of serious disease in these organs.

Its effect is no less marked on the nervous system than on other parts of the body. Experiments made in physiological laboratories in different parts of the country, and also in Europe, have established the fact that when alcohol is given to rabbits or other animals, even in moderate quantities, the effect upon the nerve cells is seen almost immediately. In a short time it can be demonstrated that alcohol interferes with the normal nutritive properties of the cell, and consequently with healthy nerve action. Not only this, but every one is acquainted with the incoherent speech, the irregular and awkward movements, the muscular weakness, the mental delirium and stupor, of the habitual drinker, to say nothing of delirium tremens and a large list of mental and nervous diseases that are known to result from the use of this deceptive poison.

Alcohol certainly has no useful place in the economy of the healthy body. It is a poison, and is always so regarded by the body,— a narcotic, an anesthetic, a harmful substance, the use of which always results in evil and not in good. It takes more lives annually in this country alone than almost all the acute infectious diseases put together.

The following is a partial list of the many diseases which it causes, and which to a large degree at least might be prevented by abstaining from its use: Different forms of paralysis, epilepsy, apoplexy, general paralysis of the insane, delirium tremens, different forms of insanity, pneumonia, consumption of the lungs, different forms of indigestion, ulceration of the stomach, cancer of the stomach, Bright's disease of the kidneys, cirrhosis of the liver, fatty degeneration of the heart, diseases of the blood-vessels.

Surely no one who will give this matter thought, and look into it with an unprejudiced mind and a desire to find the truth, can come to any other conclusion than that alcohol always does harm, and is never needed in the body, either in

health or in the treatment of disease, except it be as an antiseptic for the purpose of destroying germs. The truth expressed centuries ago in the language of the wise man, "Wine is a mocker, strong drink is raging, and whosoever is deceived thereby is not wise," holds equally true to-day.

THE DIPLOMA OF HEALTH.

DAVID PAULSON, M. D.

THERE are certain diseases, as small-pox, scarlet fever, and a long list of other contagious diseases, to contract which it is only necessary for the system to be in a state of lowered vitality. None but the person with perfect vitality can resist all diseases. But there is another class of diseases which renders the lives of thousands miserable,—diseases called in a general way chronic diseases, which we get in the same manner that we get an education,—by long and persistent training for them—by sowing the seed vigorously before we begin to reap.

The child does not enter the public school until he is five, six, or seven years old, and he leaves it at the age of maturity. But there is another school that he enters at infancy and from which he is not graduated until death, and that is the school of bad habits; he learns bad habits early and sticks to them late—until he gets his diploma. The diploma in this school is ill health; it is disease; it is invalidism. Sometimes the student in the public school is guilty of some misdemeanor, in consequence of which he does not get his diploma; but from the school of bad habits he is sure to be graduated.

The mother begins to coax Johnnie to do this thing or that thing, the evil results of which she should know that he will reap later in life. When Johnnie is free to go on his own independent will, which has already been bent in the wrong direction, he still proceeds in that direction. Long before he ought to be sick, he begins to complain of this or that little pain which he ought not to have; his head does not feel just right; he is dull. Little by little he is laying the foundation for chronic disease.

In most cases, all that is necessary to cure an acute disease is to remove the cause. If a cinder gets into my eye, tears flow. All that is necessary to stop their flowing is to remove the cinder. But if the cinder remains in the eye a long time, say for weeks, and is then removed, the tears will still continue to flow; the glands that produce tears have acquired the habit of producing them, and they continue to do so. In this case the glands of the eye must be coaxed back to their normal condition. So with the man who is afflicted with a chronic disease; after the cells of his body have acquired the habit of acting in an abnormal way, it is not sufficient for him to give up his bad habits.

We tell people to give up their bad habits; they do so, and then they come back to us and say, "I have given up my bad habits, but I feel worse than I did before." This is because nature must be trained back to health again. So I consider the process of recovery from a chronic disease to be a process of training, little by little, in doing the right thing; if the process of degeneration has not gone on too far, even a chronic disease may be cured in this manner. But how much better it is to begin early in life to train up the child in health.

I believe that disease, instead of being a "dispensation of Providence," is simply a result; it is the harvest of seed that has been sown; it is the sure and legitimate growth of that seed; and if we ever expect to banish disease, we must begin early in life,—not simply to get rid of the alcohol or tobacco habit, but to try to understand what wrong combinations of food are, what poor food is, what wrong habits in reference to dress and exercise are, and what influence and what bearing they have upon the health. When these things are combined in the school with the child's daily study, he will learn that they belong together. "What therefore God hath joined together, let not man put asunder." No man *can* put asunder what God has joined together in this way. These ideas will not then be separate ideas in the child's mind; he will learn to connect right principles with whatever he does in his daily life and habits, and then he can expect to have health, and not until then. Then he will receive the diploma of health, as a reward for the good and correct habits of life that he has formed.

THROUGH THE GOOD HEALTH SPY-GLASS.

IN London lately fifty-four barrels of decomposing livers were seized by officials upon premises devoted to the manufacture of all kinds of "table delicacies" and a pure meat extract. The managers had insisted that the livers were all right.

The total number of different dishes at a dinner given by a Chinese gentleman to his friends, says *Good Housekeeping*, ranges anywhere from thirty to two hundred and fifty. The number of courses served hot varies from ten to one hundred.

Sir Samuel Wilks says: "The only remedies I know for consumption are air and sunshine — air, *air*, FRESH AIR." A special number of the *Practitioner* devoted to tuberculosis, a volume of one hundred and fifty-five pages, containing the latest views of many leading authorities, gives but nine pages to the medicinal treatment of the disease.

That cold air possesses great possibilities as a medicine has been demonstrated in a novel way by a Russian physician. According to *London Engineering*, he placed a dog in a room with the temperature lowered to 100° below zero. After ten hours the dog was taken out alive, and with an enormous appetite. The physician tried the test himself. After ten hours' confinement in an atmosphere of still, dry cold, his system was intensely stimulated.

"Sir John Lubbock recently asked the Under-Secretary of War," says the *Vegetarian*, "whether he was aware that the so-called osprey feathers worn as plumes by certain regiments were only developed by, and were stripped from, the birds during the breeding season; that the destruction of the old birds involved the starvation of the young ones; and if he would consider the desirability of abandoning the use of a decoration which involved the slaughter of birds under circumstances shown to involve such cruelty. Mr. Brodrick replied that orders had been given that plumes composed otherwise than of so-called osprey feathers should be prepared with a view to

obtaining the sanction of Her Majesty to the abolition of the osprey plumes worn by the commissioned officers in certain regiments."

Dr. Olin F. Harvey, of Wilkesbarre, Pa., who examined more than a thousand men for admission to the army, states that many of the applicants had to be rejected for insufficient chest expansion. "Strange as it may seem," Doctor Harvey says, "nearly all who had narrow chests were young farmers. Brought up to run a plough or hoe and scrape the ground with long-handled tools, they had very strong arms and backs, but were muscle-bound and bent over. Their chests had been contracted, and few of them could expand on inhalation to the requisite two inches."

The *British Medical Journal*, in a report upon milk and meat inspection in London, says: "The annual mortality per million from tuberculosis in England and Wales in the decennium 1881–90 was for ages under five years 4,499, whereas in the next five years of life it was only 844. There can be no reasonable doubt that a very large part of this fearful mortality in childhood is to be attributed to the consumption of milk containing the infective principle of tuberculosis. Careful scientific examination by Professor Sheridan Delépine of milk brought into Manchester and Liverpool has shown that over one sixth of all the country supplies were thus infected."

"The people should be taught that cistern water is the safest and most wholesome for drinking purposes," says H. H. Vinke, M. D., in the *Medical News*. "Wells are constantly liable to contamination because they admit of the entrance of ground-water, and it has been shown that the bacillus of Eberth retains its vitality for an indefinite period in the soil. The walls of the cistern should be of hard-burned brick laid in a first-class cement in such a manner that they are absolutely water-tight. The cistern should have a capacity of about ten gallons a day for each member of the family for two months. By a properly arranged cut-off, the first rain-water should be permitted to escape."

Dr. Sydenham, who was long known as the "father of English medicine," and probably was one of the first to lay down definite rules for the treatment of various diseases, gave some rather startling medical advice, as viewed by the light of present knowledge. This is one of Dr. Sydenham's famous remedies for the gout, says *Health*: "He by no means advises total abstinence in the treatment of this disease, although he is decided in his preferences for temperance. 'Gouty persons,' he says, 'should make it a rule to drink such liquors as will not inebriate or injure the stomach by their chillness. Of this kind is our small beer. As to water alone, I esteem it crude and pernicious; but young people may drink it with safety!'"

The buzzing sound that bees make in their hives, we are told, and which can be often heard by those standing outside, is not produced for the sake of the music. It is to expel the bad air; and a row or file of bees may often be found near the entrance, engaged in this health-giving operation. Meanwhile, there is another little company standing just outside, "fluttering" the fresh air in. All this time, the little messengers between hive and flower go, come and go, and brush past the ventilating corps, with their little loads of honey. As many as twenty bees may be engaged at once in this praiseworthy process of giving fresh air to their

homes. When they get tired, their place is taken by others, and the good work of aëration still goes on.

The reason why people need extra covering during sleep, according to the *Popular Science News*, is simply this: "Nature takes the time when one is lying down to give the heart a rest, and that organ, consequently, makes ten strokes less a minute than when one is in an upright posture. Multiplying that by sixty minutes gives six hundred strokes. Therefore, in eight hours spent in lying down, the heart is saved nearly five thousand strokes, and as the heart pumps six ounces of blood with each stroke, it lifts thirty thousand ounces less blood in a night of eight hours spent in bed than when one is in an upright position. As the blood flows so much more slowly through the veins while one is lying down, one must supply with extra coverings the warmth usually furnished by the circulation."

An interesting story about fomentations is told by Dr. C. C. Bombaugh in the *Johns Hopkins Hospital Bulletin*. Democedes, a slave, was summoned by Darius, king of Persia, who had sprained his ankle in leaping from his horse. The writer quotes from Herodotus as follows:—

"Darius immediately sent for him; he was discovered among the slaves of Oroetes, where he had been allowed to remain in neglect, and was brought to the king just as he was found, in chains and in rags. He at once applied such strong fomentations and soothing remedies as were used in the treatment of similar cases in Greece, and by these means Darius, who had despaired of ever recovering the entire use of his foot, was not only enabled to sleep, but in a short time was completely restored. In acknowledgment of his cure Darius presented him with two pairs of fetters of gold.

"This," adds the writer, "is the first medical fee of which I find any distinct or specific record in profane history."

Among butchers, Bright's disease and diseases of the nervous system are considerably more fatal than the average. Their mortality figure from suicide is twenty-three, or nine more than the average. They die much faster than the average from rheumatic fever, as well as from gout, diabetes, cancer, consumption, and heart disease. The mortality of butchers under the head of alcoholism has increased by more than half since 1881.

These facts are shown by statistics prepared by the English government. The *Vegetarian Messenger and Review* makes the following comment:—

"It is not, of course, certain that butchers eat more flesh than other people, but assuming that, as seems probable, they do, we have here statistical evidence of the connection between flesh-eating and drunkenness, gout, and cancer."

The *Vegetarian*, London, quotes the statement of experts that Japanese food, though poor in nitrogen, and also in fats, is rich in carbon, and amply sufficient to support life, provided the muscles be kept in action, but that it is indigestible, and even injurious, to those who spend their time squatting on the mats at home. This accounts for the healthy looks of the coolies, and for the too often dyspeptic and feeble bodily habit of the upper classes who take little or no exercise.

The vegetarian wrestlers of Japan and the peasants of that country are among the strongest and most enduring people in the world. The Japanese can obtain an abundance of both nitrogen and fat in the Soja bean, if he desires.

THE POWER OF THE TOBACCO HABIT.

CHARLOTTE SMITH ANGSTMAN.

NONE of us need reflect very long to recall many instances of the power of habit and its insidiousness. Habits are originally the results of voluntary acts, but may become so deeply rooted that their control is impossible.

There is hardly any one who does not know of a case of stammering which was acquired by mimicry at first, but later developed into a habit which held its victim with indissoluble bonds. Many acquire the habit of loud talking, very much to the discomfort of their friends, through habitually talking to a deaf person or for other reasons. Others are observing and critical until they forget that these qualities should include the finding of things to praise as well as to blame, and become such fault-finders that their friends lose all pleasure in their society. There have been naturally disagreeable people who have determined to be pleasant on all ordinary occasions, and especially on trying occasions, till they have actually formed the habit of being amiable, and are among some of our most delightful acquaintances.

Many are familiar with the story of the woman upon whom sorrow's hand had fallen so heavily that it seemed she could never recover health or spirits again, but who determined upon the, to her, stringent measure of a laugh three times a day, whether she felt like it or not. The result was magical, not only upon her own health and spirits, but upon the happiness of the whole family, who took up the laughing habit as a kind of infection, which resulted in making them merry and good-tempered, a delight and a help to all their friends.

Other habits might be mentioned, such as those of study, industry, frugality, and many more, to illustrate their power for good; the habit of lying, to show how it continually augments itself till the results are appalling to one's moral fiber; and the habit of tippling, with its train of possible and probable consequences; but let us consider now one of the most universal habits, that of the use of tobacco.

In all ages man has sought to multiply his enjoyments, animal and intellectual, by the aid of some narcotic. The ancestors of the Peruvian muleteer chewed the coca leaf in far remote times just as he does now, and gave themselves up to its effects just as the cocain drunkard does at the present time. The use of opium, of hemp, and of the betel nut was common among the eastern Asiatics in times of fabulous antiquity. The use of tobacco among the Chinese is of very great antiquity, although their plant is quite different from ours, as it is also in most Eastern countries.

The tobacco habit is of heathen origin, and among the heathen nations we find the use of the weed most nearly universal. Johnston says in his "Chemistry of Common Life:" "The Turks and Persians have become the greatest smokers in the world. In Turkey, the pipe is perpetually in the mouth. In India, all classes and both sexes smoke. The Siamese chew moderately, but smoke perpetually. The Burmese of all ranks, of both sexes and of all ages, down even to infants of three years old, smoke cigars. In China, the practise is so universal that every female, from the age of eight or nine, wears, as an appendage to her dress, a small silken pocket to hold tobacco and a pipe."

Civilized nations have taken up the use of this narcotic, following first the example of the American Indian, till now there is scarcely a nation on the globe which

does not use it to some extent. Even forty years ago it was estimated that throughout the world the total production and consumption of this favorite narcotic was 4,480,000,000 pounds yearly. This would require 5,500,000 acres of rich land to be kept constantly under tobacco cultivation. The tobacco raised annually for the gratification of this one form of narcotic appetite weighs as much as the wheat consumed by ten millions of Englishmen, and as much money is spent for it as for all the wheat eaten in Great Britain. This is also true of the United States. Last year the tobacco bill of Great Britain and Ireland was £32,500,000 sterling. The outlay for the weed last year with small Spain averaged $1.80 for every inhabitant, that country's tobacco bill being $31,000,000. With such an expenditure for such a purpose, is it any wonder that Spain is fast decaying?

But to pass from the magnitude of the proportions which its use has assumed, to its effect upon the human system, let us first consider the active properties which gain such a firm hold upon the appetite. The most active principle is nicotine, an alkaloid; but there are also present nitric, phosphoric, and malic acids, besides albuminous bodies, resinous matter, and a large amount of inorganic salts. To illustrate the difference in the amount of nicotine present, according to the variety and the soil upon which it is grown, consider that good Havana contains two per cent., and Virginia six and nine-tenths per cent.

Nicotine, when injected into an animal, produces varying movements of the heart, thus accounting for the palpitation which characterizes the tobacco habit. Nicotine causes death more quickly than any other poison, except prussic acid (Stillé). One drop kills a rabbit in three and a half minutes. One sixteenth of a grain administered to man has produced muscular spasm and other effects lasting for three days This narcotic has been known to kill a man in three minutes, yet people for temporary gratification will play with such a powerful poison.

Of course the constant use of so energetic a principle can not be without its marked effects upon the human system. Dr. Johnston says that inveterate smokers live in an almost constant state of narcotism or narcotic drunkenness, which must ultimately affect the health even of the strongest.

Another medical authority says: "Its active principle, nicotine, which is an energetic poison, exerts its specific effect on the nervous system, tending to stimulate it to an unnatural degree of activity, the final result of which is weakness or even paralysis. The horse, under the action of whip and spur, may exhibit great spirit and rapid movements, but urge him beyond his strength with these agents, and you inflict lasting injury. Withhold the stimulants, and the drooping head and moping face indicate the sad reaction that has taken place. This illustrates the evils of habitually exciting the nerves by the use of tobacco, opium, narcotics, or other drugs. . . . Oppressive torpor, weakness or loss of intellect, softening of the brain, paralysis, nervous debility, dyspepsia, functional derangement of the heart, and diseases of the liver and kidneys are not uncommon consequences of the excessive employment of this plant."

An incident illustrating these assertions came under the observation of the writer: A well-known physician in one of our chief cities became such a slave to the use of this narcotic that his heart refused to act longer under its whip and spur, and repeated unconscious spells told him plainly that its use must be discontinued. He thought one day, while still a smoker, that he would clean his pipe, which had

grown very dark-colored. After boiling it in a kettle of water, he noticed that the liquid had become very brown. As an experiment he placed a drop upon the nose of the family cat, which promptly died; yet, as he says, he had been taking this powerful poison into his system for years, with all its offensive accompaniments and dire results, for temporary physical gratification and pleasure. He has now completely freed himself from the thraldom of the tobacco habit.

All medical authorities are agreed that tobacco in any form is highly injurious to children and youth. It impairs digestion, checks nutrition, stunts the growth, produces serious nervous disorders, and even induces premature puberty. I recently heard a prominent educator state that you could bundle up all the other bad habits of schoolboys, lying, swearing, truancy, etc., and that it would take the sum total to equal in magnitude the cigarette habit (for this is the form in which tobacco is principally used by the young). He declared that he could tell in a week's time when a boy had taken it up. From being amiable, upright, and clear-headed, he would become irritable, unreasonable, dull, sneaking, forgetful, till such a complete change was wrought that you would not believe him to be the same boy. It is encouraging to know, and shows what can be done, that with about forty cases in one school, the principal succeeded in breaking up the practise.

Prof. J. W. Seaver, of Yale University, writing in the February number of the *Arena* for 1897, says that boys in secondary schools are more likely to form the habit of smoking, because they are away from home and are at an age when they wish to appear mature and "ape their elders." He states that a principal of one of the largest of these schools says that more boys break down in health from the use of tobacco than from any other cause.

A case is known to the writer, of one youth in a preparatory school who often smoked sixty cigarettes a day, and who became so impregnated with nicotine that one day after playing ball he was startled to find that his perspiration had made his undergarments as yellow as if dipped in dye. This same person offered a good illustration of the selfishness which the habit fosters, as the money which he was burning at such a rate came from the hard earnings of his mother, who paid all his expenses, having faith that he was using his time to the best advantage.

Accurate measurements and observations taken upon students in some of our foremost colleges, show that in weight, in height, and in chest girth and lung capacity, as also in scholarship, there is a great difference in favor of the non-smokers.

Even among mature men in the outside world, the effect of tobacco upon respiration and muscular power is so well recognized that it is one of the first things forbidden by trainers for athletic contests. In most schools and naval academies stringent rules are enforced against the use of tobacco. In Germany its use by youths is prohibited by law, and in several States of the Union it is illegal to sell tobacco to any one under sixteen years of age, and in others under twenty-one years of age The sentiment in favor of attempting to save youths from the dire effects of tobacco is still further evinced by the existence of many anti-cigarette clubs. In Michigan, Superintendent Laird, of the Lansing schools, inaugurated a successful crusade against dealers who sold cigarettes and tobacco to boys in the schools. The Michigan State Teachers' Association has done strong work against the sale of cigarettes.

The question whether tobacco should be used by teacher, principal, or superintendent has recently been discussed under a

new light in Colorado. A woman whose educational qualifications came up to the standard, but who smoked cigars upon the streets of Rico, applied for a teacher's certificate. The press of the State and the populace, though horrified, are asking why, since neither civil law nor custom makes this a bar for a man teacher, it should be objectionable for a woman teacher? Some parts of the East seem to be approaching a single standard for men and women in manners and morals. In Center county, Pa., there is a rule prohibiting the use of tobacco, and the county directors require that the county superintendent enter on every certificate granted, whether or not the holder is a user of tobacco. The directors are quietly investigating to find out how many of the teachers use tobacco, with a view to demanding that they either stop it or resign.

Since the instinct to imitate is so strong in both youths and adults, and the power of example is so great, it is certainly inconsistent to wage a warfare against the use of tobacco by youths, and none against its use by their teachers.

But to speak again of the effects of tobacco in general, almost any of us can recall cases of severe and even fatal illness, in persons who were inveterate smokers, which failed for weeks and weeks to yield to remedies which have easily conquered such cases in men who were not addicted to its use. As one physician says, "With a system already thoroughly charged with an influence antagonistic to their own, and which is sure to neutralize their effect, what good can medicinesdo?"

No one can know at what time some operation upon his body may be necessary, compelling the employment of chloroform. The writer recalls the case of a man who took great credit to himself for always having a "good smoke," instead of a drink, when he wished to be particularly bright. The day came when he had to have a large abscess lanced, and from the conditions it could not be done without the administration of chloroform. The result was that the utmost skill of several physicians was necessary to preserve his life, as the heart action was so feeble from his prolonged use of nicotine. Still another tobacconer had so lowered his vitality that he died under the necessary administration of chloroform. Let men consider whether they are ready to risk their lives for this indulgence, before they abandon themselves to it.

Again, the very worst diseases have been found to be transmitted by smoking cigars which had been moistened by rolling their wrappers in the mouth during the process of manufacture.

"In habitual smokers," says Dr. Pereira, a high authority in such matters, "the practise when moderately indulged provokes thirst, and increases the secretion of saliva." When nature's ways are disturbed, as of course they are in an undue secretion of saliva, the penalty must follow, and we have from this effect alone, throat, nasal, and stomach affections; for one can readily see that when the throat is robbed of its natural moisture, it is sensitive to all atmospheric changes, and affords good ground for the planting of any disease germs. Very few smokers are free from severe attacks of catarrh, asthma, or bronchitis, and by the law of heredity, numbers of their children have the same affections. This undue excitation of the salivary glands, and the diseases of the throat and air-passages attendant upon it are in most instances the cause of the expectoration which has become recognized as a public nuisance, always privately and sometimes officially. The progressive town of Brookline, Mass., has dealt with the matter in a way that might well be copied universally, through

its board of health, which has issued the following order : —

"*Whereas*, The expectoration from persons having disease of the lungs, air-passages, or throat contains germs capable of communicating disease to other persons, the Board of Health adjudges spitting in certain places to be a public nuisance, source of filth, and cause of sickness, and it is therefore —

"*Ordered*, That no person shall spit upon the floor of any public conveyance, shop, store, hall, church, schoolhouse, railroad station, or other public building in said town, or upon the steps of any of said conveyances or buildings, or upon the sidewalk of any public way in said town. It is further —

"*Ordered*, That copies of this order be posted in public places, distributed to every family in the town, and published three times in the Brookline *Chronicle*.

"By order of the Board,

"HORACE JAMES, *Chairman*,

"GEORGE F. JOYCE, *Clerk*.

"Brookline, Mass., Jan. 24, 1898.

"In the enforcement of the above order, and especially in regard to sidewalks, the members of the police force will exercise both vigilance and tact. On seeing a violation the officer will quietly call the attention of the offender to the order, showing a copy of it, and withdraw.

"If the officer sees a repetition of the offense after he has called attention as above, he will make an arrest.

"A. BOWMAN, *Chief of Police*."

Again, this dryness of the throat, induced by undue secretion of the saliva, provokes thirst, and leads almost necessarily to excess in drinking, to frequent intoxication, and to all the evils which follow. Indeed, tobacco and alcohol go hand in hand. One almost never finds a case of a man addicted to the use of intoxicating liquors who is not also an inveterate consumer of this narcotic. How many men have had their first familiarity with all the evils of the saloon by going there to buy tobacco, — men who really would never have taken up the drinking habit but for having been introduced to it by this means. A hospital physician says that in cases of delirium tremens he has always found that the patient has used tobacco, and in a few cases that the disease was caused by tobacco alone. It is a well-known scientific fact that cancer has been produced upon the tongue and throat by tobacco. The cases of the illustrious General Grant, the artist John Millais, and Emperor Frederick of Germany need only to be called to mind in order to prove this.

That the use of this narcotic is a habit pure and simple, supplying no recognized want of the system, is proved sufficiently in that almost no one can give any physiological reason for beginning its use, or state the kind of pleasure which its daily use affords or for what reason it is continued. The very distress usually caused for a short time, by the attempt to discontinue its use, proves a false condition created by the consumer, to be soothed by the same narcotic which produced it. You will rarely find a devotee of the weed who will defend its use. One smoker said to me, "It is a miserable habit, and ought to be discountenanced by every one." Another said, "I subscribe to anything and everything which can be said against its use." Still another one said, "I never smoked till I was a man, and then, like a fool, I learned it from my father's partner." A fourth one said, "I used to smoke, but I couldn't have my boys growing up to acquire such a habit from my example, so I quit;" and these are but samples of the confessions which we hear every day from men who use or have used tobacco. Such instances can be indefinitely multiplied by any one.

To one smoker I said, "But you would feel dreadful if you found your wife enjoying a cigar. Why shouldn't she as well as you?" "Oh, but she is a lady," returned he. "Yes, but we are all human beings, and as such should be judged by one standard of manners and morals." "Well, that is so," he said, as if he had never looked at matters in that aspect before. In the laws of the Most High, as taught us by the Son, is there one decree for man and another for woman, or are they for both alike as human beings?

While men are the ones addicted to this habit, it is no more important for them than for women to understand the subject in all its phases. No evil touching health and the family life can be combated without the hearty support of our women, who, as a rule, desire the right and best in all things; they desire things clean, morally as well as physically. Again, they are the ones who want to know about things, who are gradually nearing a state when it shall be conceded that they, instead of men, are the educated class. Can not every one recall some family where the boy is taken out of school "to go to work," as they say, but the girl is allowed to go on and be graduated from the high school at least? Go to any gathering where the subject to be treated is either educational or philanthropic, and you will find the audience composed of women, with a very small sprinkling of men. What does this indicate? — It indicates that men are engrossed in their business, in the all-absorbing problem of getting a living, and, when they have any leisure, do not wish to go on with hard thinking, intricate planning, and what seems to be a continuation of *work;* they want something to rest them, so they go rather to their clubs and societies where they may have the joy of social intercourse, or to places of amusement where their thoughts are directed into less weighty channels. It also indicates that the all-absorbing interest in matters of reform and education lies with women. They are the ones, who, by the nature of their daily occupations, can take up such work. So any reform, to be a real one, must enlist the women, not alone for the reasons just stated, but because in every-day life they are so close to individuals.

(To be continued.)

THE THERAPEUTICS OF LOVE.

MRS. S. M. I. HENRY.

EVERY man must live and breathe in the atmosphere which he himself breathes out, unless he has learned wisdom, and chooses to inhabit a space wide enough, so open to all the winds of heaven, that his own breath is blown away as it leaves his nostrils, while fresh supplies of air are literally forced upon them with every inspiration.

O, the luxury of standing in a strong current of sweet air that has never been breathed, and filling one's self with it, until conscious that every chamber, corridor, and gallery of the human temple has been washed clean by its purifying tides!

Nothing is more deadly to any man than himself. The oft-breathed air, laden with exhalations from his own body, will sooner or later break down the strongest into disease. As the physical is wholly dependent on the spiritual for even the power to breathe, anything that could weaken the hold of body and spirit upon each other would have the effect of poi-

son; while anything that would bind them more firmly together would be an antidote, a healer, a life-bringer. Such a poison to the whole man, deadly as night-shade, is selfishness; and love is its antidote.

This statement is not allegorical; nor is it to be taken in so spiritual a sense as to make a physical and practical application of it impossible. To say that love is the antidote for this poison from which all degeneracy of body and mind results, is to state a fact that has to do with the most unromantic and prosaic phases of common life.

The man who knows love — not its counterfeit, but that divine principle which God is, and by which he has expressed himself in so many wonderful utterances in both heaven and earth — has discovered the fountain of health. The poison of selfishness can kill love in any life, and leave it a prey to all disease; while in turn love can destroy selfishness, and so sterilize the fountain of thought that only health can flow from it.

Without selfishness there could never have been any lust; without lust there would have been no disease; and as love is the antidote, without love there can be no cure for mind or body; and the completeness of the cure will be in exact proportion to the rise of this healing tide in the nature of the invalid (pronounce it with the accent on the middle syllable for the clearest expression of its meaning in this connection, in*val*id).

Disease is the result of a more or less wilful lack of adjustment to the power by which man must live, and move, and have his being. Call this power by whatsoever name you choose, the stern, hard fact remains that if one will not agree with it, if it can not be allowed to teach him how to live in perfect health by perfect love, the divine purpose which it expresses must sooner or later be uttered in that protest which is called disease. Selfishness is disagreement with this power by which we live; love is a free and glad surrender to it. Love is not only self-forgetful, but self destructive; for self being the cult of every deadly germ, it can hold out no hope of health, but makes infirmity sure.

The first utterance of selfishness is appetite; and its constant demand is for anything that will produce a pleasurable sensation, — for more and more of it, until pleasure becomes pain, the pain being the warning of nature that the poison of self-indulgence has begun to do its work, and disease is imminent.

Self is the "horse-leech's daughter" that is never satisfied. Its maw, which is far too large for its stomach, is never filled. Self is the simpleton, who, although often reproved, hardeneth his heart and plunges on to ruin. It is the tyrant under whose abuse the human race has been reduced to the condition of a hopeless invalid, the ready prey of every plague that can possibly fall on mortal flesh.

There is nothing that to-day engages more anxious thought than how to recover from this invalidism. In nothing is there spent more of time and money, more of thought and research, than in efforts to discover the art of healing; and nowhere has failure been more certain or more pitiful. It means so much to be always ill; it would mean so much to be always well.

The successful physician should be *par excellence* an evangelist, a bringer of good news; and his gospel must be love. Anything short of this is a travesty on the profession, a mockery of both the sorrows and the hopes of the afflicted. He should be able to administer love like a medicine, to teach it in its simple purity as he would a diet, to inspire the soul to seek after it, and to lead the life in living it. The physician who will not do this is unworthy of his holy calling.

Health is an inspiration that must have back of it an all-absorbing motive, — a motive sufficient to lead to the correction of every evil habit, at whatever cost in self-denial. No such motive can be found in anything short of that love that will take one as completely out of self as the young bird is taken out of the shell by the energies that have hatched it. But it will do this every time. It will not make legs for the legless, or eyes for the blind, nor will it always straighten the back bent by rheumatism; but it will bring into and send through the entire being a remedial tide before which the whole tribe of disease-breeding germs must be swept away, so that even if the body should remain crooked and incomplete, it would be, in all that remained of it, sound and sweet.

Here is a young woman suffering from ailments, mental and physical, which have resulted from the efforts that she has made to win and hold her standing as the belle of the season. Cosmetics applied internally as well as externally; fashionable dress, parties, the sensationalism of the dance, the theater, the table; the passions aroused by flattery as well as by malicious social rivalry; the irregular habits to which her life was obliged to adjust itself, have at last brought their legitimate compensation. The motive by which she has been moved is that unadulterated sensationalism which is called pleasure, and she has filled herself with it until it has come to be only pain. Pleasure dead, she has nothing left to live for, and drops quickly down into a physical invalidism which is only the outward expression of that disease that has long been chronic to the inner life. She changes the round of mirth and gay parade for the pitiful round of efforts to "get well," through all of which she is like one feeling about in the dark, or one led by some so-called physician who is, at best, but a blind leader of the blind, in the vain effort to find that healing, which, if she had power to see, she would discover close at hand in the principle of unselfishness, or love, the one only divine motive out of which can grow strength, health, and perfect comfort.

To love! O really to love! She is dying, not to *be* loved, but to *love*. But the world would laugh at the thought that such as she could love, and be healed by it. She may take all manner of nostrums; she may spend a fortune in travel, and accept the most ridiculous theories of treatment, and practise them with the earnestness of desperation; and the world will not laugh. It will only say, "Poor dear! It is so sad; but it is really very touching to see how becoming her invalid costume is." But to love, divinely love, and be cured! It would be beautiful, of course; but it is not the way of the world, and hence impossible. Yet there is no other perfect cure for body and soul.

It would make little difference what she should come to love, after she had first surrendered to the One whose name is Love, if it were done unselfishly, as God intended, and as sin has so long prevented. It might be a husband; it might be her heretofore-neglected father and mother; it might be a slum child; it might be a *Cause*. If she only truly loved after that Christlike fashion, with that tender, patient, involuntary love that brings destruction of all self-interest, she would soon begin instinctively to train herself in even the most common things of sense, such as eating, dressing, sleeping, and exercise, as well as in faith itself, to the end that she might become able to meet the needs of this responsibility in which she had learned to take delight. Every habit that could be a hindrance to this love and its holy service would be broken off; weakness would be defied and ignored; strength would, if necessary, be assumed, and afterward cultivated until it became a vital reality.

"I can not be weak!" would be her cry. "By all that is at stake in this love which has become the mainspring of motive, I must be strong; I must overflow with vitality; I must be free from any such limitation as disease; I must lay hold of Infinite Strength!" and according to the genuineness of her surrender to love, according to its power in her to destroy self-consciousness, would be her ability to throw off disease, and to spring up into health.

This has been illustrated again and again by events which have gone upon record as heroic. An invalid mother, bedridden for years, weighed down by the burden of that peculiar form of selfishness that is known as discouragement, or heart-break, under the cover of which a score of ailments, real enough to satisfy any ghoul, had crept in and taken possession of her flesh,—one day, when there came sudden disaster to her child, such as aroused all the love of which God could make her capable, so forgot herself that she sprang from her bed in perfect strength, the long-unused muscles responding without an instant's hesitation to this mighty inspiration which had come upon her, from which she received power to go about performing almost superhuman deeds.

The history of the great awakening which resulted in the Woman's Christian Temperance Union is full of illustrations of what a touch of genuine philanthropy will do in the body as well as mind of even a chronic invalid. When that spirit of revelation, called the "Crusade," threw open the gates of the morning, and deluged the dark places of cruelty with light, so that the women of this nation saw the great, bleeding, putrefying sore of the world's misery, many were, at the sight, so startled out of their own selfish brooding over personal ills and ailments, and there awoke in them so pure, so Christlike, so ministering a love for humanity, such pity for the erring, such tenderness for those wounded almost to death by sin, that disease could not stand before that love. Many who had not for years been able even to supervise their homes were found among the praying women in the saloons, or kneeling in the slush of the winter's snow upon the streets; and, later, in the organized work, went on from strength to strength, from ministry to ministry, their sicknesses forgotten, to be no more remembered only as a sort of nightmare of the selfish past, while the long-neglected home rejoiced in a resurrected wife and mother.

The gentle-hearted Isaiah, in prophetic vision, had a revelation of the ministry of this celestial Healer, when he said, "Loose the bands of wickedness, undo the heavy burdens, let the oppressed go free, break every yoke, deal thy bread to the hungry, bring the poor that are cast out into thy house; when thou seest the naked, cover him, and hide not thyself from thine own flesh. *Then* shall thy light break forth as the morning, *and thine health shall spring forth speedily.*"

And this is not sentiment, but science. It is in perfect harmony with the soundest principles which have ever been demonstrated. Nature will not work under criticism. She will not peacefully bear watching while she is performing her functions. Concentrate your mind upon any organ of the body so as to bring it under the influence of intrusive thought, and you at once throw the whole machinery out of that perfect equilibrium which is necessary to perfect health. The action of the heart can be changed so that the circulation of the blood will be disturbed, the respiration will become irregular, digestion will be retarded, and every organic process will be deranged by meddlesome thinking and suspicious brooding over that strange entity which we call Self;

while any critical analysis of those sensations that make up the vocabulary of self will arouse them to the angry protest of pain. Upon the other hand, to forget all of sensation, or at best to make of its memory only a basis of sympathy, and to concentrate thought and interest upon anything that can affect the happiness, the comfort, the health, and the life of another, will not only leave one's own heart and lungs free to pump away at the regular pace upon which they have mutually agreed — leave the channels open for air and blood to flow, in tuneful rhythm, out and in, unembarrassed by the impudent intrusion of any selfish thought; but will also, through loving-kindness for another's need, afford an inspiration that will never lose its ability to encourage health, vigor, and everything which contributes to noble living; for, "if the Spirit [the Love] of him that raised up Jesus from the dead dwell in you, he that raised up Christ from the dead shall also quicken your mortal bodies by his Spirit [Love] that dwelleth in you."

THE CHILD.

FRANCES E. BOLTON.

EARTH swung 'neath angels' eyes,
The one dark world in space.
Its song was touched with sighs
From God's one fallen race.
Men turned blind eyes to heaven,
And fashioned gods like man,
Nor wist how thus was given
A shadow of Love's plan.

The king on throne of gold,
The slave beside the throne,
Looked forth with need untold,
And sought for One unknown.
The Janus gates were barred,
From war was brief release,
And heaven was newly starred
For the coming Prince of Peace.

For nearer angels came,
Like clouds of misty light,
Shedding a heavenly flame
Where shepherds watched at night.
Through life's sad mysteries deep,
They heard celestial song,
While still the world in sleep
Dreamed on of woe and wrong.

In that sad world of old
The waking souls were few
Who heard the story told,
In every age so new.
The shepherds on the plain,
The wise men, sage and mild,
Heard the angels' sweet refrain,
And came to greet the Child.

Christ was the world's desire,
The one heart filled with love,
His very robes afire
With virtues from above.
To touch him mid the throng,
To touch his garment's hem,
Stanched bleeding wounds life-long;
Love healed the hearts of men.

O Godlike Man and mild,
The world's still slow to see
That the self-lost, love-strong child
Is the high Divinity.
When earth finds her lost place
From the course that sin makes wild,
There'll shine from each Godlike face
The image of Christ, the Child.

HOW THE NERVOUS SYSTEM IS DAMAGED DURING INFANCY.

KATE LINDSAY, M. D.

THE circumference of the average infant's head at birth is thirteen and one-half inches; the adult head measures twenty-one and one-half or twenty-two inches,— a gain, on an average, of about eight inches between birth and maturity. Of this increase, about five inches is added during the first year. In the second year, the head gains from one half to three fourths of an inch. During the next five years, only one inch is gained; and in the next fourteen years, or from the age of seven to twenty-one, there is a gain of only one inch or an inch and a half. The infant, in relation to its height, is one fourth head, while the head of the adult is less than one sixth his height.

During the period from infancy to adult life the brain also doubles in weight, showing that at this time the nervous system is in a specially active state.

It is at this period that the most seemingly trivial causes produce the most profound results. Not only must the brain and nervous system exercise control over the functions of the body, but they must also increase their own structure by the formation of new cells and fibers. The bodily structures have not yet become firmly knit together, and its functions are not performed with fixed method as they come to be after years of exercise. So it is small wonder if the little body acts in an irregular way from what seem to be trivial causes. The infant brain is not an adult brain; it has not reached that state of maturity and fixed habit which would warrant a great degree of restraining force over the organs of the body. It is during this first twelve months of rapid development that the brain and nervous system are most easily disturbed; this is also the time that determines the kind of brain and nerves the little one will have in adult life.

This, then, is the time when infants need the most careful attention as to diet, feeding, clothing, cleanliness, etc. An overful stomach, improper diet, worms, fright, slight overheating, a fall, a blow on the head, the onset of an eruptive disorder, typhoid fever, a malarial chill, teething, or any one of a host of other causes may so excite the nerve centers that a nerve storm, or convulsion, will result. In this abnormal discharge of nerve energy there is great waste of strength, the little one often lying unconscious for hours afterward. Convulsions in infancy and early childhood are also caused by severe congestion of the nerve centers, tumors, fracture of the skull, inflammation, abscesses, blood clots, tubercles, and the many other degenerations that occasion convulsions in the adult. The most common cause, however, is the use of improper food, or giving more than the digestive organs can dispose of. The next most frequent cause is the excessive accumulation of wastes in the body, from the failure of the excretory organs to eliminate them. Many diseases due to blood poisoning, as scarlet fever, measles, etc., give rise to disorder of the kidneys, and cause convulsions of a very serious nature in both children and adults. Rickety children are subject to convulsions, because of the disturbed nutrition of the body. It has been said by a physician that "softening of the brain means hardening of the bowels." The damage done by constipation simply shows the effect of poisonous wastes when retained and absorbed into the blood.

In early life the nerve centers, or ganglia, at the base of the brain are more fully developed than the higher inhibitory, or restraining, and regulating centers; and because of this want of proper guidance or government, the lower centers often run away, so to speak, and wear themselves out in vain efforts to overcome some morbid influence. The writer has followed the history of several children, who, whenever their stomachs were misused, during the first months or years of life, would have convulsions; after they had reached the age of three or five years they would have sick-headache and an attack of bilious vomiting. At this age the higher ganglia are able to regulate the motor nerves of the stomach, so that instead of producing convulsions of the whole muscular system, the muscles of the stomach and abdomen direct their energies to expelling the mass of decaying food, and by thus ejecting it, much of the foul matter that was retained by the infant is kept out of the circulation.

There are many causes that overexcite and damage the nervous system, and lay the foundation for many nervous disorders in after life, but yet do not affect it to such extremes as to cause convulsions. Physicians are aware of the evil effects on the nervous system of such poisons as alcohol, tobacco, tea, coffee, opium, chloral, and a host of other narcotic drugs. Painstaking microscopical investigations of the tissues have been made, to learn what changes are caused by these substances in the structure and protoplasm of the cells; but little has been done as yet toward the study of the minute structures of the infantile brain with the object of learning what damage is done to it by the poisons generated in the alimentary canal by bad feeding or by any other cause potent enough to excite a nerve storm of such severity as to produce convulsions or death. It requires no argument to convince any one that the drunkard injures his intellect and ruins his nerves by every fit of drunken delirium and stupor, but it is not so easy to make the mother understand that she is damaging her infant's brain by a similar kind of toxic excitement when it lies in a stupor from the effects of an improper meal of food which has undergone decomposition in the stomach. It is bad to put poisons already formed into the stomach, as does the inebriate, but it is even worse to turn the stomach into a poison factory by filling it with unsuitable food, which it can not digest, and which, by spoiling, forms alcohol and many other nerve poisons. Even a small amount of the ptomains produced by spoiled food absorbed by the stomach and sent out into the circulation will surely result in lasting injury to the brain and nerves, and will also weaken the intellect and morals of the person in after life.

It may seem but a small thing to the mother to indulge her child in an overamount of indigestible food simply because it enjoys eating it, and she loves it so well that she can not bear to deny it anything it craves; but when she sees it writhing in convulsions, she is not so ready to take the responsibility of its life, and risk trying to restore it to a normal condition. She is very likely to manifest her helplessness, and to call frantically on the nurse, the doctor, or some one else to "do something." In after life, when the child has reached maturity, if he shows a lack of nerve or a weak mental and moral nature, how often do the parents grumble, and feel disappointed because their child does not meet their expectations or make a success of life. They cruelly tax the victims of their own mismanagement with lack of will power, and the ease with which they fall into bad habits, such as drunkenness and licentiousness. They forget that they never

educated them to deny either appetite or passion while the brain was yet in the formative stage of development. The only law obeyed at this important period of life was the craving of the palate for forbidden fruit.

Next to keeping the body clean and pure within by proper feeding, clean water, and pure air, comes proper rest. Want of rest and sleep leads to insanity in the adult, who requires only seven or eight hours of the twenty-four for recuperation, while the infant needs at least sixteen or twenty hours of sleep. If healthy and free from pain, clean, dry, and comfortable, and let alone, the child will always take this needed rest; but if it is cramped with colic, pricked with pins, irritated with rough flannels next its sensitive skin, or allowed to lie in wet and soiled napkins till it is chafed and sore, it can not rest itself, or let others rest.

In the hot summer months care should be taken to prevent heat exhaustion; for it not only damages the nervous system, but predisposes to all manner of disease. When the little one feels the nervous depression and languor due to overheating, sleep may be induced by taking off all the clothing and giving a cool or tepid bath.

Many sensitive children suffer greatly from insect bites. The writer has seen a baby have a rise of temperature of over two degrees from mosquito bites. It had not slept for two whole nights, and its eyelids were swollen almost shut. A soda bath and some wire netting in the windows and doors soon relieved the little one from its tormentors, and with rest the fever and other symptoms of illness subsided.

Plenty of oxygen is needed, for more of that important element than of any other is required all through life. The ventilation of the nursery should be perfect; the air should not be poisoned by nicotine from the exhalations of some smoker or by the expectorations of a consumptive.

The baby should not be hampered in any effort to use its muscles, either by clothing or by being tied in a cab, high chair, or baby-jumper. It is the intention of nature that the mind should have complete control over the action of the voluntary muscles. All restriction tends to interrupt this relation of the intellect over the muscles, and consequently hinders the proper growth and development of both mind and muscle.

Too much, too little, or tight clothing; nervous excitement, as from being played with by thoughtless grown people; in fact, any noise or excitement which will prevent the little one from getting its needed rest, will damage the growing nervous system even more than business fret and worry or excessive brain work injures the adult nervous system. Never allow the baby to be stirred up by fright, fear, or anger, or any other strong emotion, if it can be avoided. It is a crime against humanity for older persons to incite an infant to anger only to witness the impotency of its rage. Such cruel monsters never think of the damage, yes, lasting damage, they are doing to the little one whose angel is always beholding the face of the loving Father in heaven. They do not remember what the Saviour said about putting stumbling-blocks in the path of the little ones.

A child should never be handled roughly, neither should it be taken hold of in an uncertain, timid way, as if one were fearful it would break or be compressed out of shape. Many a nurse or mother gives her little charge a nervous shock every time it is washed and dressed, by just such extremes of either rough or timid handling. The infant is weak, and feels the need of some one who has strength to protect it. Nothing will soothe the

overexcited nervous system of a tired, fretful baby like taking it in the arms and holding it firmly and gently, while humming some quiet nursery lullaby.

Self-control in dealing with children is always an important matter. When only a few weeks old, the infant begins to take notice of what is going on around it; and as soon as it begins to notice, it begins to imitate. If it is surrounded by pleasant, smiling faces, and hears only quietly spoken, pleasant words, it will endeavor to copy them; but, unfortunately, it will just as surely try to copy the fretful, fault-finding, querulous tones and manners, if it hears and sees them. Remember that happiness and calmness of environment tend to brain and nerve repose, to strength of mind and body and morals; while fretfulness and disquietude of the surroundings tend to irritate and disturb the normal growth and action of the infant nervous system, and to fix upon the baby a life-long habit of worry and unrest.

To sum up the causes of damage to the infant nerves and brain,—

1. Any poison that irritates the nerve and brain structures, and provokes a nerve storm, followed by the stupor of complete exhaustion, is damaging. A baby in a stupor after a convulsion due to decaying food in the alimentary canal is the counterpart of the man in a stupor caused by alcohol; both are intoxicated.

2. Overexcitation of the brain, want of sleep, and all kinds of severe mental or physical strain in the adult may be met with in the baby.

3. All overstimulation of the passions and emotions are dangerous to the infant as well as to the grown man. Anger has often killed people, its stunning effects so shocking the nerve centers as to stop the action of some important organ. An angry man is an insane man, and an angry infant is in the same condition.

4. To have the developing nervous system grow in the right direction means that from the first it should be protected from harm in its physical structure, and so educated that when its growth is completed, the intellectual and moral faculties shall be the rulers, and the emotions and passions the servants of the higher faculties. The muscles, as well as all the other organs, should, like well-trained soldiers, be so disciplined that they will respond to the commands of their superior officers without strain or friction. Then there will be brain and nerve action, but not the nerve storms and tempests that lay waste and weaken both mind and body and destroy the moral nature.

A FRINGED GENTIAN.

God made a little gentian;
It tried to be a rose
And failed — and all the summer laughed.
But just before the snows
There came a purple creature
That ravished all the hill;
And summer hid her forehead,
And mockery was still.
The frosts were her condition;
The Tyrian would not come
Until the north evoked it.
Creator! shall I bloom?

— *Emily Dickinson.*

Holiday Menus

Mrs. E. E. Kellogg

DINNER NO. 1

Seeds, Fruits, and Nuts

Chestnut Soup

Puree of Corn Apple Macaroni

Nuttose baked with Granola
(See May No.)

Mashed Split Peas

Mock Chicken Salad
(See November No.)

Hickory-Nut Crisps

Browned Granose Biscuit with Nuttolene
(See May No.)

Raisin Granola with Apricot Dressing

Canned Peaches

Orange or Lemon Pie with Granola Crust

Bananas Pears

Orange Baskets filled with Roasted Almonds

Hot Malted Nuts

DINNER NO. 2

Seeds, Vegetables, and Nuts

Vegetable Oyster Soup
(See Jan. and Nov. Nos.)

Stewed Nuttose with Tomato

Ornamental Potatoes

Mashed Chestnuts with Tomato Sauce

Pulp Succotash Beet Salad

Browned Granose Biscuits with Nuttolene

Buns Nut Sticks

Nuttolene with Lemon

Popped Corn

Ambrosia

Nut Sponge Cake
(See May No.)

Fruit Mince Pie
(See April No.)

DINNER NO. 3

Course Dinner with Appropriate Quotations

SOUP

Canned Green Pea with Croutons

To fare well implies the partaking of such food as does not disagree with body or mind. Hence only those fare well who live temperately.—*Socrates.*

MEATS (NUT)

Broiled Nuttose
(See Toasted Nuttose in April No.)

Mock Turkey Cold Sliced Tomato Nuttose

The eating of much flesh fills us with a multitude of evil diseases and multitudes of evil desires.
—*Porphyrises.*

VEGETABLES

Potato Puff *(See May No.)* Canned Asparagus

Scalloped Vegetable Oysters Stewed Corn

Lettuce Salad with Nuttolene Dressing
(See August No.)

The oftener we go to the vegetable world for our food, the oftener we go to the first and therefore thecheapest supply.—*Sir B. W. Richardson.*

BREADS

Browned Granose Biscuit Currant Buns

Whole-Wheat Puffs Wafer Sandwiches *(See May No.)*

Behind the nutty loaf is the mill wheel; behind the mill is the wheat-field; on the wheat-field rests the sunlight; above the sun is God.
—*James Russell Lowell.*

GRAINS

Crystal Wheat Granose Flakes

Rice with Orange

With such a liberal hand has nature flung
These seeds abroad, blown them about in winds—
But who their virtues can declare? Who pierce.
With vision pure, unto those secret stores
Of health and life and joy—the food of man
While yet he lived in innocence,
And told a length of golden years unfleshed in blood.—
A stranger to the savage arts of life,—
Death, rapine, carnage, surfeit, and disease.—
The lord, and not the tyrant, of the world.
—*Thompson.*

NUTS AND FRUITS

Almonds and Pecans Malaga Grapes Canned Pears

Ambrosia Grape Fruit

The wanton taste no flesh nor fowl can choose,
For which the grape or melon it would lose.
Though all the inhabitants of earth and air
Be listed in the glutton's bill of fare.
—*Cowley.*

THE HOLIDAY DINNER.

MRS. E. E. KELLOGG.

In all times and among all people, dinner has been considered the chief meal of the day. Aside from its legitimate use, that of appeasing the wants of hunger, it has been made to serve various political and social ends in all ranks of life. To a well-relished dinner has been attributed many a favorable change in the affairs of state, while many an unfortunate event has been recorded as the result of an unwholesome or indigestible one. It is well known to students of history that the dinner eaten by Napoleon the Great just before the battle of Leipsic proved so indigestible that the monarch's brain became confused, his equilibrium unbalanced, and, as a result, the battle was lost. The dinners of Mohammed II kept the whole empire in a state of nervous excitement, while one of which King Philip partook is said to have been the cause of the revolt of the Netherlands.

Whatever the custom regarding the other meals of the day, it seems always to have been the universal desire to dine especially well. Tending toward this end, the repast long ago outgrew its first simple estate, and has for ages been made an occasion for excessive feasting and drinking.

The service of the meal in courses doubtless originated through the necessity of providing some way of managing the great variety of viands furnished for a single meal, which, in some past periods, often numbered upwards of one hundred dishes; instances are recorded where three hundred different articles of food were served at one dinner. Hours of time were devoted to feasting; and when the overburdened stomach could contain no more, the feasters retired to a conveniently furnished room adjoining the banquet hall, where, with the aid of feathers to tickle their throats, the much-abused stomachs were emptied, and the people were in readiness again to devote themselves to the pleasure of the palate. One need scarcely be told that such voluptuous living was most degenerating and degrading in its influence upon mankind.

Probably nowhere at the present time do there exist any such excessive epicurean tendencies as were prevalent among the degenerate Romans, yet it must regretfully be acknowledged that health is still made largely subservient to appetite, and that far more time and strength than would be necessary with fewer and simpler dishes, are expended in preparing food, the chief merit of which is that it "tastes good." Particularly is this true upon holiday occasions and when guests are to be entertained in our homes The prevalent custom of loading the table at such times with an elaborate variety of costly indigestibles is neither conducive to good health nor necessary for good cheer. A prominent writer stigmatizes such a course as "the barbarous practise of stuffing one's guests, indicative of a crude state of civilization." Another aptly says, "The profusion of viands now heaped upon the table betrays poverty of the worst sort; having nothing better to offer, we offer victuals, and this we do with something of that complacent, satisfied air with which some more northern tribes present their tidbits of whale and walrus."

We have no desire to disparage the beautiful custom of gathering one's friends and neighbors around the hospitable board, but we urge that higher pleasures than the mere gratification of the palate be the chief feature on such occasions. If a special bill of fare is deemed requi-

site, let it be made up of articles wholesomely simple, easy of digestion, provided without taking the life of any of our fellow creatures. Nature's own aliments — the seeds, vegetables, nuts, and fruits — afford ample material, and are surely far more in accord with the feeling of peace and good-will which should prevail at this season. As suggestive of what may be provided from such material, we offer our readers several menus for a holiday dinner. These have been so planned that while containing the requisite food elements in ample proportion, the different viands will sufficiently harmonize in color so that with inexpensive but appropriate decorations, the dinner may be a symphony of color so charming to the eye as well as pleasing to the taste that when accompanied by that "feast of reason and flow of soul" which should characterize all hygienic repasts, the most zealous devotee of a flesh diet will hardly miss the roasts and game, the sweetmeats and confections, of the usual holiday menu, though quite probably he may miss the after headaches and malaise so wont to follow.

At one such dinner prepared after a bill of fare similar to the first given on the following page, chrysanthemums, yellow and white, were the decorations used. Potted plants encased in frills of white or yellow tissue-paper stood before the dining-room windows and upon the sideboards, while rose bowls filled with loose blossoms adorned the table. Suspended with white and yellow ribbons from the electric chandelier just above the center of the table was a star of the lovely yellow blossoms, while at each place lay a *boutonnière* of white or yellow flowers. The menus, plainly written upon large cards, were hand decorated with crysanthemums in water colors, while appropriate quotations written upon the back, of which the following are samples, furnished food for thought and conversation: —

"The first wealth is health."— *Emerson.*

"No flocks that range the valley free
To slaughter I condemn;
Taught by the Power that pities me,
I learn to pity them;
But from the mountain's grassy side,
A guiltless feast I bring —
A scrip with herbs and fruits supplied,
And water from the spring."— *Goldsmith.*

"To work the head, temperance must be carried into the diet."— *Beecher.*

RECIPES.

Chestnut Soup.— Use the large Italian chestnuts. Drop into boiling water and cook in the shells from one half to three quarters of an hour, then place in a hot oven, and bake for ten or fifteen minutes. The length of time required will depend upon the age of the chestnuts. They should be tender and mealy when done. Shell and press through a colander, add boiling water to make a soup of the proper consistency, salt to taste, and season with cream or nuttolene.

Apple Macaroni.— Fill a pudding-dish with alternate layers of boiled macaroni and tart, raw apples sliced very thin, with scant sprinkling of sugar, and bake until the apples are well done. Serve hot or cold.

Hickory-Nut Crisps.— Mix together thoroughly one and one-half cups of coarse graham flour and two-thirds cup of hickory-nut meal, made by pressing shelled hickory-nuts through a fine colander or sieve. Make into a rather stiff dough with ice-water, knead well, roll into a sheet as thin as brown paper, cut into shapes with a cookie cutter or into squares with a knife, prick with a fork, and bake

on perforated tins until lightly browned on both sides

Raisin Granola.— Into a quart of boiling water stir a cupful of dry malted nuts, and then sprinkle in slowly a pint of granola, and cook until thickened. Add a large cupful of nicely steamed raisins, and serve hot with a sauce made by rubbing stewed dried apricots through a fine colander.

Orange Pie.—Rub smooth a heaping tablespoonful of corn-starch in three tablespoonfuls of water; pour over it a cup of boiling water, and cook until clear, stirring frequently that no lumps form. Add one cupful of sour orange-juice, a little grated rind, and the juice of one lemon, with sugar to taste. Lastly, when quite cool, stir in the well-beaten yolks of two eggs. Bake with under crust only. Meringue the top, when baked, with the whites of the eggs well beaten with a tablespoonful of sugar, and a very little grated orange peel sprinkled over it.

Granola Crust.—For one medium-sized pie use three fourths of a cup of granola mixed quickly with one-third cup of rather thick nut cream (made by dissolving nut butter or nuttolene or almond butter in water). Turn into a pie tin and spread with the bowl of a spoon evenly over the bottom and sides of the tin. Fill and bake.

Orange Baskets.—Cut as many oranges as you desire baskets into such shapes that the peel, when the inside is removed, will form a basket with a handle. To do this, cut around the orange through the center with the exception of about half an inch on opposite sides for the handle. Shape the handle from this, and pare away the rind which is not needed. Carefully remove the pulp and juice for other use, and put the baskets in a pan of broken ice to keep fresh. Fill the baskets with roasted almonds and raisins.

Decorated Potatoes. — Prepare and bake large potatoes of equal size. When done, cut them evenly three fourths of an inch from the end, and scrape out the inside, taking care not to break the skins. Season the potato with salt and a little thick sweet cream, being careful not to have it too moist, and beat thoroughly with a fork until light; refill the skins with the seasoned potato, fit the broken portions together, and reheat in the oven. When hot throughout, wrap the potatoes in squares of white tissue-paper fringed at both ends. Twist the ends of the paper lightly together above the fringe, and stand the potatoes in a vegetable dish with the cut ends uppermost. When served, the potatoes are held in the hand, one end of the paper untwisted, the top of the potato removed, and the contents eaten with a fork or spoon.

Stewed Nuttose with Tomato. — Cut the nuttose into pieces not over half an inch square. Cover an inch deep with tepid water, and simmer slowly until the water is nearly evaporated. Season with salt and a cupful of stewed strained tomato to the pint of nuttose.

Mashed Chestnuts. — Prepare and cook as directed for soup. Rub through a colander or mash with a potato masher, season with salt and cream or nut cream. Serve with tomato sauce.

Pulp Succotash.— Rub an equal quantity of cooked corn and beans through a colander, season with salt and cream or nuttolene, and serve.

Nuttolene with Lemon.— Mix nuttolene with lemon-juice in the proportion of one-half cupful of juice to the pound of nuttolene, add a half teaspoonful of salt, press all together through a colander to mix thoroughly. Shape into balls, or press and cut in cubes, and serve as cottage cheese.

Nut Sauce for Potato.— Mix together one-half pound of nuttolene and two and one-half cups of water. Heat to boiling, season with salt, and thicken with two and one-half teaspoonfuls of browned flour.

Canned Green Pea Soup. — Prepare this soup according to the recipe given in the July No., using canned instead of fresh peas.

Roast Turkey.— To two cups of lentil pulp (prepared by cooking lentils and passing through a fine colander) add one cup of strained stewed tomato, two eggs, two cups of walnut meal (made by pressing English walnut meats through a colander), one-half cup of granola, one-half cup of gluten which has been browned in the oven, the juice of a medium-sized onion, a little minced celery and pulverrized sage, just enough to give it flavor, and one-fourth cup of very thick nuttolene cream, with salt to season. The mixture should be quite stiff, as it will be if the water is largely separated from the lentils. Place in a common bread tin and bake in a quick oven. If the mixture proves to be thin, a longer, slower baking will be required, as it should be stiff enough when baked to slice nicely. Serve in slices on individual dishes with a small quantity of dressing and a garniture of parsley or celery leaves.

Dressing.— One cup of strained lentils, one cup of strained, stewed tomato, one cup of nuttolene cream, browned flour to thicken. Season with salt, celery, and a little grated onion. Steam before serving.

Scalloped Vegetable Oysters.— Boil two quarts of sliced vegetable oysters in about two quarts of water until very tender. Skim them out, and fill a pudding-dish with alternate layers of crumbs and oysters, having a layer of crumbs for the top. To the water in which they were boiled, add a pint and a half of thin cream, salt to taste, boil up, and thicken with a heaping tablespoonful or two of flour rubbed smooth in a little cold cream. Pour this over the oysters and crumbs, and bake a half hour. If this is not enough to cover well, add more cream or milk. Stewed tomatoes are a nice accompaniment for scalloped vegetable oysters.

BATTLE CREEK SANITARIUM QUESTION BOX.

ANSWERS BY J. H. KELLOGG, M. D.

1. Do you not think that housework is one of the most rational forms of exercise for women who can not have the benefits of a gymnasium?

Ans.— I know of no better. It is a capital means of all-round exercise,— going up and down stairs, bending over and picking up things, sweeping, reaching up after things, washing dishes, kneading bread, scrubbing, washing clothes over a wash-tub, and so on. If a woman does this work herself, instead of doing it by proxy, as many do, it is good exercise. However, housework does not take the place of systematic gymnasium work. It is, if possible, advisable to have gymnastics also. The farmer needs this scientific exercise because he gets all out of shape. When he rests in the field, he sits on a rail fence, doubled up like a jack-knife, while after dinner he lolls in a bad position reclining in a chair. The housewife gets out of shape in the same way, by sitting in a rocking-chair, and stooping when she stands. Gymnastics are invaluable for all classes.

2. Are there not free fats in the various nut foods made here; for instance, nut-

tose, nuttolene, and almond butter? In the almond butter is the free fat entirely eliminated?

Ans.— The fat in these foods is in a state of natural emulsion. There is no free fat in almond butter: it is emulsified fat. Almond butter is fat in its natural state.

3. Can a person who has a prolapsed liver safely disregard it?

Ans. — By no means. A prolapsed or dislocated liver is a vastly worse misfortune than a dislocated hip or shoulder. It is a very serious matter to have one of the visceral organs dislocated, for in that case it can not perform its work properly. I once had a patient who was supposed to have an abdominal tumor, but it proved to be nothing but a floating kidney. A housekeeper who spends her time running around the neighborhood can not keep her house in order; the same is true of the kidney or liver.

4. Does the copious use of water increase the work of the kidneys, or does it assist them?

Ans. — Water is the best of all diuretics. It stimulates and aids the kidneys in their work, whereas drugs only excite the kidneys without really helping them, and also impose extra work upon them. In such a case, water stimulates the kidneys, and aids them in the performance of the extra work required of them.

5. What would be an ideal breakfast and dinner for a "hypo" patient? What quantity?

Ans. — If I were a "hypo" patient, I should eat a breakfast of fruit and a small allowance of well-toasted and well-browned zwieback or granose with a small quantity of nuts. For dinner, I should take a heartier meal, — an increased amount of these same things. Fruits, thoroughly cooked grains, and nuts form an ideal diet for a person suffering from hypopepsia. As to the quantity, it is difficult to answer that question, because a person should eat what he needs, and he needs more food at one time than at another; for instance, he needs more food on a cold day than on a warm day, and when he is working hard he needs more food than when he is idle. If he takes a day off from his work, he should take off one meal. Most people forget to take a meal off from their bill of fare when they stop work for a day. Many men who have led active lives on their farms, and have so developed their financial resources that they can "settle down" and are not obliged to work so hard, forget that they should reduce their bill of fare when they stop manual work, and the result is chronic indigestion. Many a man gets into a condition called "softening of the brain," just because he retires from active work, moves to town, and forgets to diminish his bill of fare. He not only eats too much, but he eats indigestible food, as the result of which he suffers from indigestion, and wishes himself back on his farm again.

6. Is maple-sugar harmful?

Ans. — No; unless you take too much of it. But it is unnecessary. Maple-sugar is a food, but not a good food for man; it was intended for the nutriment of maple leaves and twigs. It was not intended for eating; if it had been, it would have been provided in a more convenient manner. In order to get it, we have to steal it from the tree. We can not get it in the natural way, as we get fruits and grains, the foods which have been prepared by the Creator especially for us. Starchy foods and saccharin foods contain all the sugar we need. We find that starch in the process of digestion is entirely converted into sugar, so we do not need to add sugar to it.

7. There are many face bleaches, such as "Recamier," etc. Is there any efficacy in these preparations?

Ans. — These cosmetics contain poisons; some of them contain deadly poisons, and can not be used with safety. The best cosmetic is good health. Cold water applied outside and inside is one of the best cosmetics the world affords.

8. Mention the best fruits for a victim of hypopepsia.

Ans. — The three best fruits are strawberries, peaches, and grapes. Next come apricots, baked sweet apples, and stewed raisins, which are almost equal to grapes.

9. How long before a meal should a bath be taken? How long after?

Ans — Half an hour before eating. A bath should not be taken within an hour after eating.

10. I am in the habit of using a few drops of essence of cinnamon in water to rinse my mouth. Is this as good as oil of cinnamon?

Ans. — Yes; it is just the same thing, and the practise is a very wholesome one.

11. Which fruits are better for a "hypo" patient — acid or sweet? Why?

Ans. — A person suffering from hypopepsia may eat acid or sweet fruits, just as he likes. Persons having gastric catarrh should avoid the use of sweet fruits. Persons suffering with gastritis should avoid the use of acid fruits, as they seem to cause irritability when introduced into the stomach.

12. What is the best means of securing firmness of the muscles of the face?

Ans. — Massage is an excellent means of developing the muscles of the face. A person who becomes weak very often has a chap-fallen expression of the face that he wishes to get rid of, and which can be removed by the proper application of massage.

13. Whenever I use soap in washing my face, the skin feels harsh and dry afterward, or else chaps badly. What would you advise me to use in washing the face?

Ans. — I should dispense with soap, and use nothing but water. Soap is not necessary for washing the face. You may add, if you wish, a little carbonate of soda, or better, a little borax with distilled water; that will cleanse the face thoroughly, be perfectly wholesome, and take the place of soap entirely. Persons who use soap in washing their hands should be sure to rinse it off thoroughly afterward.

14. Would not some sort of perspiring process, like the electric-light bath, answer for cleansing the skin of the face, and also help the complexion?

Ans. — Yes; this is one of the most important agents used by those who make a specialty of treating the face, and keeping it in the most presentable shape.

15. Would you dare to try raising a nervous baby without milk.

Ans. — Yes. If there is no chance for the baby to get its natural food, I should try to raise it on something else. I should try malted nuts. I believe it is possible to raise babies entirely without milk. Dr. Tanner told me once of a colony in Mexico, with which he was at one time connected, where babies are raised on corn-milk, and he says they thrive on it. Crops of corn are continually coming on there, and they make milk of the corn for the babies. Corn contains all the elements necessary for food for children, hence I see no reason why it can not be used for this purpose. Take off the brown skin of the corn, bake it slightly in the oven, grind it to a paste, and dissolve it in water. It looks like milk and tastes like milk; babies thrive on it, as well as on their ordinary food.

CHRISTMAS POTPOURRI.

THE first Christmas spent in New England by the Pilgrim fathers was anything but a festive occasion. According to the historian of those days, "Ye 25th day begane to erecte ye first house for comone use to receive them and their goods." We are further informed that not only did our ancestors spend this great holiday in hard labor, but they suffered the added "hardship" of having nothing to drink but water. At least there were no disgraceful scenes connected with the first celebration of Christmas in the New World.

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A boar's head, with a lemon in its mouth, says Aubrey, was a customary Christmas dish at every gentleman's table in England up to the time of the civil wars.

A queer story is told of the origin of this custom. It is related that a collegian of Queen's College, Oxford, was walking in Shotover Forest, studying Aristotle. A boar rushed out at him. With great presence of mind he thrust the copy of Aristotle into its throat, completely choking the ferocious beast. Thereafter the boar's head was served at Christmas in memory of this feat.

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When Richard II celebrated Christmas at Lichfield, two thousand oxen and two hundred tons of wine were consumed.

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In Australia and New Zealand, Christmas guests must assemble around the board under a summer sun, and shaded by green trees.

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In England in olden times, whole peacocks were served at Christmas dinners. The peacock was skinned, roasted, and stuffed with herbs and sweet spices; then the skin was put on again, and the dish borne in to the feast by a lady. Roasted crabs, floating in tankards of spiced ale, were another conspicuous feature.

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The mince pie was known before the days of Praise-God Barebones and his strait-laced brethren, in 1653.

The name Christmas pie, by which it was also known, was obnoxious to Puritanical ears and offensive to Puritan taste. Selden tells us that mince pies were baked in a coffin-shaped crust, intended to represent the manger in which the Holy Child was laid, but more typical, we should say, of the sacrifice of the lives of his creatures whose epitaph might be read in the following toast: —

"All plums the prophet's sons deny,
And spice broths are too hot;
Treason's in a December pie,
And death within the pot!"

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The Scottish Reformation changed the character of the Christmas celebration in Scotland. One of the foremost covenanting divines, in a sermon against Christmas observances, said: "You will say, sirs, 'Good old Yule day!' but I tell you, Good old fool day! You will say, 'It is a brave holiday,' but I tell you, It is a brave belly-day!" Many of the preachers of those times called Christmas "Piemass."

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In many lowland towns, villages, and rural districts of Scotland, "Yule bread" is baked Christmas eve. It is called "fat brose," and consists of oil and juice extracted, by boiling, from the head and knee-joints of a bullock, mixed with oatmeal.

In Russia all good Christians used to observe a fast from animal food before Christmas, and break this fast Christmas morning.

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To the Greek, we are told, the Christmas season brings no gaiety of heart. The saying runs, "Stop in bed at Christmas, and put on fine clothes at Easter." For a month before Christmas every pious Greek observes a rigid fast. A visitor among the common people in the mountains of Greece thus describes a Christmas feast in one of the mountain cottages: On a small round table was a mountain of macaroni and cheese. The cheese was made of coarse sheep's milk and stung like mustard. There were no plates, forks, or spoons. Knives or fingers were used at will. The second course consisted of dried fruits and nuts. "Resinated wine" was served. The resinous flavor was produced by storing the wine in kegs covered inside with resin.

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In England the Christmas fowl is "turkey for the genteel, goose for the democracy." The esthetic eat neither.

SCATTER YOUR CRUMBS.

ALFRED CROWQUILL.

AMIDST the freezing sleet and snow
The timid robin comes;
In pity drive him not away,
But scatter out your crumbs.

And leave your door upon the latch
For whosoever comes;
The poorer they, more welcome give,
And scatter out your crumbs.

All have to spare, none are too poor,
When want with winter comes;
The loaf is never all your own,
Then scatter out the crumbs.

Soon winter falls upon your life,
The day of reckoning comes;
Against your sins, by high decree,
Are weighed those scattered crumbs.

THE IMPORTANCE OF DEEP BREATHING.

"'As we breathe, we live,' is a principle underlying and embracing all laws of hygiene," says W. E. Gundry in the *Herald of the Golden Age;* "for the process of respiration involves action and influence of and upon every organ. At each inspiration the diaphragm, the divisional muscle between the thorax and the abdomen, contracts, and becoming horizontal, presses upon and displaces the liver, stomach, kidneys, and bowels, keeping them all in motion and aiding the performance of their processes; heart action is induced; the blood, purified in passage through the lungs by the inbreathed oxygen, is heightened in tem-

perature and increased in volume, the replacement of the outworn tissue completing the circle-action of vital energy.

"While many are open-eyed to read this truth and to avoid as well the serious dangers of mouth breathing, yet numbers, instead of inflating both upper and lower lobes of the lungs with full, deep inspirations, breathe with but slight vertical motion of the chest, leaving the lower lobes to the decay and disease which inevitably follow disuse. Hence they are frail and feeble and below the normal standard of health. To consider this important subject, and to suggest a method whereby the organs thus lacking in development may be by an easy education in use raised to the highest degree of healthful efficiency, is the object herein sought to be attained.

"Briefly, the mode of procedure is as follows: Stand erect, with lips firmly closed; throw the shoulders well back; keep the chest well down; then, having the hands at the side, raise them outwardly till they meet above the head, at the same time inbreathing deeply through the nostrils, and expelling this air as the hands are lowered to their former position by the side; repeat fifteen times, taking about one second each for lowering and raising the hands. Then with shoulders still well back, place the palms of the hands on the hips and take deep inspirations at the rate of one a second for two minutes, allowing fullest play the while to the contraction and expansion of the diaphragm. Repeat the process from twelve to fifteen times daily, walking or stationary, indoors or in the open air. Immediate effects are increased warmth of body, more spirited vital feelings, and at first a slight and often imperceptible feeling of light-headedness, which, however, is but temporary, and due to the quickened permeability of the blood circulation.

"Sir Benjamin Ward Richardson, probably the greatest of modern health authorities, predicted inhalation as the coming method of medication. Nikola Tesla, the famous Austrian electrician, has in his wonderful 'oscillator' demonstrated the high value of vibratory motion as a remedial agent. This system, the outcome of patient and observant experimentation, combines all the high curative and preventative effectiveness of the most advanced scientific methods, and with the manifest additional advantages of simplicity, safety, and self-application. It provides at once a pleasant exercise for the sedentary, an invaluable aid to digestion, a natural and readily increased efficiency of the blood-making and flesh-forming functions of the circulatory system, and by reason of the heightened bodily temperature, the speedier elimination per medium of the perspiratory ducts, of the effete particles of the body cells, thus bringing robust and hearty health within the reach of all.

"Health is normal. Health is absolute. 'There is but one nature, and the part is essentially one in potentiality with the whole.' The wisest care and fullest upbuilding of the body and its powers is a sacred duty not lightly to be disregarded. Wholeness is health. Health (of body, soul, and spirit) is holiness."

What the World Eats.

The comparative amounts of food used by the principal nations are stated in a very interesting statistical article by George B. Waldron, in *Mc Clure's Magazine* for November. The first surprise is the fact that the most important crop of the world is not wheat, but potatoes. The average crop of potatoes is more than four thousand million bushels, against twenty-five hundred million bushels of wheat, twenty-six hundred

million bushels of corn, thirteen hundred million bushels of rye, and seven hundred and fifty million bushels of barley.

In the consumption of the potato, Ireland leads with a daily average of four pounds a person.

In the use of meats the United States stands at the head of the list. Eleven thousand million pounds are consumed annually in our country, or one hundred and forty-seven pounds to each person. Of this in round numbers five thousand million pounds are beef, four thousand million pork, and eight hundred million mutton. Great Britain comes next to the United States in meat eating, having an average of one hundred pounds to the inhabitant. Italy uses but twenty-four pounds of meat per capita.

The United States also leads in the use of eggs, fully ten thousand million being required in the course of a year, or one hundred and thirty-three eggs to each person.

Again, our own nation stands at the head in the total consumption of tobacco, using two hundred million pounds a year. However, we do not use so much per capita as Belgium, Switzerland, the Netherlands, or Germany.

The United States is behind Great Britain in the use of rice, wheat, and sugar.

In the consumption of beverages there is marked divergence. Great Britain drinks more tea than any other country, also more beer. More coffee is used in the Netherlands. Spain leads in the consumption of wine. The United States uses enough, however,— one hundred and ten million pounds of tea, seven hundred and twenty-five million pounds of coffee, ten hundred and fifty million gallons of beer, and thirty-eight million gallons of wine.

A DYSPEPTIC'S DREAM.

E. M. WINSTON.

O LAND of grease and kitchen slops
Of roasts and stews and mutton chops,
  Is there no haven here,
Where we may taste of nature's food,
And finding only what is good,
  Eschew those horrors drear?

In dingy troops our cooks all stand,
Armed with the baleful frying-pan,
  And sizzing o'er the fire,
They fry the unctuous liver there,
And greasy kidney stews prepare,
  For our destruction dire.

O, sometimes in my dreams I see
A land of health and purity,
  Soft-bathed in heavenly light:
No taint of murder lingers there,
Of foul disease, of sin and care,
  No trace of sorrow's blight.

A radiant land! On crystal streams
Fair lilies nod in languorous dreams;
  And from each sun-kissed height
We catch of fruit the shimm'ring gleam
In tints of rose or purple sheen,
  To tempt our appetite.

God help us all to enter in
A land like this,— fair, free from sin;
  So turning all desire
To what is cleanly, pure, and sweet,
That naught shall tempt save what is meet
  To lift our natures higher.

EDITORIAL.

Taking Cold.

The old adage, "Stuff a cold and starve a fever," is simply nonsense, for a cold is a fever. If it is necessary to starve a fever, it is necessary to starve a cold. Most people who have taken cold keep right on eating beefsteak, mutton-chops, and roast pork. This is like adding fuel to the flame, or pouring gasoline, kerosene, or some other inflammable stuff on the fire. Such food stimulates the morbid processes at work in the body, thus making worse the very condition that must be remedied; for colds are the result of an accumulation of poisons in the body.

Drinking cold water is one of the best remedies for a cold coming on. The cold water stimulates the system, and helps to wash out the poisons. Drink all the water you can. Another excellent remedy is to live on fruit for two or three days, fruit exclusively, drinking hot or cold water freely, and perhaps buttermilk for nourishment. This course will cure an ordinary cold, if taken in time.

A very good plan, also, is to make hot applications to that part of the body first affected by the cold. Do not wait until the cold has extended all over the body, but begin at once. The hot applications or the hot bath must be followed by cold applications or by a cold shower bath, to tone up the system and increase its resistance. It is better, if possible, not to use hot water in cold weather, but to depend entirely upon the tonic effect of cold. The best thing of all is to keep the body in such good condition that there will be no susceptibility to colds. A cold is always a sign of debilitation.

Delicatessen.

A few weeks ago a case was tried in a London police court which ought to be of some interest to flesh eaters, and particularly those who are fond of delicatessen. The defendant was charged with having had on his premises, which were devoted to the manufacture of "all kinds of delicacies and of pure meat extract," forty-four barrels of decomposing pigs' livers. The manager of the place, when the premises were invaded by the inspector, insisted that the livers were all good. These livers had been shipped from Ireland to Hamburg, where they were used in the manufacture of German sausage. There being a surplus of material, this unused portion, consisting of fifty barrels in all, was sent to London to be converted into "table delicacies" and "pure meat extract."

Cold Tea Delusion.

Various medical journals and newspapers have recently been advocating cold tea as a beverage for soldiers. No doubt cold tea is less injurious than whisky, brandy, punch, rum, gin, beer, and other alcoholics, but after all, cold tea undoubtedly belongs to the same category as alcohol, opium, and the rest. It is a narcotic. It lessens the sense of fatigue simply by paralyzing the nerves which by their sensibility give warning that the time has come for rest. Tea does not give an increased capacity for work; it lessens nervous sensibility, and thereby leads to imprudence in physical effort. Dr. Edward Smith, an eminent English sanitarian, showed long ago that while one can exercise with greater ease under the influence of tea, the succeeding exhaustion is far greater than if the effort had been made with water only.

There is nothing more delusive than one's sensibilities. To imagine that one is stronger because he feels stronger is just as likely to be an error as for one to imagine that he is safe in the presence of danger because he feels safe through lack of appreciation of the risk incurred. There are numerous drugs

besides tea that banish the sense of exhaustion. Opium and alcohol do the same, but effort made under the influence of these drugs is certain to be followed by even greater exhaustion than would have occurred had the drug not been used. These facts afford food for profitable thought not only by those who regulate the diet and habits of large masses of men engaged in vigorous activity, as soldiers in camping, but also by the thousands of busy housewives who constantly resort to tea to abolish the sense of fatigue and other discomforts.

Tea drunkards are very common in England and Australia, and are getting to be not infrequent in this country. Tea drinking has been not inaptly termed "small tippling." The tea toper has but an easy step from the tea-cup to the punch-bowl.

Whisky and the Emergency Box.

A correspondent sends us a clipping from our excellent contemporary, *Men*, giving a description of the railroad emergency box which it is proposed to introduce into the railroad branch of the Y. M. C. A. The emergency box seems to be very conveniently and completely arranged, containing splints, cord, rubber tubing, gauze, lint, woolen blankets, bandages, safety-pins, etc. Snugly tucked away among these very excellent and necessary articles we notice, however, a bottle of whisky and a measuring-glass, the presence of which indicates the belief that whisky is an essential article in emergencies. No greater mistake can possibly be made.

Whisky is never necessary in an emergency. There is always something at hand which can render greater service in every way than whisky. Recent researches have shown that the administration of whisky is the worst thing that can be done in cases of collapse, shock, hemorrhage, and other conditions in which this drug is so commonly employed and relied upon as a stimulant. Whisky is not a stimulant. It is the strangest thing that it has taken the world so many hundreds of years to find this out, when its narcotic effects are so noticeable in its ordinary use; even in small doses it lessens vital resistance, diminishes the sensibility, impairs the judgment, and depresses all the vital functions.

Nothing could be more absurd than to administer alcohol in any form in case of shock in railroad accidents, or indeed in any of the occasions liable to arise in the emergencies which occur in connection with such accidents. Hot and cold water may be employed in ways to produce the stimulating effect desired, while whisky can not be so employed. It is a narcotic from first to last, and it is absolutely useless as a remedy in either health or disease.

"Indian All Face."

An Indian was asked by a white man who was muffled up and shivering in the cold, "Aren't you cold?" The Indian told him he was not; he seemed to be happy and perfectly comfortable without clothing. "Why are you not cold?" asked the white man. "Is your face cold?" returned the Indian. "No." "Well, Indian all face." He was face all over, so there was no occasion for his being cold. His arms, legs, and body were covered with the same sort of skin as that which covered his face, so those parts were as well protected from the cold as was the white man's face. It is very seldom that a white man's face suffers from the cold. People do not take cold by exposure of their faces. There are persons who take cold if they leave off their gloves, because they have been accustomed to wearing them. Such people have been brought up too delicately; they have been coddled too much, and are liable to die early, because they have not had enough of the rough-and-tumble of the world to be really fit to live in it.

The benefit to be derived from the cold weather comes from the toughening of the skin. The cold air, the cold weather, and the constant changes of temperature harden the body, and prepare it for approaching exigencies and emergencies. The same tonic effects are produced by the cold morning shower-bath. People who have become ac-

customed to this cold bath during the warm season notice the results of the treatment they have been receiving when cold weather begins. They observe that as soon as cold weather comes on, they begin to have a good appetite, there is a little higher nerve-tone, and a rapid gain in flesh and in vigor generally. Our friends make a great mistake in running away from the North too soon; they leave before they have had a touch of cold weather. But they need this touch of cold weather to help them in getting their winter constitution.

Death in the Milk-Pail.

At a recent meeting of sanitary authorities in Pennsylvania, there was a discussion of the dairy question from a sanitary and public health point of view. Dr. Thomas Turnbull, of Pittsburg, touched also upon the question of milk products as foods. He remarked: "I do not know of any particular food that is filthier than our milk products, as butter and cheese." He further called attention to the fact that creameries are the direct means of communicating disease through cattle.

The way in which creameries cause disease in cattle is by the return of the "skim-milk" to the farmers to be fed to their calves and other stock. The milk of numerous herds being mingled, it is almost certain that the mixed milk contains tubercular germs, and these may be a vehicle for communicating the disease to cattle, and through them to human beings.

This fact has long been recognized by sanitarians. The State Board of Agriculture of Pennsylvania some time ago issued a circular giving instruction respecting the prevention of the spread of tuberculosis, in which it is recommended that farmers do "not feed skim-milk from creameries to cattle." It is declared that creamery milk is a "direct source of tuberculous infection."

This recommendation is certainly wise. But how about the butter and cheese? If the milk is not fit for cattle to eat because of infection, would it be safe for the cattle to eat the butter or the cheese made from the milk, and which contains whatever germs were present in the milk? And if not safe for cattle, are these infected products more safe for human beings? Bacteriological tests have shown that tubercular germs are able to survive for weeks in both butter and cheese, hence the mere separation of the skim-milk or of the whey does not remove the risk. Indeed, the very opposite is the case, for the germs present in milk are found in greater numbers in the cream than in the milk. It is true that there is danger of infecting human beings through the infection of cows by creamery milk. But it must be equally true that there is an equal danger of infecting human beings by creamery or dairy butter and cheese.

Grotenfeld, Wall, Russell, and other authorities all agree with Dr. Turnbull that "a manufacturing plant where any food is made which is more filthy or more unhygienic than our creameries can not be found."

Sport in Killing Things.

Just now hunters are reveling in sport, so-called, as the game-laws permit the shooting of wild deer and antelope. It is said that more than four thousand hunters have crossed the straits of Mackinaw this year, going north with guns over their shoulders and murderous bullets in their pouches. Fortunately, the instinct which God put into the dumb brutes for their protection when he said to Noah, "The fear of you and the dread of you shall be upon every beast of the field," has led the deer to seek safer quarters farther north; consequently the deer are so scarce and the hunters so thick that when a man shoots at a moving object in the distance with a long-range rifle, he is almost as liable to hit a hunter as a deer. Good luck for the deer, but bad for the hunters. Nevertheless the hunters go out to kill, to shed blood; and to kill a man must be very much more exciting than to kill a deer.

This whole killing business is not sport; it is *murder*. How contemptible the attitude of a man who might be engaged in some useful active employment worthy of his intellect and abilities, but who instead sneaks up be-

hind an innocent and inoffensive, meek-eyed antelope, and plants a bullet in its brain or heart.

What is the fascination about this bloody sport that leads men to endure such hardships and run such risks to participate in it? If it is the delight of killing something, why not make a visit to the slaughter-house, and kill a few calves or sheep, at less expense and trouble? The fact is we are dreadfully depraved. There is a murderous instinct in our hearts, a vein of ferocity akin to cannibalism, which may be the vestige of the barbarism of our forefathers who roamed the British Isles in a state of savagery twenty centuries ago. And so long as we tolerate this killing of inoffensive animals for mere sport, we may expect to see the newspapers teem with accounts of murders, shooting and cutting affrays, and like exhibitions of the same brutal instinct. Which way are we going? Are we becoming more civilized, more tamed, more amiable and gentle, fraternal and peaceful, or are we reverting to the savage type?

The Cause of Bright's Disease.

That Bright's disease is rapidly increasing is a question concerning which there is no doubt in the minds of observing medical men. The cause of the increase of chronic Bright's disease is a subject that has been much discussed, and variously attributed to climatic conditions, alcohol, tobacco, and so on. It is more probable, however, that, as Dr. Gus Johnson has suggested, real degeneration is a consequence of long-continued elimination of the products of faulty digestion through the kidneys.

Fothergill affirmed that the starting-point of Bright's disease is liver incapacity. These two conditions are closely related. When the stomach fails properly to elaborate the food, and when the fermentations taking place in it are producing quantities of poisonous substances, such as ptomains and toxins, the blood is flooded with these dangerous substances, and the liver, which has for one of its functions the duty of destroying poisons, is overwhelmed by the immense quantity of toxic substances brought to it in the portal blood. The incessant and exaggerated labor required of it exhausts it, and it becomes chronically incapacitated for work. When to these poisons is added a considerable quantity of half-digested proteid matter, which must likewise be treated as so much toxic substance, it is no wonder that the liver breaks down.

It must be remembered that the liver is a closed door to poisons, while the kidneys are an open door. So long as the liver-door is shut, toxic substances absorbed from the alimentary canal can not get access to the general circulation. The kidneys are thus protected from the injurious influence of contact with these poisonous substances. But when the liver-door is broken down as the result of long-continued indigestion, especially by the free use of flesh foods, which add to the poisons of the human system those produced in another animal's body, and at the same time furnish material out of which the largest possible amount of poisons may be produced in the alimentary canal, the resistance of the liver is destroyed, and as the result such large quantities of poisonous matters are poured through the kidneys into the urine that degeneration takes place in these organs as the result of their contact with these intestinal toxic substances.

The researches of Bouchard, Rogers, and others point very conclusively to the failure of the stomach and liver as the primary causes of Bright's disease. First the stomach fails, then the liver breaks down, then the kidneys collapse, then come heart disease, dropsy, and death. The use of tobacco and alcohol, and excesses of all sorts, by impairing digestion and breaking down the general resistance of the body, prepare the way for Bright's disease as well as for other chronic maladies. Bright's disease may be fairly considered simply as nature's penalty for Thanksgiving dinners, Christmas and New Year's feasts, and other forms of gormandizing.

THE A B C OF SENSUALISM.

THE real root of the sins of gluttony and dyspepsia lies in eating for the purpose of enjoying one's self. Mother gives Johnnie another piece of pie, not because he needs it, but because he smacks his lips and says it is good, and because she thinks he will have a good time eating it. This is the A B C of sensualism. Thomas K. Beecher, of Elmira, N. Y., once said that when he was a small boy, his aunt used to give him mince pie; then, when it made him sick and she saw that he looked pale and ill, she would say, "Tommie, you look real pale; just go into the pantry and get a piece of ginger cake." He felt bad, and she did not know what else to do, so she gave him something to eat.

People used to think that when a man was sick he needed something unwholesome to eat. The thrifty housewife stored away a quantity of preserves, brandied cherries, and jellies so as to have them in readiness if some member of the family should happen to be ill. An old friend of mine, who was very fond of pie and cake, came home late one night and found that his wife had retired. Discovering no pie in the pantry, he went to the door of his wife's room and called out, "Mary, where is the pie?" Mary replied, "I am very sorry, John, but there is no pie in the house." Returning to the pantry, he made a search for cake. Finding no cake, he again sought the chamber door, and shouted, "Mary, where 's the cake?" Mary very reluctantly confessed that the supply of cake was also exhausted. The old gentleman then cried out in stern tones, "Why, Mary, what would you do if some one should be sick in the night?"

The majority of us are laboring under the delusion that food is a sort of universal panacea. If a man happens to lose his appetite, perhaps because he has eaten twice as much as he needed at the previous meal, he becomes frightened, imagines he is going to die shortly, and calls upon his doctor to give him something to create an appetite. So long as he can eat, he imagines that he is all right. If one may judge from the ordinary hotel bill of fare, eating is the chief end of life. Most people, it would seem, eat just to have a good time, and irrespectively of their physical needs. The horse knows better; he shows more judgment; he exercises "horse sense." The majority of men and women would be infinitely better off if they used "horse sense" in relation to their eating. The horse eats food that is suited to his digestive organs and his needs, not merely for pleasure, but for the nourishment and support of his body. We eat this, that, or the other thing simply because we like it, and not because of its nutritive properties or its blood-making properties; we do not ask whether it will put strength into our muscles; what we want to know is, whether it will tickle our palates while it is slipping by. So we give our stomachs an unknown quantity of work to do by sending down into them all sorts of rubbish, merely for the sake of a momentary sensation.

When a man is brought where he is obliged to use his common sense, he turns his back upon all such foolishness in regard to eating. Suppose he is preparing to start for a mining region; what does he do? He knows that he must carry his food on his back long distances, over glaciers and in the coldest climates, hence he selects the food which is the most compact, and which at the same time affords the most nourishment. But we should apply this rule to every-day experience. God made man for work; he made him to have a good time, but to have a good time in doing good to others and in being busy. You do not find birds, rabbits, or squirrels loafing around. All creation is doing things,—fulfilling missions, carrying out the Creator's commands. Man alone perverts the natural order, and turns away from wholesome living. He turns away from the "ambrosia of the gods,"—the delightfully flavored and nourishing fruits, grains, and nuts that the Creator has given us,—to kill and devour his fellow creatures.

And the root of all this evil lies in eating for the sake of gratifying the appetite,—in living to eat instead of eating to live.

THAT AWFUL STOOP.

PROBABLY the majority of civilized men and women are round shouldered or flat and hollow chested, which means the same thing, and sit, stand, and walk with the shoulders drooping, the chin hanging forward, the chest sunken. It is probable also that not one in a hundred appreciates the injury that results from this deformity; for deformity it is.

Many a physician is worried almost out of countenance with the patient who continually comes back to him with the same complaints, no matter what the name or nature of the remedies he prescribes. No change of prescription, no combination of remedies, proves of any permanent value. Worn out with theorizing about the case, the doctor finally cuts loose from all speculation, and simply brings his professional guns to bear *ad seriatim*, without special regard for the nature of the ammunition he uses, provided the patient is satisfied, and taking reasonable care that no serious harm is done. To the humiliation of our medical philosophy, it not infrequently happens that the patient does as well or better, under this bombardment of miscellaneous or inert remedies as under the most carefully compounded prescriptions.

What is the explanation of this too common state of affairs? — It is simply that the cause of the patient's malady has not been reached. In a vast number of these peripatetic valetudinarians, who wander about from one physician and one medical institution to another, the real difficulty may be discovered by simply noting the patient's attitude as he stands or sits. Observe his "doubled up" position. When he sits down, he shuts himself up like a pocket-knife. There is a hump in his back, a flat chest, a sunken stomach, and if you make him undress, you will find a protruding abdomen. A careful examination will very likely reveal deep wrinkles across the body at the waist, and on the spine opposite a perpendicular row of brown spots, each marking the location of a spinous process which has been pressing the skin against the seat-back while the patient has remained for hours daily in a doubled-up position, sitting at his work, reading, or contemplating his dismal future.

This peculiar attitude and the bodily shape described, signify the presence of enteroptosis, or prolapse of the viscera, especially of the stomach and colon, and are the cause of a vast number of chronic neurasthenic and dyspeptic symptoms, which may be at once alleviated by putting the prolapsed organs in place and retaining them there. This may be done by properly directed massage, by the use of a suitable abdominal supporter (those in common use are of little or no account in these cases), and by the employment of a well-selected course of gymnastic exercises to restore the tone of the weakened muscles, and thus enable the patient to hold himself in a correct attitude in sitting, standing, or walking. Electricity can render valuable service in the development of weakened spinal and abdominal muscles, especially the sinusoidal current, slowly alternated. Massage must be administered daily, and care must be taken to restore the prolapsed organs completely to their normal position.

Not infrequently a movable or floating kidney will be found an added factor in producing palpitations, headache, backache, and a vast number of other neurasthenic symptoms. Each viscus must be returned to its proper place, and the patient must sit and stand with the hips held well back, the chin drawn in, the chest held up and carried well forward, and must not relax completely while in the erect position. This attitude will at first be found very tiresome. It may be the patient can not hold himself erect more than a few minutes because of muscular weakness. In such a case, resort must be had to artificial aid. A combined abdominal and shoulder supporter, connected by elastic webbing, may be so arranged as to give the patient just the help he needs, which is not rigid support, but *suggestive* support, and a little help, so that the muscles may not be at once exhausted with their task.

For some years the writer has made use

of the means described in dealing with a large class of chronic invalids, and with most gratifying success. A patient who had exhausted the skill of the best nerve specialists in this country, and had traveled abroad, was cured in a few weeks by simply being made to stand and sit correctly. He has remained in health for the last five years.

Another patient said to the writer, when fitting an abdominal supporter, "What a fool I have been not to think of that before! I have been going around for the last three years with my hand in my pocket to hold my belly up." In less than three months the man was transformed from an emaciated, despairing neurasthenic to a plump, healthy, vigorous man, and resumed his business as a traveling salesman, although he had been the despair of half a score of able physicians.

It is the writer's custom to examine carefully the whole trunk in every case of chronic disease, to notice especially the position of the viscera, and to look out for wrinkles in front and "corns" on the back, as we sometimes call them in our attempt to impress the patient with the need of an immediate and earnest effort to reform his attitude.

THE CAUSE OF OLD AGE.

A FEW weeks ago we received from a subscriber to GOOD HEALTH a newspaper clipping entitled "Old Age Is Curable." The writer of the article referred to maintains that old age, which is known to all physiologists to be directly due to a degeneration and shriveling of the arteries, may be cured by the administration of acid phosphates and other drugs, and especially by discarding the use of vegetables. French physiologists long ago pointed out the fact that a man is as old as his arteries; that is, so long as a man's arteries remain soft and elastic, he can not be said to be old.

There is, no doubt, great truth in this assertion, but the practical point is: How may this hardening and consequent shriveling of the arteries be prevented? in other words, how may old age be held at bay? The theory advanced by the writer of the article referred to is that hardening of the arteries is largely the result of the use of vegetable food, which is said to contain a larger proportion of earthy salts than flesh foods. This idea, however, is strictly theoretical, and no proof whatever is presented for the assertion made, while on the other hand there is plenty of proof to the contrary. The elephant, which lives upon coarse vegetables, the ash of which contains a large amount of earthy salts, is a very long-lived animal. Elephants have been known to live two hundred years. So likewise the donkey frequently lives from fifty to sixty years, notwithstanding the bad usage to which he is subjected. Herbivorous animals are generally longer lived than carnivorous animals.

The cause of old age is not the presence of earthy salts in the food, but the accumulation of waste matters in the body. Under the influence of these poisons, nutrition is impaired, the ordinary functions of life are disturbed, and the arteries, as well as other tissues, take on degenerative changes, and result in an atheromatous or a calcareous condition. The smaller branches of the arteries shrivel up, thus interfering with the circulation of the blood through the organs of digestion and the heart itself, and the mental and physical feebleness of old age supervenes, until finally some essential vital process fails altogether, and death occurs. It is not an excess of salts in the foods which gives rise to this atheromatous condition, but rather the disturbance of the nutritive processes that results from the overaccumulation of tissue poisons. It is for this reason that degeneration and old age occur much more quickly in the dog fed upon meats than in the dog or other animal fed on vegetable foods. The Pampas Indians of South America live almost wholly upon flesh. They spend their time chiefly on horseback, and seem to be quite vigorous, but are very short-lived.

The writer has met a number of cases of atheroma of the arteries, and in some he found this condition present in persons who had only reached middle age, but no case has ever been observed in which this condition was present in a person who had habitually abstained from the use of flesh food. There is no more reason why a diet of grains should produce atheroma in a man than in a horse or an ox. Neither of these animals suffers from atheroma, or premature old age, unless abused.

Man's alimentary canal is admirably adapted to the use of cereal foods; he has a saliva capable of quickly converting starch into sugar; his teeth are suited for masticating or grinding cereals; he has pancreatic and intestinal juices for the digestion of starch in the intestinal canal,—his whole structure indicates his adaptation to a diet of fruits, nuts, and grains. On the other hand, there is nothing whatever about his bodily structure which indicates that flesh enters naturally into his dietary to any extent. These theories have no foundation in sound science.

ANSWERS TO CORRESPONDENTS.

Coated Tongue.— M. E. W., Alabama, wishes to know why she can not get rid of a coated tongue. She has adopted health principles, but the coat on the tongue still persists.

Ans.— A coated tongue usually means a dilated or prolapsed stomach. It always means an infected stomach, and not only an infected stomach, but a diseased body. Germs can not grow on or in a thoroughly healthy body. It is only when the tissues and the blood are so deteriorated that they have lost the power to render themselves inhospitable to microbes, that the tongue becomes coated. A coated tongue is simply a tongue covered with a growth of germs.

Peruna.— O. J., Ohio, asks to know our opinion of Dr. Harter's Peruna. Is it beneficial for catarrh of the stomach?

Ans.— We never recommend nostrums of any sort.

Itching—Thick Mucus—Itching of the Rectum.— N. M., Michigan: "1. What is the cause and cure of an almost unendurable itching of the head and back of the neck, afterward breaking out into a fine rash? 2. Can there be a discharge of thick white mucus when only the bronchial tubes are affected? 3. What will cure itching of the anus?"

Ans.— 1. Probably an erythema, very likely arising from indigestion.

2. Yes.

3. The cause must be ascertained. Generally very hot water (temp. 140°) will afford temporary relief. The most convenient method of application is by a sponge or a soft towel saturated and held against the part. In some instances the itching is due to leucorrhea of the rectum, the skin being irritated by an acrid discharge. Internal treatment must be applied in such cases. Not infrequently itching of the anus is due to threadworms, which must be destroyed or removed by thoroughly emptying the colon with a large enema, then introducing a quart of a decoction of quassia, made by boiling four ounces of quassia chips in water.

Wild Hairs.— A little boy is greatly troubled with wild hairs in the eyelashes, as many as one hundred and twenty-five having been drawn at one time. Can you suggest a remedy?

Ans.— A surgical operation is doubtless needed.

Potatoes and Fruit.— A. R., Michigan, asks if potatoes are vegetables, and if they agree well with fruit.

Ans.— Yes, potatoes are vegetables. They do not ordinarily agree well with fruit in persons who have slow digestion.

Child and Adult.— A subscriber in Illinois wishes to know if it is injurious for a child to sleep with an adult, and if so, why.

Ans.— For perfectly hygienic conditions during sleep, each individual should sleep alone, not because one person draws vitality from another, but because of the excretions thrown off by the body during sleep, thus creating a poisonous atmosphere beneath the bed covers. The poisons eliminated by one may be absorbed by another or reabsorbed by the same individual. When two occupy the same space, the contamination of the air must be doubled.

Dyspepsia.— I. E. B., Ohio: "1. Would you recommend glycerin and hot water to be taken before meals for stomach trouble? 2. Is Bass's Pale Ale good for one suffering with dyspepsia?"

Ans.— 1. No, on general principles.

2. Yes, good for nothing. Alcoholic beverages are, of all, the most undesirable for a person suffering from indigestion.

Dreams.— B. C. M., Massachusetts, an old man, is troubled with dreams, and would be thankful to know how to stop them.

Ans.— Sleep soundly. A good way to secure sound sleep is to eat nothing later than 3 o'clock P. M. Take a warm bath, 95°, for half an hour or an hour just before retiring. If necessary, a moist abdominal bandage may be applied to the trunk. If the head is hot, raise the head of the bed six inches. If the body becomes cold during sleep, raise the foot of the bed to the same extent.

Spectacles — Constipation.— C. H. T., Illinois: "1. Would you recommend a young person of sixteen years, who has weak and inflamed eyes, to use glasses? If so, what kind? 2. What foods would be best for a person troubled with constipation, to produce fat rapidly?"

Ans.— 1. Certainly, if glasses are needed, not otherwise. An occulist (not an optician) should be consulted to ascertain what sort of glasses are required.

2. Nuts, fruits, and grains, especially nuts, or rather nut preparations, as nuts in a raw state are usually somewhat indigestible.

Immediate Reform — Pain in Side.— W. H., Ontario, a switchman, asks: "1. Which is better for a hard, habitual drunkard, to cease drinking at once, or gradually? 2. Are hurtful effects likely to follow a sudden stopping? 3. Please suggest cause and treatment of pain in the right side, almost continuous and of several years' standing, and sometimes involving the whole side. It is more acute under disappointment, but lessened by pleasure."

Ans.— 1. We have no faith in the gradual reform process. It is almost certain to fail. The drunkard, as well as the opium taker, may drop the use of his drug at once without risk.

2. Yes.

3. Probably floating kidney.

Tenderness of the Scalp.— W. E. A., California, wishes a remedy for tender scalp, which is thought to cause falling of the hair. The case is quite serious, the patient fearing all the hair will be lost. There is no eruption, but some dandruff. All remedies have failed.

Ans.— Apply a mixture of even parts of alcohol and castor-oil; shampoo with castile soap twice a week.

Dilatation of the Stomach.— C. M. M., New York, has concluded from reading "The Stomach" that he has dilatation of the stomach, and asks (1) if milk is injurious, and (2) if three pints of water a day is too much.

Ans.— 1. Milk is almost universally unwholesome in cases of dilatation of the stomach, and in many cases its effects are those of a poison.

2. The quantity of water taken daily must be regulated by the quality of the food. If one's food consists largely of fruit, the amount of water required will be small. If food is taken in a dry state, three or four glasses of water daily, taken at proper intervals after meals, will be advantageous.

Lame Feet.— An old lady in Maine, being troubled with lameness and tenderness of the feet and ankles, desires to know the cause and cure.

Ans.— It is impossible to say with certainty what is the difficulty in this case. The trouble may be flat-foot, or it may be chronic rheumatism.

Cost of Healthful Living — Bromose for Babies.— A. P. K., Ohio, asks: "How much would it cost an ordinary man to live on health foods? He has lived for months at a time on six cents a day. 2. Can one live on that food for an indefinite length of time? 3. How can bromose be prepared for a baby one year old? 4. Where can it be obtained?"

Ans.— 1. This would depend on the kind of food taken, and whether or not food is purchased in quantities at wholesale rates, or by the package at retail rates. We shall be glad to have the gentleman give us a description of his dietary for the benefit of the readers of GOOD HEALTH.

2. Yes.

3. Simply dissolve in water, boil ten minutes, and feed from a bottle.

4. Of leading grocers.

Burning of the Feet — Dyspepsia.— J. R. W., New Jersey: "1. What will cure burning and smarting of the feet? What will take the soreness out of bunions? 3. What diet should be used when one can not drink anything but milk, and that can not be used with oatmeal? Dry foods appear to agree best."

Ans.— 1. If the difficulty is due to chilblains, which would seem to be quite likely, they may be cured by bathing the feet in hot and cold water alternately just before going to bed at night. Place the feet first in cold water for fifteen seconds, then hot water the same length of time, then reverse, and so continue five or six times.

2. Soaking in hot water, and relief from pressure.

3. Thoroughly cooked cereals, as granose, granola, browned rice, crystal wheat, in addition to malted nuts, nuttolene, and similar nut prep-

arations. You will probably be able to take malted nuts dissolved in hot or cold water in the place of milk.

Soda-Water.— A subscriber in Mississippi asks if soda-water is injurious, and if so, why.

Ans.— The soda-water itself is not harmful, but the variously flavored syrups used are objectionable.

Glucose — Saccharin — Water-Lice — Feeding the Baby.— H. G. L., Kansas: "1. Is pure glucose unwholesome? 2. How does it compare with cane-sugar? 3. Is saccharin manufactured from coal-tar unwholesome? 4. Is the presence of water-lice or wigglers in cistern water proof that the water is unfit to drink? 5. Please give a reliable test for water. 6. How often should a twenty-two-months old baby be fed? 7. If he sleeps beyond the usual time for feeding, should he be wakened?

Ans.— 1. Yes; in the writer's opinion it is.

2. Cane-sugar is produced in the natural process of plant growth for the use of human beings; glucose is manufactured by a chemical process.

3. No.

4. Yes, most certainly.

5. There is no domestic test for water, which is thoroughgoing. Send a sample to the Battle Creek Sanitarium laboratory for examination. The cost will be $2. It requires a powerful microscope and other apparatus to make a proper examination of water.

6. Once in about five hours, according to the quantity and kind of food given.

7. Yes, unless the child has been so much deprived of sleep that it requires that more than food.

Garlic.— F. R., Wisconsin: "1. Is garlic a healthful vegetable? 2. Is it not true that there is very little sickness among the Hebrews who consume large quantities of it? 3. Is not their fair complexion due to its use?"

Ans.— 1. No.

2. The Hebrews do not eat pork, and have many other healthful practises.

3. No.

Catarrh of the Stomach — How to Sweat.— T. T., Pennsylvania, wishes directions for treatment of catarrh of the stomach. 2. What will induce sweating? He suffers severely with the heat, but can not perspire.

Ans.— 1. The treatment of catarrh of the stomach is, first, correct diet. Fats, meats, fried foods, all indigestibles, should be avoided. Granose, granola, malted nuts, browned rice, and similar foods must be used, also well-cooked fruits and nuttolene. Butter, milk, coarse vegetables, etc. must be avoided. Buttermilk and kumyss are sometimes useful.

2. Free water drinking, fomentations to the spine, and vigorous friction to the skin may be usefully employed in such a case.

Distressed Stomach.— A subscriber in Michigan inquires: "How do you account for a condition of the stomach which is not distressed by meats, vegetables, warm bread, pickles, or even mince pie, and yet for five years has been distressed by a moderate use of ripe sweet apples, oranges, fresh strawberries, prunes cooked without sugar, etc.? After two months' diet of dry toast, granose, a few vegetables, oatmeal, boiled rice, wheat grits, nut foods, and a free use of charcoal tablets, fruits of any kind cause acid eructations and heartburn.

Ans.— The trouble is probably with the combinations. It is possible, however, that gastritis may be present, a disease in which even a small amount of fruit acids sometimes gives rise to the symptoms mentioned. The case should be investigated carefully. An examination of the stomach fluid obtained after a test meal should be made, and the patient should, if possible, have the benefit of a few weeks' treatment in a sanitarium.

Deafness.— Mrs. J. P., Massachusetts: "My son, twenty-one years old, has been troubled with defective hearing in one ear since he was six years old. Last winter he complained of a cold, uncomfortable feeling in his other ear, and began putting cotton into it. 1. Do the symptoms in the other ear indicate rapid loss of hearing? 2. Would moving into a more healthful climate affect the good ear favorably? 3. Would anything that would increase his general health retard the disease in the ear?"

Ans.— 1. Possibly.

2. Possibly, but it is more than likely that the disease in the ear is catarrhal in character, and requires local treatment.

3. Improvement of the general health ought to produce a favorable effect upon the deafness, but if special local treatment is required, nothing else can be substituted therefor.

Diet for Dyspeptic.— A boiler-maker wishes a prescription for diet. He has a gnawing appetite, faint spells, is addicted to the use of tobacco, tea, meat, etc.; can retain no food or medicine in the stomach.

Ans.— Stop the use of tobacco, meat, tea, and all other unwholesome foods. Take malted nuts, or granose, or the two together. Try fruit juice, boiled rice, parched corn; avoid beef tea, animal broths, and all animal food. Apply fomentations over the stomach for fifteen minutes three times daily.

LITERARY NOTICES.

THE November **Atlantic** throws a strong and valuable sidelight upon many of the questions involved in the recent acquisition of new dependencies by the nation, in the opening paper by David Starr Jordon on our past and present management of Alaska. Upon educational questions, in which the *Atlantic* is always strong and interesting, the number offers three valuable papers. Hamilton W. Mabie pays a judicious and well-deserved tribute to the activity and energy of the great West in promoting educational culture by schools and associations; Professor Münsterberg shows that the proper attitude of psychology toward art is to analyze and interpret the creations of the latter and the receptive emotions produced by them; and three school superintendents detail many of the most crying evils of the public-school system, and indicate the remedies in matters which vitally concern the whole community. The lessons of the action of our navy in the late Spanish War are brilliantly discussed by Ira Nelson Hollis, whose forecast last June attracted so much attention. John Muir's "Wild Animals of the Yosemite," interspersed with lively snake and bear stories, is one of his most characteristic and entertaining papers. The instalment of the letters of Carlyle is particularly rich and impressive, covering, as it does, his mother's last illness and death, and the preparation of his "Life of Cromwell." Charles T. Copeland, the editor of the series, accompanies the letters with a brilliant sketch of Carlyle as a letter-writer.

The November **Forum** is full of timely articles. The article on "The Dreyfus Affair," by Yves Guyot, editor of the Paris *Siècle*, is the most complete *exposé* of this case which has appeared. There are several articles on the war by leading writers. The literary article is by Professor Benjamin W. Wells, of the University of the South, on "Hermann Sudermann." To those who are unacquainted with Sudermann's works, the paper will be found an interesting and useful introduction to his compositions; while those possessing even an extensive knowledge of his novels and dramatic pieces will find Professor Wells's essay an agreeable critical contribution.

Other articles in the same number are: "Some Weak Places in our Pension System,"—a scathing *exposé* by Major S. N. Clark; and "Does College Education Pay?"—which question is affirmatively answered by Professor John Carleton Jones, of the University of Missouri, who challenges Mr. Grant Allen's deprecatory remarks on university training.

The Peace Commission in Paris is described and illustrated in the November Magazine Number of the **Outlook** by a staff correspondent in Paris. The article contains biographical sketches of both the American and the Spanish Commissioners, with portraits of most of them. Jacob A. Riis, the author of "How the Other Half Lives," contributes a graphic article concerning the New York Police Department. Mr. Riis has had exceptional acquaintance with the methods of the Department, and tells the story of many individual deeds of heroism with enthusiastic praise. Edward Everett Hale gives in this issue the eleventh instalment of his "James Russell Lowell and His Friends," which will be concluded in the December magazine issue. It deals chiefly with Lowell's life in England when he served as United States Minister, and is fully illustrated. Paul Bourget, the famous French essayist and novelist, is the author of a notable story, entitled "Antigone," which portrays with exceeding charm a gracious and lofty personality. Among the illustrated articles in this number are a picturesque account of a visit to the country of Sitting Bull, by Rosa T. Shelton, with many striking pictures of Indian life from original photographs; and an article by Dr. Amory H. Bradford, on Bunyan's "Pilgrim's Progress," with special reference to a beautiful new edition soon to be published, from which some remarkable illustrations are reproduced. (The Outlook Company, New York. $3 a year.)

Self Culture, now in its eighth year, has with the beginning of the new volume in September added 32 pages, making 128 in all. Its purpose is stated to be the imparting of knowledge to its readers. It is a family magazine, with the following departments: "An Editorial Review of the World," "A Complete Record of Current Events," "The Literary World," "The Religious World," "The Educational World," "The Scientific World," "The Social and Sociological World," "Art and Music," "Home and Youth's Department," "The Business and Financial World." The publishers desire to make it a periodical that shall "help and strengthen, mentally and morally, every person into whose hands it may come. The results already achieved show conclusively that there is a large field for a magazine whose mission is to interest and inform its readers, and not merely to afford entertaining and amusing matter for 'whiling away' one's time." Not the least interesting fact regarding this publication is that its low price

— one dollar a year — places it within the reach of all. Subscriptions may be sent through any newsdealer or to *Self Culture Magazine*, Akron, O.

The New York **Independent,** the leading weekly newspaper of the world, and one whose pages exercise the widest influence, is entering upon its fiftieth year of publication. The *Independent* emphasizes its fiftieth year by changing its form to that of a magazine, and by reducing its annual subscription price from $3 to $2; single copies from 10 to 5 cents. In its new form it will print 3,640 pages of reading matter per year at a cost to subscribers of $2, while the prominent magazines which sell for $4 a year, print only about two thousand pages. The subscriber to the *Independent* gets eighty-two per cent. more of equally good reading matter at one-half the cost! It is not only the leading family weekly newspaper, but by far the cheapest and best. A free specimen copy may be had by addressing the *Independent*, 130 Fulton Street, New York.

The November **Cosmopolitan** opens its twenty-sixth volume, and is crowded with interesting reading matter. "A Dangerous Mission to Spain," undertaken in the interests of America at the time Watson's fleet was expecting to be sent to the Spanish coast, is the leading article. Frank Stockton contributes one of his delightfully impossible stories,— two friendly ships made to act like enemies by the declaration of war between the United States and Spain. "Wheat and its Distribution" is discussed by Joseph Leiter, whose famous wheat deals a year ago set the whole world agape. Other articles are "In Porto Rico with General Miles," "Placer Gold and How it is Secured," "The Tragedies of the Kohinoor," "Some Types of Beauty," "The Woman of Fascination," and fiction by Harold Frederic, I. Zangwill, and H. G. Wells.

The November number of **Frank Leslie's Popular Monthly** comes to our table entirely metamorphosed. It has assumed the size and shape of the popular monthlies,— like GOOD HEALTH, — and contains some valuable reading. One article is especially worthy of mention,—"Clara Barton to the American People," by the Rev. Peter MacQueen, who reported it especially for this magazine. In the interview Miss Barton describes the entrance of the Red Cross ship, "State of Texas" into Santiago harbor the very day of the surrender. She says: —

"On, on we sailed, under the great guns of the Morro, past the ruined hulks of the 'Reina Mercedes' and Hobson's 'Merrimac.' The glorious tropic sun was mantling all the hills with gold and bathing all the valleys in peace. Yet on she rode, a black ship bearing comfort. We looked back to see if Sampson would not come riding up the bay as a conqueror. But still he came not. No craft save that one stately black ship, which carried neither gun nor armor. The great Sierras grew more pale, and yet no coming of any vessel but our own. We reached the dock; we moored. No ships were near. In the city the silence of the deep. No armorclads in sight — only a black ship bearing comfort.

"Spontaneously some one on the deck began to sing, 'Praise God from whom all blessings flow.' The grand old hymn was taken up by the Red Cross staff, by the crew, by every one on board. It showed how full our hearts all were. Then, as if to round it off and make it yet more appropriate, some clear, sweet voice began, 'From Greenland's icy mountains, from India's coral strand.' You know the shore formation here is coral, and we sang that hymn with all our souls in it. Then darkness fell, and all was still; the tropic night came on, so beautiful and sown with stars. It was a new era in history. So shall they say to future centuries did the Americans conquer Santiago."

The issues of the **Youth's Companion** for the four weeks of November contain a number of unusual features. Frank R. Stockton contributes a humorous paper, "Some of My Dogs;" Rudyard Kipling's new story, "The Burning of the *Sarah Sands*," is in the November 10 number; Lord Dufferin relates some of the sensational experiences of a pleasure trip in war time in "My First Cruise," in the issue of November 17; and to the Thanksgiving Number (November 24) Mary E. Wilkins contributes a glimpse of the good old times in her sketch of "A New England Girl Seventy Years Ago."

Table Talk constantly grows in value and attraction to the practical housekeeper, in whose interest it is published. It treats of the best methods of preparing, cooking, and serving food. It gives large space also to the literature of home-making and home-keeping. The November number is filled with things seasonable. "Medieval Sweetmeats," by Martha Bockée Flint, treats of cooking with the recipes of centuries ago, and is amusing and interesting. "Anticipating Christmas," by Mrs. Burton Kingsland, will be helpful to many. The Housekeeper's Inquiry Department is full of information on subjects that perplex the housewife. The menus for Thanksgiving dinners will be sug-

gestive in preparing the feast for that day of family home-coming. Other articles are entertaining and informative to the busy home-keeper. (Table Talk Publishing Co., Philadelphia, Pa. Sample copy free.)

"When not deep in meditation, or roused to anger by stupidity or impertinence, Wagner may well be said to have been boisterously gay," writes Houston Stewart Chamberlain, of "The Personal Side of Richard Wagner," in a late **Ladies' Home Journal.** "This was, so to say, his normal state when in society, which accounts for his being so much beloved by children and by animals; hence, also, he never could endure the society of pedants and seekers for notoriety. The men he preferred were those full of fun and repartee; the ready wit of a peasant entertained him more than the learned sayings of a savant. He walked very fast, scrambled up mountains like a chamois, and was particularly fond of long excursions on foot. Being very small in stature, and wiry, he preserved his extraordinary agility up to the very end. As a youth he was renowned for gymnastic feats, and at sixty years of age he used still to climb tall poplar trees and to frighten his family by all sorts of daring antics. Even within a year of his death he would occasionally, when in high glee, astound his sedate German friends by suddenly standing on his head or by playing leap-frog over the armchairs of his drawing-room."

Scribner's for 1899 announces a partial program of choice literature, including articles on the War by Col. Theodore Roosevelt; Robert Louis Stevenson's Letters; Senator Hoar's Reminiscences; stories by George W. Cable, Joel Chandler Harris; "Q," Rudyard Kipling; Mrs. John Drew's Reminiscences; The Slave-Trade in America; Musical Impressions of Sidney Lanier. C. D. Gibson will be a frequent contributor of drawings, and Henry Mc Carter and Walter Appleton Clark are also engaged in art work for the magazine. (Charles Scribner's Sons, New York. $3 a year.)

In response to the demand of its readers, **Success,** that splendid magazine for wide-awake people of all ages and occupations, is to be issued weekly, beginning with December 1, and at the very low subscription price of $1.50 a year.

The recent threats of a new outburst of Vesuvius give timeliness to an article by H. J. W. Dam on "The Mystery of Vesuvius," appearing in the November number of **McClure's Magazine.** Mr. Dam and the artist, C. K. Linson, made a recent exploration of the volcano, for *McClure's;* and the article embraces much new information thus gained. It is illustrated from special drawings made by Mr. Linson on the spot.

Exercise is one of the essentials to healthy existence, and whoever marks out a path along true lines in this branch of human knowledge is deserving of thanks. This Miss E. Marguerite Lindley has done in her book, **Health in the Home.** A few chapters are devoted to anatomy and physiology, and then the author takes up a system of exercise, giving prescriptions for home use in such a plain, simple way that any intelligent person can easily follow them out, and receive the benefit of systematic physical training without the aid of a teacher. (Published by the author, Murray Hill Hotel, New York. $2.)

Rational Hydrotherapy, by J. H. Kellogg, M. D., superintendent of the Battle Creek Sanitarium, member of the American Medical Association, the American and British Associations for the Advancement of Science, Société d' Hygiène of France, etc., author of the "Art of Massage," "Home Hand-Book," etc.

The author of this work has devoted twenty-five years to the study and practise of rational hydrotherapy, and has had the largest opportunities for becoming practically familiar with the application of water as a therapeutic agent. This work is not simply a description of baths, but is a thorough and well-digested treatise upon the physiological principles of hydrotherapy, and enters thoroughly into the details of its therapeutic uses. In the writing of this book the author takes for the foundation of his work, not simply clinical experience, but the carefully digested results of extensive laboratory researches. As the result of many years of labor, research, and observation, it is believed to be the best epitome of rational hydrotherapy at its present stage of development. The work will be supplied with numerous illustrations, showing every practical detail of hydrotherapeutic applications, and is intended for use as a text-book for those who wish to become practically familiar with hydrotherapy, rather than as a mere reference book.

The manuscript is in the hands of the printers, and the work will issue in a few weeks. Modern Medicine Publishing Co., Battle Creek, Mich.

HOW I GOT REFORMED.

EUGENE CHRISTIAN.

WE had about finished dining in a New York café; bloody bovine bones and several empty Sauterne and Werzberger bottles were in the wreck before us. Merangoes, Chili concarne, Worcestershire and tobacco, pickles from Pennsylvania, and caviere from far-off Russia, lobster *a la* Newburgh and lobster with the claws on, oysters, shrimps, clams, and other slimy creeping things from the bottom of the sea had all in their turn disappeared.

We were having a good time,— what was termed an elegant dinner. While engaged in disposing of Roquefort cheese and black coffee, with a black Havana cigar thrown in as a sort of lagnappe, I was seized with a kind of mental depression — a sort of hallucination that something horrible might happen. For months afterwards I alternated between a fairly sane condition and this fitful slough of despond, never once dreaming of the real cause — never once thinking that I was merely paying the penalty for years of violation of nature's sacred laws. A careful diagnosis, however, proved that mine was a case of chronic indigestion, which had assumed a nervous form, superinduced by improper and unnatural diet.

A friend of mine in Washington, D. C., who had taken a term of treatment at the Battle Creek Sanitarium for the same disorder, hearing of my condition, sent me a dozen pounds or more of the Sanitarium cereal food, with instructions as to its use. His instructions were about as follows: "Now let me tell you something. If you will try this and be honest with it, and not expect it to do all the work, but do some of it yourself, it will cure you. What you ought to do and must do to get the best results from the use of this food is this: Quit eating meat, for devouring other animals is unnatural and barbarous. Quit coffee and tea and ice-cold drinks. Take no intoxicating beverages, and quit the nasty use of tobacco short off. Now don't say, like a little sissy, that you can't do these things, but do what I tell you to, for just thirty days, and you won't need any more persuasion."

I took my friend's advice, and in the meantime made a careful study of the science of eating, or what constitutes a perfectly natural diet. I was

rewarded by a return of both physical and mental strength far beyond my former measure. Now thoroughly interested in dietary reform, or the reform that had been prolific of such splendid results in my own case, I made a careful study, while on an extended trip over the South a few months since, of cases and causes of a similar character. It is entirely within the bounds of truth to say that I found more than fifty per cent. of those to whom I talked, suffering from some form of indigestion or stomach trouble. I straightway assumed the rôle of an apostle of Battle Creek. I had discovered a good thing, and wanted everybody to have some of it.

One case in particular is worthy of mention. I called on an old friend of mine, a Cuban, and a Florida cigar manufacturer. I found him nursing a duplicate of my New York attack, only in a much more intensified form. It is a custom among these manufacturers to keep black coffee on tap all day at their factories. To a dozen cups a day of this they add about twenty pure Havana cigars. If the reader will stir into this dual compound my New York spread, with a liberal portion of "hot stuff," he will have a close resemblance to the daily bill of fare of the average "good liver," especially in the seacoast cities.

I wrote to my Washington friend to send $10 worth of Battle Creek Sanitarium health foods to the rescue of my shipwrecked friend in Florida. Two months later I met my Florida friend in New York. His glad greeting was, "You saved my life."

Living now in an entirely new realm, upon nature's fattening fruits, nutritious nuts, and golden, health-giving grains, I can not resist sometimes comparing the old with the new. Wicked though it may be, I can not help comparing a damsel sallying forth in the early morn, when the birds are singing to their mates, and all is happy and joyous, with a murderous machete in hand, seeking what animal she may devour, with another modest, shrinking maiden plucking the purple grape or the blushing June apple, laden with drops of diamond dew that have gathered from the God of day the prismatic colors of the bow of peace.

The bloodiest Bushman that ever crept through the jungles of Tasmania, armed with a boomerang, hunting another Bushman for his breakfast, would be thoroughly satisfied with the sight of one of our modern slaughter-houses.

There will in the far future be an age of civilization when the pen of the historian will point backward to this era in language like this: "It is evidenced by the literature and customs of that day that the people of the American Republic at the close of the nineteenth century believed, as did the Romans of the Augustan age, that they had reached the highest degree of civilization, while in truth, most of their customs were directly linked to the Dark Ages; through their entire epicurean, industrial, social, and financial fabric the dark shadow of barbarianism is distinctly traceable."

WESTERN CANADA'S RESOURCES.

One of the Best Grain Exhibits ever Made in the United States.

THE thousands of people who visited the State Fair, held at Grand Rapids, as well as the county fairs throughout the State, were given the opportunity to see an exhibit of grains and grasses and other products of the farm that seldom occurs. The exhibit spoken of was one that was made by the Government of the Dominion of Canada, for the purpose of demonstrating to the people of Michigan that outside of the limits of their State and in western Canada there was rapidly developing a country that would easily maintain all the surplus population of the overcrowded east. The exhibit was certainly a revelation to those who have never visited the provinces of Manitoba, Assiniboia, Alberta, and Saskatchewan, where the grains and grasses were grown. The quality of the straw, the length of the grain heads, the excellence of the grasses, all showed how remarkable must be the nature of the soil and the climate that could produce such. The threshed grains comprised the No. 1 hard wheat for which that country is so celebrated, some of it weighing as much as sixty-five pounds to the bushel. One of the samples shown was taken from a field yielding forty bushels to the acre, it being the sixth successive crop of wheat grown on that field. This is said to be an ordinary occurrence. The oats, both in the straw and threshed, were such as have never been seen at a Grand Rapids Fair. While the barley was plump, heavy, and bright, there were also peas, flax, and other products of the field equally to be admired. The display of vegetables was excellent, the onions being as large as the celebrated Spanish article, the celery causing many a housewife to envy it, while the potatoes, turnips, tomatoes, cabbage, and cauliflower were fit for exhibition in a seedman's window. There were also shown specimens of the soil, which, Messrs. McInnes of Detroit, Caven of Bad Axe, and Grieves of Mt. Pleasant, the government agents who were in charge, explained, was the only soil capable of producing such a rich production as this exhibit certainly was. Of course the object of making the exhibit was to interest those desiring new homes or who wished to better

their present condition. It is said that fully five thousand heads of families have gone from different States of the Union and settled in western Canada this year. They are now sending back glowing reports of the country. Excursions leave twice a week for Winnipeg and Edmonton, and the government agent will be pleased to send pamphlets and other information to those requesting it, by addressing him as above.

THE HAWAIIAN ISLANDS.—The Chicago & North Western Railway has issued a booklet with the above title, giving a brief description of these islands, their topography, climate, natural resources, railways, schools, population, etc. It contains a folding map, and mentions the various steamship lines plying between the Pacific ports and the islands. Attention is also called to the unparalleled facilities offered by the North Western Line, the Pioneer Line west and northwest of Chicago, for reaching San Francisco, Los Angeles, Portland, and other western points. The booklet will be sent to any address upon receipt of four cents in stamps by W. H. Guerin, 67 Woodward avenue, Detroit, Mich.; or W. B. Kniskern, 22 Fifth avenue, Chicago, Ill.

A Hotel on Wheels.

The managers of the Grand Trunk Railroad are determined to keep in the front rank in all branches of railroad enterprises which concern the comfort of the traveling public. They have recently made a noteworthy addition to their managing force in the appointment of Mr. J. Lee, late manager of the Windsor Hotel, of Montreal, to direct the dining-car services of this great system. They propose to give travelers in their magnificent dining palace as good a cuisine service as can be found at the best city hotels.

THE Chicago & North Western Railway, a through line between Chicago and Minneapolis or Duluth, has issued another brochure descriptive of its famous North Western Limited. This train leaves Chicago at 6.30 P. M. daily, and for luxury of appointments it is unsurpassed. The equipment consists of compartment and sleeping cars, dining cars, buffet, smoking, and library cars, and coaches. The whole train is lighted by electricity, with specially brilliant lights on the outside of each vestibule. The pictures shown of berths, lavatories, private compartments, library, and reading rooms, are very enticing.