GOOD HEALTH.

A JOURNAL OF HYGIENE.

MENS SANA IN CORPORE SANO.

VOL. 15. BATTLE CREEK, MICH., MAY, 1880. NO. 5.

BIBLE HYGIENE.

BY ELDER JAMES WHITE.

SWINE'S FLESH.

LAST month we called attention to the distinction between the clean and unclean beasts, which dates back as far as the flood. Among the unclean beasts in almost universal use as food in our time is the swine. We speak particularly of this because of its nature and very common and abundant use by Christians. These profess to receive the word of God as a rule of faith and practice, and yet that very word says of the swine, "It is unclean unto you. Ye shall not eat of their flesh, nor touch their dead carcass." Deut. 14:8. If it be said that this prohibition is Jewish, and, therefore, not binding upon Christians, then we reply,—

1. The distinction between the clean beasts and the unclean, recognized at the flood, long before the existence of a single Jew, was established upon the very character of God's living creatures. This distinction received the sanction of law in the days of Moses; not, however, because God would have an arbitrary rule for the Jews for sixteen centuries, but because those things forbidden were of themselves unclean, and abominable for man to use as food.

2. The character of the swine is plainly given as the reason why the Hebrews should not eat of it, nor touch the dead carcass. "*It is unclean unto you.*" With this agree the words of the prophet, which class swine's flesh with the broth of abominable things. If it be said that these words were given through Jewish prejudice, then we reply that it is the great God that speaks. He changes not and never speaks from prejudice. Hear him:—

"I have spread out my hands all the day unto a rebellious people, which walketh in a way that was not good, after their own thoughts; a people that provoketh me to anger continually to my face; that sacrificeth in gardens, and burneth incense upon altars of brick; which remain among the graves, and lodge in the monuments, which eat swine's flesh, and broth of abominable things is in their vessels." Isa. 65:2–4.

"For, behold, the Lord will come with fire, and with his chariots like a whirlwind, to render his anger with fury, and his rebuke with flames of fire; for by fire and by his sword will the Lord plead with all flesh; and the slain of the Lord shall be many. They that sanctify themselves, and purify themselves in the gardens, behind one tree in the midst [marginal reading, one after another] eating swine's flesh, and the abomination, and the mouse, shall be consumed together, saith the Lord." Chap. 66:15–17.

The candid reader, after a careful examination of the chapters from which we have quoted, will entertain doubts as to their application to the Jewish age. In fact, it is evident that they apply to the present age, and that the last quotation, with its threatened judgment for sins, such as eating swine's flesh, applies definitely to the close of the present age.

Dr. Adam Clarke once said that if he were to offer a burnt-offering to the devil, he should choose a pig stuffed with tobacco.

And when invited to ask the blessing at the table, he used these words: "Lord, bless this bread, these vegetables, and this fruit; and if thou canst bless under the gospel what thou didst curse under the law, bless this swine's flesh."

God said of the flesh of swine in the days of Moses, "*It is unclean unto you.*" What change can have taken place to make it clean, and a proper article of food for Christians? Has God changed his mind on the subject? Has man so changed that what was unclean as an article of food for the Hebrews is clean for Christians to eat? Or, has the change taken place in the nature of the pork? Has the change from the Jewish dispensation improved the nature of hogs? Did the death of the Son of God sanctify the swine? And does the freedom of the world-wide proclamation of the glorious gospel of Jesus Christ give liberty to Christians to eat those things which were an abomination if eaten by the Hebrews?

"But did not God make the swine?"

We reply that he did; and that he also made dogs, cats, rats, mice, and toads; not, however, for Christians to eat.

"Then for what was the swine made?"

We may not fully understand why God made rats, lizards, hogs, and rattlesnakes. And we are very grateful that we are not obliged to eat all the brutes and reptiles for which we cannot definitely assign other uses. But swine's grease is used extensively to lubricate carriage and railroad car wheels. And the swine's nature and taste adapt him to the important office of a scavenger, to gather up the filth, and thus prevent impurities in the atmosphere.

The swine delights in filth. He revels in it. He is happiest when nearly buried in it, or satisfying his vile taste with most horrible rottenness. If, by chance, he meets a fellow swine that has lain dead a week, until the carcass has become a blackened mass of putrefaction, he will delight his taste, fatten on carrion, and hold jubilee. He devours that with the keenest relish which is most in harmony with his gross nature.

And, more, the swine is an absorbent. Through his lungs, and the pores of his skin, he takes in miasma, as a sponge absorbs water. His taste and his smell are in harmony with the most abhorrent rottenness.

As a scavenger, the swine takes into his brute system, from the filth he eats, and from the corruptions he delights to breathe, until every particle of him contains the deadly infection. And then, Christian men and women, in their turn, do him the honor to become scavengers to the swine, in serving up the flesh of his abominable dead carcass as an article of food.

And how very careful and prudent these Christian people are not to waste any portion of the precious swine. They will use his heels, whence issue the grossest secretions from his corrupted blood, and his snout, which never blushed or turned aside when coming in contact with the most disgusting corruptions, for souse. Some will recognize more of the delicious in a roasted pig's tail than in a pint of ripe strawberries. And lest a precious scrap of the swine should be left, they even use his miserable intestines for sausage cases.

The terrible influence of swine-eating upon the human system is beyond description. The word *scrofula*, which represents a nearly universal disease in our day, the almost endless varieties of the taint of which may be named legion, comes from the Latin word *scrofa*, which signifies "a breeding sow," the mother of abominations. And it may be a question whether the word, or the terrible disease signified by it, would have had existence, had man never eaten swine's flesh.

The very character and disposition of the swine accords with his gross habits and diseased flesh. We do not say that the moral evil of swine-eating is proportionate to the physical; but we do say that the very close connection of physical and mental, of matter and mind, would lead one to conclude that the moral evil would run very nearly parallel with the physical ruin. At least, the character of the swine is illy complimented by the poor devils, as Christ was about to cast them out of the man from the tombs, who, seeking their affinity, "besought him, saying, If thou cast us out, suffer us to go away into the herd of swine."

GREATEST DANGER OF R. R. TRAVEL.

To the conductor's mind, the comfort of the car depends upon the temperature. A warm car, or more commonly a hot car, is the one desideratum, albeit the warmth is the product of animal heat from fifty bodies, many of them not very clean, and of exhalations from fifty pairs of lungs, with little chance for the escape of vitiated air, or the ingress of pure air—a condition of things tending to produce a state of "blue blood." When the life-current comes up to the lungs to be changed from blue to red, to throw off there the carbonic acid and take in ogygen, if there is a lack of sufficient ventilation in the car, or sitting-room or sleeping-room, the blood cannot undergo this vital transformation. It goes back to the heart, and from thence is pumped through the arteries from crown to sole, throughout the complicated mesh-work of the capillaries, in a state entirely unfitted to perform its functions of supplying oxygen to all parts of the body, of carrying off the waste particles resulting from the "never-ceasing death" of the atoms composing the body, and of replacing these with fresh, living atoms.

ANATOMY, PHYSIOLOGY, AND HYGIENE.

BY THE EDITOR.

DEFINITIONS.—*Anatomy* is derived from two Greek words which literally signify to cut, or dissect. The word is used to designate the study of the form, structure, and other apparent properties of organized bodies, whether animal or vegetable. In our use of the word it will be confined to the study of the human form. *Comparative anatomy* is the study of each separate organ of an animal as compared with corresponding organs in other animals; this is one of the most fascinating and instructive branches of science. Our space will not allow of the extended study of this division of anatomy, but we shall call attention to some of the more interesting and important points connected with the subject.

Physiology is a term derived from two Greek words which literally mean a description of nature. When first coined by the ancient Greeks the word meant essentially the same as does the term *physics* at the present day. The philosophers of ancient Greece led their pupils about among the fields, through forests, and beside the lakes and rivers of that picturesqe country, discoursing of the various animals, plants, rocks, and other natural objects which attracted their attention. This was a literal study of nature, and the study was called physiology. The term is now used to denote the science of the functions of living creatures. We have *vegetable physiology* as well as *animal* and *human physiology*. There is also *comparative physiology*, the complement of comparative anatomy, already defined, which relates to the comparative study of the functions of various animals.

Hygiene is a word taken directly from the French language. It is used to signify the study of those laws which relate to the healthy action of the various organs of the body. It is one of the most important and practical of all the subjects with which we have to deal, and will receive a proportionate amount of attention, both in connection with the study of the anatomy and physiology of the several organs of the body, and in chapters especially devoted to the subject.

MATTER THE BASIS OF EXISTENCE.—We are shut up to the conclusion that *matter is the basis of all existence*. We do not affirm that there is no other than material existence. We know that there must be, since ideas, qualities, and all abstract things exist, though immaterial; but still, science recognizes matter as the basis of all, since abstract existence is only possible through the relation of abstract to concrete things. To illustrate, sweetness cannot exist independent of some sweet thing, and depends for its existence upon that object. So with all other properties, qualities, and relations. Science does not deny the existence of other than material entities, but does declare its inability to recognize them, since it can deal only with material things, which must be evident to all when it is recollected that man possesses only seven senses, none of which are capable of recognizing any other than material objects. Any knowledge of immaterial objects must be obtained elsewhere than through scientific investigation. In this, all scientists are agreed.

THE NATURE OF MATTER.—All the evidence we have on this subject points to the conclusion that all material things are composed of infinitely small particles which are indivisible, and which possess certain properties common to all forms of matter. For instance, we will suppose that we take a rock and grind it into an impalpable powder. Now we will take as small a quantity of this dust as will adhere to the point of a pin. Placing it upon a perfectly clean slip of glass, we will look at it with a powerful microscope. The invisible particles now appear each like a great rock rivaling in proportions the original mass. Now, by means of delicate appliances, we will divide one of these portions into particles so fine as to be indivisible even with the microscope employed. A much more powerful instrument still brings them into view. Another subdivision by chemical

FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

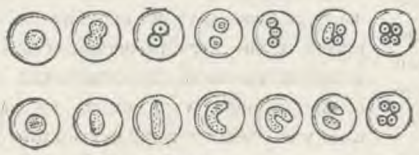

FIG. 5.

FIG. 6.

FIG. 7.

FIG. 8.

Figs. 1 and 5 represent cells in different stages of development. The dark bodies occupying the centers are nuclei.
Figs. 2, 3, and 4 show different varieties of cells.
Figs. 5, 6, and 7 show how cells divide or multiply.
Fig. 8 is a representation of the manner in which cells unite by their arms to form capillary vessels.

means places the particles beyond the power of any microscope, yet the spectroscope will still discover their presence, so that we know they are not lost. So far as our knowledge goes, no further subdivision can be made, and the ultimate, invisible particles are known as atoms.

Atoms do not exist separately, but are combined in groups, which are known as molecules.

The size of atoms cannot be accurately known; but it has been determined within certain limits by calculations based on very probable data, the results of which seem to show that if an apple were magnified to the size of the earth, the atoms which compose it would be not larger than cricket balls nor smaller than fine shot.

FORCE AND ATOMS.—A mischievous doctrine has been taught from early ages down to the present time respecting the nature of force and its relations to matter and material objects. The ancient and popular view has been that force is a separately existing something which operates upon matter and material objects, producing all the various changes and operations observable in matter. Science has in modern times thoroughly exposed the fallacy of this theory. What evi-

dence we have on this subject goes to establish the view that force is but a property of matter, and that it is inseparably connected with matter. That matter and force are inseparable is quite patent when we attempt to conceive of either one as existing alone. Such a conception is as impossible as the formation of an idea concerning a thing which is utterly devoid of properties.

It is further established by philosophical research that each atom possesses a certain definite amount of force, which is of necessity unchanging. This force may be sometimes active in one way, and sometimes in another, but is always present.

We do not need to trouble ourselves with the various theories respecting the exact nature of atoms, since the general principles laid down hold equally good with all. Whether atoms are hard, indivisible particles, or whether they are something different, does not matter, since we do know that they possess certain definite properties, many of which have been determined. It may be, indeed, that, as not a few eminent philosophers have supposed, there is but one fundamental atom and one primary force; still, our reasoning holds good.

ORGANIZATION.—As matter is the basis of material existence, so organization is the basis of life in its great diversity of forms. This question has been the subject of an almost endless amount of discussion, which we shall not attempt to review here. We will simply state as before, and we do so without fear of successful contradiction, that what evidence we have on the subject leads directly and irresistibly to the conclusion that life is the result of organization, being the manifestation of the forces of nature connected with matter, modified by a peculiar arrangement. This special arrangement, which occasions the peculiar manifestations constituting the phenomena of life, is what is known as organization. All that makes a plant different from the soil out of which it grows, and the air and water which nourish it, is the peculiar arrangement given to the various elements which are taken in from the surroundings of the plant. The organization of a plant is analogous to the organization of an army or a government, simply an arrangement of the component parts. Each particular plant has its own peculiar arrangement, just as each particular government has its peculiar organization. Destroy the organization, and the life which depended upon it is also destroyed. What is true of a plant is also true of an animal, and of a human being.

LOWEST FORMS OF LIFE.—A little speck of scum from a stagnant pool or a drop of slime from a moist rock by the sea-shore, when viewed with a good microscope, is seen to be almost wholly made up of minute living organisms. Stagnant water always teems with these low forms of life. In some localities the bottom of the sea is covered with them. Some of the simplest forms of these minute organisms are mere specks of life which do not differ much in appearance from particles of dust. Indeed, eminent observers have not infrequently confounded these curious little living atoms with inanimate dust. A close inspection, however, shows that they possess some very different properties from dust particles; in other words, that they are alive. Other forms appear like little drops of jelly. Round, transparent, they might be easily mistaken for bubbles or masses of some gelatinous substance were it not that now and then they will be seen to move. If watched closely, it will be observed that they change their form and position, and even eat. They possess no eyes, no mouth, no teeth, no organs of locomotion, in fact are nothing, apparently, but tiny jelly drops; and yet they seem to be conscious, they move about from place to place, and feed upon the little particles with which they come in contact.

Here is life in its most lowly form. It is not hard to think that these tiny creatures, so like the inanimate particles with which we are familiar in the study of chemistry and physics, are but unique arrangements of the same matter which in other forms obeys the well-known laws of matter in its simplest forms.

THE BASIS OF LIFE.—The little jelly drop sustains to higher organisms the same relation that the atom does to all other forms of matter. It is the basis of life. *Protoplasm* is the technical term which scientists apply to the atom of living forms. Out of these simple forms of life all higher and more

complex organisms are formed. This is true of animals as well as vegetables. Take a man in pieces, and he will be found to be made of similar masses connected together by various devices. Dissect a tree, and the same will be found to hold true. Examine a drop of blood with a microscope, and it will be seen that the blood is simply a stream in which are floating, swimming, moving, and working, millions of little creatures so nearly like the microscopic creatures found in the scum of a stagnant pool that they have received the same name. The arteries and veins of the body may be looked upon as corresponding to the rivers and streams of a continent, and the blood corpuscles to the fish which swim in the waters.

THE SCALE OF BEING.—Man must be looked upon as a part of the great world of life. He is not a distinct and wholly unique creation, totally unlike all other living forms. The little mass of protoplasm which swims in a drop of stagnant water is at one end of the scale of being, and man, with his magnificent and wonderfully complicated mechanism, stands at the other. The two are connected by an unbroken chain of living forms which rise in complexity and superiority in regular gradations from the living atom in the speck of green scum to the human form divine at the summit of the scale.

The scale of life includes all living forms, not simply animals, as might be easily supposed. In all, protoplasm remains the same, always apparently identical, yet sufficiently different to give to the forms of life which it helps to constitute, individuality of existence and characteristic properties.

HOW PROTOPLASM WORKS.—See Figs. 1 to 8. There is nothing more interesting in all the realm of science than to watch with a microscope the operations of protoplasm. Let us study this wonderful phenomenon for a few minutes. In anticipation of wanting material for such a study, a few weeks ago we pulled a handful of grass from the lawn in front of our office, and placing it in a platter half filled with water, put it in a warm place. Now we bring out the platter and find that the grass has undergone partial decomposition. With a glass tube we draw up a few drops of the dirty-looking fluid in which the half-decomposed grass is submerged, and placing a single tiny drop upon a clean slip of glass we put it in the focus of a powerful microscope. Adjusting the glass and the light perfectly, we soon see sundry shreds of brown grass, and numerous floating particles of dust and other foreign matter of no particular interest. If we had not sought a similar view many times before, we should soon put aside the instrument and turn our attention to something more attractive; but we have learned to look a little sharper, and now we are rewarded by seeing just what we were in search of, curious little round masses so transparent as to be almost invisible. They are not very numerous, but scattered here and there about the field. Presently we perceive that some are changing their form. A moment ago the first one we inspected was as round as a watch crystal; now it has become elliptical in form. A few minutes later we look again, and it has stretched itself out into a long filament like an angle-worm. Presently it begins to draw itself up into a round mass again; and before we can write it, it has assumed its original shape, but has changed its position. That is the way the little creature moves about. It makes itself into the shape of a worm and then crawls just as a worm does, by making one end fast and drawing the rest of the body up. But what does it move about for? Why may it not remain stationary? Shortly we shall see if we watch carefully. Even now the reason is evident. Reader, just peep over our shoulder a moment. Put your eye down to the eye-piece of our microscope. Do you see the little fellow? Look sharp, and you will. A few seconds ago it was round as a full moon. Now there is a little pocket on one side. The pocket is growing deeper and deeper. What is the object of such a curious procedure? Let us put on another eye-piece. Now we have magnified the object a million times. See how much larger it looks. Now look at the pocket. The mystery is solved. There is a little speck of food which the little creature wishes to get, and so he has made a pocket to put it in. The queerest part is to come yet, so we must watch patiently a moment more. Now the mouth of the pocket is closing up. Evidently the little fellow is

afraid he may lose the precious morsel, and so he is going to shut the pocket to prevent its escape. Now the opening is closed, and before we are aware of it, the pocket itself has disappeared, and there is the little particle inside. This seems a miraculous process, but it is the peculiar way these little creatures have of taking food. When they wish to eat, they make a mouth or a stomach on purpose. If we wait a few minutes we shall see that the little particle taken in has disappeared. It has been digested. Thus the lowest forms of life can perform some of the same functions which higher animals and vegetables perform, but by much simpler processes.

The smaller living creatures are, the more remarkable seem to be their powers. As we become better acquainted with protoplasm, it does not seem so strange after all that it should be capable of making a plant, painting a flower, building a tree, or even of forming a man; and that is just what it does. How, we shall see farther on when we study the various tissues of the body. Let us now consider some of the principal differences between inorganic and organized or living matter.

THE INSIDIOUS EVIL OF TOBACCO.

I AM certain that the families of those who use tobacco are more subject to the class of diseases termed "nervous," than are those of non-users. I recall a great number of instances in which the continual suffering of women and children from headache and feeble circulation was attributable to tobacco smoke. Thousands of children are dwarfed mentally, morally, and physically, if not murdered outright, by fathers or brothers, or some friend who poisons the home air with nicotine. When the charter of our New York Medical College was granted in 1863, a medical gentleman and senator from the rural districts, who had favored the bill, sent me his congratulations, saying also, that he had an only child, a daughter six years old, whom he hoped, when old enough, would become my pupil. About a year ago this daughter, now a young lady, was brought to me, not as a pupil, but as a patient, her father reporting that she had always been too nervous to study, and that he could never trust her from under his care. Her symptoms led me to inquire concerning his habits in regard to tobacco. He was an inveterate smoker, and because his wife found the smell of it unendurable when in the house, he confined his smoking to the study, where his daughter was his constant companion. The young lady's condition was critical, the action of her heart being so irregular that she could not lie down, and thus her sleep was interfered with. Her father was alive to the danger of her condition. After I had seen her three times and made a critical examination of her case, he asked, "What do you think is the cause of her illness?" "I am sure," I said, "that her condition is due to the inhalation of tobacco smoke." After a little reflection he replied, "I believe it! Tobacco is an arterial sedative, affecting the entire circulation of the blood." Bringing his right hand down with decision, he exclaimed, "Mrs. Dr. Lozier, you have hit the cause, I am convinced, and if I should ever take up a temperance crusade, I would begin at tobacco!" Notwithstanding that the invalid is somewhat improving since being removed from a poisoned atmosphere, I fear the truth is that her constitution is shattered for life.

A few days since, a lovely young widow, almost stolid with grief, called upon me. Two years ago she married a promising young man with but one vice—that of smoking. He thought himself temperate, for he never smoked during business hours—only at home. Coming home at evening, weary, he spent the hours in their own room, and soothed his excited nerves with cigar after cigar. One evening his wife took the babe and went down stairs to make a call. On her return, in about half an hour, she found him dead. He had never been ill, and the doctors said it was "heart disease." We think that the nicotine had so stilled the arterial circulation that the muscular tissue of the heart failed to propel the blood, and a clot formed, causing fainting and death.—*C. M. Lozier, M. D., in Alpha.*

—A cubic foot of air weighs a little more than one ounce.

CAUSES OF DYSPEPSIA.*

BY THE EDITOR.

UNCOOKED FOOD.—Raw food, and food which is insufficiently cooked, is a frequent cause of indigestion. This is especially true of uncooked vegetables. Man is naturally a frugivorous animal, and is only able to make use of vegetables and many grains as food by the aid of cookery. The starch of vegetables is much more difficult of digestion than is that of fruits. All starch, in fact, is much easier of digestion if subjected to the action of heat before being eaten. By the action of heat, the starch granules, which consist of the starch proper inclosed in little capsules, are ruptured, and thus the digestive juices can readily come in contact with and digest the starch. When starchy substances are eaten raw, extra work is laid upon the organs of digestion, and indigestion follows. It is for this reason that raw fruit and green vegetables occasion so much disturbance of the stomach and bowels, these immature foods containing large quantities of starch in a very indigestible state. By cooking, unripe fruit and vegetables may be in a great degree deprived of their injurious properties. In Scotland, the eating of oatmeal imperfectly cooked is a very common practice, the result of which is an almost universal suffering from a peculiar form of indigestion due to it. Nearly all kinds of food are much more easy of digestion after cooking than before, providing the cooking is performed in the proper manner. For vegetables and grains, cooking is especially necessary.

DECAYED FOOD.—Much harm comes from eating food which has made appreciable advancement in the direction of decay. This is true of both vegetable and animal food. By the process of decomposition, poisonous elements are developed in animal and vegetable substances which do not naturally exist there. If decomposition is far advanced, these poisons may exist in such quantity as to produce immediate ill effects, sometimes occasioning death in a few hours. Instances of this sort have often occurred from eating canned meats which had spoiled, or which had been kept for a short time after opening. The practice in vogue in some countries, and to some extent in this, of keeping meat for some days before eating, so as to give it tenderness and a "high" flavor, is a most pernicious one. Better far, for health, is the Abyssinian custom of eating the flesh while still warm and quivering.

For dyspeptics, such food is especially bad, since digestion is so slow that decomposition is not corrected, as it is to some extent in a healthy stomach, by the gastric juice, but is allowed to continue with all its serious consequences. If no immediate effects are seen to follow the use of such food, the poisons generated may be absorbed and appear in some later form analogous to blood poisoning. The stomach of a hyena may be able to digest the putrid flesh of a decaying carcass; but man's stomach was not intended for scavenger use, and requires fresh, untainted food.

SOFT FOOD.—The structure of man's teeth indicates that he was intended to employ a diet consisting of food with sufficient consistency to require vigorous mastication. His jaws are armed with thirty-two strong teeth, compactly arranged in his mouth in such a manner as to make them most available for use. Obeying the general law governing all organized structures, by which organs develop or degenerate according as they are used or allowed to remain inactive, the teeth retain their health if vigorously employed in the mastication of solid food, but rapidly undergo decay when not thus used. This is well seen in cows which are fed on "distillery slops." The teeth of such animals decay and drop out for want of use, while those of cattle which keep their teeth actively employed in chewing the cud, are preserved intact. The same is true of human beings. Eating soups, gruels, and other soft food, to the exclusion of articles requiring mastication, ruins the teeth at the same time that it disorders the stomach through the taking of too much fluid and deficient insalivation. Thus we have a double cause for dyspepsia, the disorder being rendered permanent by

BAD TEETH.—This is a recognized cause of dyspepsia, which in modern times has been in some degree mitigated by the invention of artificial masticators. Defective teeth, by interfering with the complete and thorough

* Digestion and Dyspepsia: Good Health Pub. Co.

mastication of food, seriously impair the digestion. On the other hand, impairment of digestion, and perversion of the secretions, is a very common cause of decay of the teeth. Many persons suffering with disorders of digestion cannot hope to recover without giving attention to the teeth, that being necessary as the first step to be taken toward reforming the condition of the stomach. If possible, the natural teeth should be preserved, by filling when decayed, and by such other measures as any good dentist will recommend. Thorough cleansing daily, and rinsing well after each meal, are means necessary both for cleanliness and health. If the natural teeth cannot be saved and made serviceable, they should be replaced by artificial ones. No one can hope to preserve a good digestion while munching food with toothless gums, or subsisting on a dietary that requires no use of teeth.

Too Abundant Use of Fats.—Unfortunately for the poor stomach, the opinion prevails almost everywhere that food made "rich" with fat is the most nourishing. Undoubtedly, fat is an element of nutrition, and can be digested and assimilated when taken in proper quantities and in a proper manner; but the excessive use of fats of various kinds, lard, suet, butter, and other animal and vegetable fats or oils, is a prolific cause of certain forms of indigestion, especially that known as bilious dyspepsia. Eminent physiologists determined by careful experiment many years ago the fact that the large use of fats greatly diminishes the biliary secretion, the quantity of bile being diminished in some instances to a very small fraction of the amount secreted when only pure water or food containing little fat was taken.

When it is remembered that the bile is an essential element for the digestion of fat, it will be seen that a diminution of this digestive fluid in connection with the taking of an extra quantity of oleaginous matter is a most unfortunate circumstance, since it is thus absent when most needed. This fact sufficiently well accounts for the distressing symptoms which accompany the excessive use of fats by those whose digestion has been already weakened by abuse of this sort. The diminished quantity of bile eliminated by the liver is also sufficient cause for the condition established by the over-use of fats, vulgarly known by the expressive term "bilious.' The elements which ought to be eliminated from the system are retained, clogging the vital machinery, and giving rise to the many unpleasant symptoms enumerated hereafter in describing "bilious dyspepsia."

If fats are to be used at all, it is much preferable to employ them cold, as butter taken on bread at the table, rather than cooked in the food, by which the fat elements permeate and render difficult of digestion the whole mass of food.

The Use of Sugar in Excess.—While sugar, like fat, is a true alimentary principle, capable of aiding in the maintenance of life when employed with the other elements of food, used in excess it becomes a serious source of disease. Employed alone, it is utterly incapable of supporting the vital activities of the body, being, in this respect analogous to starch, its food equivalent. The popular idea that sugar nourishes the nerves or the brain, makes the teeth sound, and is both harmless and wholesome, is quite a mistake, as many an innocent little one whose fond parents shared in the general error has found out to the regret and sorrow of his friends.

The different forms of sugar, molasses, sirup, treacle, honey, etc., are essentially the same in their effects, except that molasses and honey sometimes contain peculiar elements which to some persons seem to be almost active poisons. This is especially true of honey.

The injury from the use of sugar, or other saccharine substances, is occasioned, first, by the readiness with which it undergoes fermentation when subjected to warmth and moisture. In the stomach it finds all the conditions necessary for inducing fermentation; and were it not that saccharine substances in solution are usually so quickly absorbed that it is difficult for the chemist even to detect their presence in the stomach, this change would always occur. When a larger quantity is taken than can be absorbed promptly, or when taken in such form as to make ready absorption impossible, as in the form of preserves and sweetmeats of various sorts, acid fermentation does occur, and with

serious results not only to the stomach, but to the whole system. The fermentation set up not only develops acids and gases from the sugar, but, being communicated to the other elements of the food, the starch, and especially the fatty elements, still worse forms of fermentation or decomposition occur, and the food is thus rendered unfit to nourish the body, while the mucous membrane of the stomach and intestines is irritated by the contact of unnatural corroding elements in the food; and through their absorption, the whole system becomes affected.

The excessive use of sugar also greatly overtaxes the liver, which has an important part to act in its digestion, distracting it from its legitimate function, and thus leaving the elements which it ought to eliminate, to accumulate in the system. Thus an individual may become "bilious" from the overuse of sugar as well as from excess in the use of fats.

THE CURSE OF VACCINATION.

BY WILLIAM GIBSON WARD, F. R. H. S.

"The septic surgeon—for such may be justly termed the man who needlessly introduces septic ferments into the sacred fabric of the human body."—*Joseph Lister, F. R. S. etc., in the British Medical Journal, No. 999, p. 266.*

WHAT is vaccination? We do not mean what is the operation, but what is the source of its peculiar virus? Jenner said it was the grease from the heels of a horse modified by passing through a cow. This idea has been a theme of contempt. Nearly all vaccinating medical men have repudiated it as a blunder of Jenner's. They say, We have learned much since Jenner's days. Be it so. Lately the highest veterinary authority has narrated his experience, and he gives his testimony in favor of the original idea,—that the horse is the source of the vaccine virus.

The venerable Sir Thomas Watson, who lived in Jenner's days and lives still in our time, says, in the repeated editions of his "Principles and Practice of Physic," It is a "demonstrated fact that the vaccine disease is *sui generis* and in no sense owes its origin to small-pox." Now he publishes a statement that involves that his "demonstrated fact" was nothing of the sort, only a stupid blunder! He now affirms the exactly opposite idea!

Another living author of a "Practice of Medicine," Dr Bristow, is equally unstable in his opinion. He taught one view in the first edition of his work, in 1876, but in 1878 he taught exactly the opposite view. What, then, is vaccination or vaccine virus in 1880? Anything you please, according to the authority you bow to. It may be truly said that this vagueness of theory, this change from "demonstrated fact" to obsolete stupidity, is the unchanging order of orthodox medicine. "The mechanic views of Boerhaave, the spasmodic notions of Hoffman and Cullen, the putrid doctrines of Pringle, the sympathetic theory of Darwin, each has had its day, each, among others, has influenced and *ceased* to influence the medical practice of Europe."

Orthodox medicine is avowedly not a science. It is nothing more than a crude mass of theories, some of them held by many, and opposed by many. Now one delusion is made a fashionable doctrine,—to be assailed by acute minds, and then fall into disuse and contempt and make way for another delusion to follow the same course.

"One writer (Stohl) attributes the frequency of consumption to the introduction of Peruvian bark; another (Morton) considers the bark an effectual cure; a third (Reid) ascribes the frequency of the disease to the use of mercury; a fourth (Brillonet) asserts that it is only curable by this mineral; a fifth (Rush) says that consumption is an inflammatory disease, and should be treated by bleeding, purging, cooling medicine, and starvation; whilst a sixth (Salvadori) says it is a disease of debility, and should be treated by tonics, stimulating remedies, and a generous diet. Galen recommends vinegar as the best preventive of consumption. Desault and others assert that consumption is often brought on by a common practice with young people of taking vinegar to prevent obesity. Dr. Beddoes recommended foxglove as a specific in consumption; Dr. Parr found foxglove more injurious in his practice than beneficial."

No wonder, then, that the late Dr. Gregory said "that ninety-nine out of every hundred medical facts were medical *lies*, and that medical doctrines were little better than stark, staring nonsense."

If the confusion and contradiction of medical teaching and the mutual abuse of rival medical schools were only a wordy war, then it would be of some use in affording amusement to mankind, like a comedy; but when ignorant legislatures take up a passing medical delusion and give to it the force and authority of statute law, it is the act of mere lunatics. But when it overthrows the kingship of a father in his family and takes away the authority of a father over the destiny and welfare of his offspring, and thus degrades him to the level of the beasts of the field, it is an unbearable tyranny, insulting to God and man.

No wonder, then, that Englishmen bear repeated and even ruinous fines, repeated and degrading imprisonments, rather than allow their children to be polluted by the virus of a beast, or the virus of human sores, containing every possible disease transmissible by editary influence, or infectious by inoculation.

In the United States it appears that the people, trusting to the integrity and good judgment of their legislatures, have hitherto submitted to have their children polluted and destroyed as if vaccination were a natural process, like teething! But increasing thought and increasing proofs of the deadly yet useless nature of vaccination are arousing now an opposition that will grow and conquer. Every father, nay every citizen, every patriot, every man who is ashamed and indignant at the degeneration of the human race, who is ashamed and indignant at all parents being made the serfs of medical tyranny, and the victims of a medical superstition (credence without evidence), should band together and determine at any cost—at any sacrifice—that the abomination and tyranny of the pollution of vaccination shall cease forthwith.

Any thoughtful medical man, like the one whose words head this article, when his thoughts are not in bondage to the vested interest of vaccination, can see what a fearful crime it is to introduce a septic ferment—which the vaccine virus is—"*into the sacred fabric of the human body.*" This eminent Professor of Clinical Surgery in King's College, London, had not vaccination in his thoughts when he wrote the forcible and eloquent words. Possibly he dare not from professional *esprit* use such words in relation to vaccination. But no human power can separate such burning and true words from utterly condemning the curse of vaccination.

It is easy to prove that vaccination was a fraud in the hands of Jenner. That is, that he himself did not believe in the prophylactic power of vaccination. That is, that he made knowingly false representations of the infallible power of vaccination, to gain a public reward. That these are hard words, I fully understand; but that they can be shown to be demonstrably true, I equally understand.

It is easy to prove that small-pox is Nature's remedy for a foul and putrescent state of the human system; that small-pox, even when a severe epidemic, never raises but always reduces human mortality. In short, small-pox is not the foe but the friend of man. If man will fill his system with putrescent filth by unnatural food, if he carries with him the accumulated filth of years varnished on his skin, and is compelled by unhappy circumstances to live in crowded and foul dwellings, then small-pox comes as a friend to cleanse him of his filth, or he must certainly die of typhus fever or cancer or some other deadly disease. The accumulation of such filthy people, unrelieved by small-pox, would only invite the plague or the black death.

John Howard, the great philanthropist of the world, who gave his wealth and life to cleanse European jails of putrid fevers, and the lazarettos of the East of plague, kept himself free from disease by his simple but natural diet. When on shipboard, sailing from Constantinople to Smyrna, he was sent for to come into another cabin to see a sick man. He went, for he traveled as an English physician. He saw that the man had the plague; on the back of the neck he saw the plague-spot. He went back to his cabin and told his companion, a Frenchman, "We have a case of plague on board; do you cease from flesh-eating from this moment."

Hygeia is now the goddess of municipal and national worship. But hygiene and vaccination are deadly foes. In England we have spent from one hundred and twenty to one hundred and fifty millions of money on

sanitary improvements; and after all the expense, and the cleansing, and the ventilation, our mortality is slightly increased! We have made the wolves the guardians of our lambs, and so we need not wonder at the slaughter. Our medical men are the officers of health! They draw heavy salaries to put down minor nuisances,—foul drains, unclean pig-sties, and dirty drinking-water,—and draw big sums as fees, and big sums as bribes, to slay some forty thousand infants every year! So employment is found for medical men, undertakers, and grave-diggers, at the fearful loss of human lives, and the loss of many millions of money.

Surely, there is no nobler work for the citizens of the United States than to join hand to hand with the anti-vaccinators of the United Kingdom to put down the curse of vaccination. You nobly followed our example and put down negro slavery; now follow our example and give us a helping hand to put down the serfdom of white people to the despotism of doctor-craft, and overturn the superstition of vaccination, with its numberless pollutions and its numberless slaughter of infants.

Remember that it is the duty of every citizen to transgress all travesties of law, as much as it is the duty of all good citizens to obey all just and real laws. No legislature has the power to make travesties of law,—overturning natural rights and moral principles,—and insure the obedience of a free and noble people.

All true law is an echo from the voice of God. All good law harmonizes man with man, interferes not with the virtuous, only controls the vicious; but vaccination acts are neither true nor good; to apply to them the word *law* is to degrade it.

May then the citizens of the United States be aroused to enthusiasm in the noble work of saving more lives slain by the lancet than slain by sword or gunpowder. Remember, "no heart is pure that is not passionate, no virtue safe that is not enthusiastic." Be then zealous to put down the greatest evil of our social life, to strip the hygeian's cloak from hiding the murderous vaccinator, and put down once and forever the despotism of a clique of doctors.

THE DIET OF VARIOUS NATIONS.

(*Concluded.*)

CHINA.—"Both in eating and drinking the Chinese are temperate, and are satisfied with two daily meals; the morning rice about 10 A. M., and the evening rice at 5 P. M. The only repugnance I have observed in China is to the use of milk." "I never saw or heard of butter, cream, milk, or whey being introduced at any Chinese table."—*Bowring.*

"Most of the plants that grow on the seashore are supposed to possess an invigorating quality, and are, therefore, in constant use as pickles or preserves, or simply dried and cut into soups in the place of other vegetables. The leaves of one of these, apparently a species of that genus called by botanists *fucus*, after being gathered, are steeped in fresh water and hung up to dry. A small quantity of this weed boiled in water gives to it the consistence of a jelly, and when mixed with a little sugar, the juice of an orange, or other fruit, and set by to cool, I know of no jelly more agreeable or refreshing."

"The great officers of state make use of these and various other gelatinous viands for the purpose of acquiring, as they suppose, the proper degree of corpulency."—*Barrow's Travels in China.*

"The food of these people (Chinese laborers) is of the simplest kind, namely, rice, vegetables, and a small portion of animal food, such as fish or pork. But the poorest classes in China seem to understand the art of preparing their food much better than the same classes at home. With the simple substances I have named, the Chinese laborer contrives to make a number of very savory dishes, upon which he breakfasts or dines most sumptuously."—*Fortune.*

INDIA.—"From the earliest period the most general food in India has been rice, which is still the most common food of nearly all the hottest countries of Asia. It is not, however, so much used in the south of Hindostan as formerly, and has been replaced by another grain, called rági."—*Buckle's History of Civilization.*

"The principal food of the people of Hindostan is wheat, and in the Deckan, jowár and bájra; rice, as a general article of subsistence, is confined to Bengal and part of

Behár, with the low country along the sea all round the coast of the peninsula. In most parts of India, it is only used as a luxury. In the southern part of the table-land of the Deckan, the body of the people live on a small and poor grain, called rági *(Cynosurus corocanus)*. Though these grains each afford the principal supply to particular divisions, they are not confined to their own tracts." Pulse, roots, and fruits are also largely eaten.—*Elphinstone's Hist. of India.*

CEYLON.—"The ordinary diet of the people is very meager, consisting of rice seasoned with salt, the chief condiment of the East, and a few vegetables, flavored with lemon-juice and pepper, from which they will make at any time a hearty meal. Beef is forbidden, being an abomination. Flesh is scarce, and fish not always plentiful, and when it is, they prefer selling it to Europeans to keeping it for themselves. It is considered anything but a reproach to be sparing in diet, but rather a credit to live on hard fare and suffer hunger."—*Pridham.*

EGYPT.—"The advantages of a leguminous diet are still acknowledged by the inhabitants of modern Egypt. This, in a hot climate, is far more conducive to health than the constant introduction of meat, which is principally used to flavor the vegetables cooked with it."

"Vegetables form the principal food of the lower orders, and lentils are a chief article of diet."—*Wilkinson's Ancient Egyptians.*

"The usual season for sowing the doura, which constitutes almost the whole subsistence of the peasantry, is soon after the commencement of the inundation."—*Hamilton's Ægyptiaca.*

AFRICA.—SAHARA.—"Dates are not only the principal growth of the Fezzan oases, but the main subsistence of their inhabitants. All live on dates—men, women, and children, horses, asses, and camels, and sheep, fowls, and dogs."—*Richardson's Travels.*

ABYSSINIA.—"Travelers who have witnessed their 'brunde' feasts can attest to the intoxicating effects of this kind of food, and they must have been astonished at the immense quantities that can be eaten in the raw state compared to that when the meat is cooked, and at the insensibility which it sometimes produces."—*Johnston's Travels.*

WAMRIMA OR COAST CLANS.—"Their food is mostly ugali, the thick porridge of boiled millet or maize flour, which represents the 'staff of life' in East Africa. They usually feed twice a day, in the morning and at nightfall. They employ the cocoa-nut extensively; like the Arabs of Zanzibar, they boil their rice in the thick juice of the rasped albumen kneaded with water, and they make cakes of the pulp mixed with the flour of various grains. This immoderate use of the fruit, which, according to the people, is highly refrigerant, causes, it is said, rheumatic and other diseases. A respectable man seen eating a bit of raw or undressed cocoa-nut would be derided by his fellows."—*Burton.*

CABANGO (a village situated on the banks of the Chihombo).—"The chief vegetable food is the manioc and lotsa meal. These contain a very large proportion of starch, and when eaten alone for any length of time, produce most distressing heart-burn. As we ourselves experienced in coming north, they also cause a weakness of vision, which occurs in the case of animals fed on pure gluten or amylaceous matter only. I now discovered that when these starchy substances are eaten along with a proportion of ground-nuts, which contain a quantity of oil, no injurious effects follow."—*Livingstone.*

KAFFIRS.—"The principal diet of the Kaffir is milk, which he eats rather than drinks, in a sour and curdled state. One good meal a day, consisting of the curdled milk and a little millet, is almost all he requires, and with this he is strong, vigorous, and robust, proving that large quantities of animal food are by no means necessary for the sustenance of the human frame."

"A Kaffir will never touch pork. Fish is likewise abstained from by him."—*Curiosities of Food.*

HOTTENTOTS.—"The Hottentots never eat salt among themselves, but 'they are not a little delighted with the salt and otherwise high-seasoned victuals of the Europeans.' Such food, however, disagrees with them, and those who eat with the Europeans are subject to many maladies, and do not attain a great age."—*Kolben.*

LITERARY MISCELLANY.

Devoted to Mental and Moral Culture, Social Science, Natural History, and other Interesting Topics.

MY CREED.

I HOLD that Christian grace abounds
Where charity is seen; that when
We climb to Heaven 't is on the rounds
Of love to men.

I hold all else named pity
A selfish scheme, a vain pretense;
Where center is not, can there be
Circumference?

This I moreover hold and dare
Affirm where'er my rhyme may go—
Whatever things be sweet or fair,
Love makes them so;

Whether it be the lullabies
That charm to rest the nestling bird,
Or that sweet confidence of sighs,
And blushes made without a word;

Whether the dazzling and the flush
Of softly sumptuous garden bowers,
Or by some cabin door a bush
Of ragged flowers.

'T is not the wide phylactery,
Nor stubborn fact, nor stated prayers,
That make us saints; we judge the tree
By what it bears.

And when a man can live apart
From works, on theologic trust,
I know the blood about his heart
Is dry as dust.

—*Alice Cary.*

A VISIT TO THE MAMMOTH CAVE.

LEAVING the more rapid means of transit at Cave City, we prefaced our visit to the cave by a ten miles' stage ride over the rocks and hills of one of the roughest of Kentucky roads, through a region of almost continuous forest with here and there a human habitation, usually constructed of logs and savoring so much of primitiveness we could almost imagine we were back in the "old pioneer days." Three hours of the shaking, rubbing, kneading, and vibrating of the "Swedish Movement" process would have been bliss in comparison to the jolting of our lumbering stage coach; and we hailed with joy the arrival at the hotel, situated a short distance from the cave, where visitors are entertained and provided with the necessary accouterments for a trip through the cavern. The following evening, equipped with lanterns and staves and accompanied by an old negro guide who has officiated in that capacity for nearly forty years, we visited the cave.

Of all the curiosities of nature, perhaps none more wonderful exists than Mammoth Cave. Its entrance, situated at the foot of a steep declivity, is an opening in the hillside about twenty-five feet in height by thirty in width, and is one hundred and ninety-four feet above Green River, which flows in the immediate vicinity. Earlier in the history of the cave the entrance was situated about half a mile distant from its present location, but the disintegrating action of the water of a spring, which constantly discharges its contents from the ceiling of the present opening, caused the roof at this point to fall in, thus cutting off communication with the former entrance and establishing the present one.

Passing along a narrow archway, we entered the Main Cave, which is six miles in length, and varies in height from forty to one hundred feet, and from sixty to three hundred in width. Scores of marvelous chambers, avenues, grottoes, and domes, branch off from the Main Cave at different points along the route, and springs of living water, cascades, miniature lakes and rivers, vary the scenery of this subterranean world. The floor, sides, and ceiling of the cave are in many places as smooth as if chiseled with the greatest care from the adamantine rock, in others so rough and corrugated as to appear the result of some sweeping cataclysm, while sometimes the ceilings are covered with pendent stalactites which glisten in the dim light of the torches like icicles. The route through the Cave presents a succession of exceedingly interesting and varied scenes. New beauties unfold like magic at each advance, and nearly every division exhibits some unique feature from which it derives a name.

The first item of interest is a vast apartment, called, from the arched appearance of the

sides and ceiling, the Rotunda. Its height is nearly one hundred feet, and its greatest diameter measures one hundred and seventy-five feet. Scattered about the floor are the remains of vats, water-pipes, heaps of red earth, and other material used by the saltpeter miners three-quarters of a century ago. Although constructed of wood, the vats and pipes present no indications of decay. Plainly visible upon the floor are the tracks of the wagons and the imprint of the feet of the oxen used by the miners in their labors here. Clinging, like black festoons, to the sides and ceiling of the Rotunda, were millions of hibernating bats. They enter the Cave each year at the approach of cold weather and remain until spring. The weird squeaking of these curious creatures was the only sound that broke the almost awful stillness of their subterranean home. With the exception of a few venturesome rats and eyeless fish, these are the only living inhabitants of the Cave.

Passing along to the right, we entered Audubon's Avenue, near the entrance of which are several small cottages built fifteen years ago for a party of consumptives who resorted to the Cave under the delusion that its uniform temperature and pure atmosphere would benefit them; but the absence of that one of Nature's greatest panaceas, pure sunlight, overbalanced all the advantages of pure air and equable temperature. Three of the party died there in a few weeks, and the majority of those who remained for any considerable length of time died soon after leaving. No better example of the necessity of sunlight to health and life need be presented than the appearance of those patients who remained in the Cave from three to four months. It is said their faces were entirely bloodless, eyes sunken, and pupils dilated to such a degree that the iris ceased to be visible, so that, no matter what the original color of the eye might have been, it appeared to be black.

Ascending a flight of steps, we entered the Gothic Arcade, and after passing through the Register Room, so called because upon its white ceiling, as smooth as though finished by a mason, hundreds of visitors have traced their names, with the charred end of their torches, we arrived at the Gothic Chapel. This is a large room, the ceiling of which seems to be supported by the gigantic columns of consolidated stalactites and stalagmites. When the guide, with a light he carries for that purpose, illuminated the chapel it presented a most beautiful appearance, and we were but little surprised when informed that a romantic couple, only a week previous, had chosen this place as a hymenean court.

Retracing our steps, we next visited the Methodist Church, a large division of the Cave where from the pulpit, which consists of a ledge of rock twenty-five feet in height, the gospel has been expounded, occasionally, for many years. The seats are logs and stones placed in rows, and still occupying the same position as when placed there more than fifty years ago. A meeting had been held here only a few weeks previous to our visit.

Our next entrance was into the Grand Arch, in which is found a huge rock, forty feet in length, twenty wide, and eight in depth. At the point from which it is first viewed it presents so striking a resemblance to a coffin that it is called the Giant's Coffin. On the white limestone ceiling, just above the coffin, by a remarkable freak of Nature, there has been formed, of black gypsum, a most perfect outline figure of an ant-eater. A little farther on, a group of figures may be observed upon the ceiling, formed in the same manner, and termed the Giant, Giantess, and Child. These figures are in sitting posture, and the giant appears to be tossing the child to his wife.

Leaving the Grand Arch, we passed on to the Star Chamber. This is sixty feet in height, seventy wide, and nearly five hundred in length. The ceiling is composed of black gypsum, studded with countless myriads of white points, which in the dim torch-light present so striking a resemblance to stars that when the guide, taking our lights and concealing them behind a rock, told us to be seated and look up, it was almost impossible to convince ourselves that we were not looking out upon the starry canopy of the sky instead of upon an illusive representation two hundred feet below the surface of the earth; and when the guide, by some artifice, produced a cloud appearance which seemed to pass slowly over the sky, the illusion was complete. The guide then disappeared through a lower passage-way, leaving us for a few moments in darkness the most total. The darkness seemed so dense that we almost imagined that like that of ancient Egypt it could be

felt; and the silence was so complete that we could almost hear the beating of the heart, and the surging of the blood waves against the arterial walls. The guide reappeared at length from the eastern extremity of the chamber, and as he advanced, we could almost fancy, as the dim light became more and more distinct above the miniature hills of rocks, that the morning sun was just rising.

From the Star Chamber we passed through a portion of the Cave designated as the Wooden Bowl, from the fact that a wooden bowl, such as was used in the early times by the Indians, was found here when this part of the Cave was discovered, and also because the apartment itself bears a semblance to an inverted wooden bowl.

Bottomless Pit and Shelby's Dome next attracted our attention. Contrary, however, to all preconceived ideas connected with the appellation of this pit, *this* one has a bottom at the depth of one hundred and seventy-five feet, while above it, rises Shelby's Dome to the height of sixty feet. Its width varies from fifteen to twenty feet, and is spanned by a substantial wooden bridge termed the Bridge of Sighs, from which the pit may be viewed in safety. It is supposed this pit and dome, like several others that exist in different parts of the Cave, have been cut out of the solid rock by the solvent action of water containing carbonic acid in solution. It is continually enlarging, the solid walls being gradually worn away by the water which trickles down the sides.

At Reveler's Hall, where it is the custom of visitors to take their lunch, we rested a time; then passing through a low arched way about four feet in height, appropriately named the Valley of Humility, we arrived at a circular opening through which it is necessary to descend. This opening is only about five feet in diameter, and over it leans a huge rock, which, if it were to fall, would securely close the opening; and for this reason it is termed the Scotchman's Trap.

Our next experience was in Fat Man's Misery, a tortuous, winding passage, scarcely wide enough at any point to admit of placing one foot before the other, while the solid walls on either side rise three and four feet in height, the ceiling being most of the time so low as to preclude the possibility of standing erect. But in accordance with the old saying that "there's no lane so long but has a turning" we came out at last into Great Relief, a commodious apartment from forty to sixty feet wide and twenty high. Proceeding from this point, we passed Bacon Chamber, which receives its name from the small masses of rocks hanging from the ceiling, in size and appearance resembling bacon. A short distance farther on we reached the Dead Sea, a lake of water quite as gloomy as its ancient original.

Passing the River Styx, a small stream across which is a natural bridge, we reached the Echo River, perhaps the most marvelous feature of this subterranean wonderland. Imagine a stream of water three-fourths of a mile in length, varying from twenty to two hundred feet in width and from ten to thirty in depth, with solid walls of rock on either side, and a solid sky of rock above, sometimes forming an arch scores of feet in height and again approaching so near the surface that the boatman discards his paddle and propels the boat by pushing with his hands against the jutting points upon the rocky roof o'erhead, in a region where there are no seasons, no day, no light save the shimmering light of the smoking torches, no sounds save the measured dip of the boatman's oar or the perfect echo of your own voice, and you have a meager picture of this wonderful river. Three hundred feet above, all Nature is teeming with manifold activities; here is almost "eternal sameness, eternal silence, eternal night." When there has been no rise in Green River, with which Echo River is supposed to communicate, the water becomes so transparent that rocks can be seen ten or twelve feet below the surface; a rise in Green River, however, soon causes the water to become turbid. In Echo River are found the eyeless fish. They are perfectly white in color, with only rudiments of eyes. In shape they resemble the cat fish; in length they rarely exceed eight inches. They are viviparous, and live upon the minute animalcules in the water, as do gold-fish.

The Cave extends some miles beyond the river, but as we had seen all its chief attractions, and had already traveled more than the usual distance, we did not extend our trip farther.

On our return, we passed through Cascade

Hall, which receives its name from a beautiful cascade of clear water falling from the ceiling. At another point, we listened to the Water Clock, caused by the measured dropping, once a second, of water from the ceiling upon the solid floor.

The Labyrinth and Gorin's Dome also engaged our attention. This dome is reached by passing over a small bridge, and ascending a ladder, ten feet in height, and is viewed through a natural window in the rocks. Its proportions are greater than those of the Bottomless Pit, and the farther side presents a perfect resemblance to an immense curtain extending from ceiling to near the floor.

The atmosphere of the Cave is purer than above ground. The proportion of carbonic acid is not over 2 parts to 10,000 of air, and no trace of ammonia can be found in portions of the Cave not commonly visited. The temperature is uniformly 59°, being the same summer and winter.

No description of the Mammoth Cave can do justice to its grandeur or fairly portray its manifold beauties. But having once visited it, one can but reiterate the sentiment of the late Bayard Taylor upon the occasion of a visit to the Cave, when he says, "I had been twelve hours under-ground, in which time I had walked twenty-four miles. I had lost a day, a day with its joyous morning, its fervid noon, its tempest, and its angry sunset of crimson and gold; but I had gained an age in a strange and hitherto unknown world, an age of wonderful experience, and an exhaustless store of sublime and lovely memories." E. E. K.

An Expensive Household.—His Majesty, the Emperor of China, is just now in a serious difficulty. Young though he is, he has already to maintain some seventy women of his establishment in various capacities, and, like every other gentleman who has ladies under his protection, the duty devolves upon him of clothing them. This would be a comparatively easy task were the seventy fair ones of a reasonable turn of mind. But, unhappily for the peace of the Brother of the Sun and Moon, their extravagance is pronounced to be beyond all bounds. Two hundred and fifty thousand taels, which is more than one-half of the land tax of the empire, were expended last year in silk, satin, gauze, velvet, red and gilt paper and pearls. It is said that one dress, which is in possession of an empress, was covered last year with seed pearls worked in so peculiar a fashion as to have cost a fabulous sum. With respect to this robe there are great searchings of heart. The empress is aged, though the dress is new. If she die, according to custom, it must be burned, supposing it to be in her possession at the time of her demise. She refuses to part with it, and the idea of this wastefulness, coupled with the prospect of increased extravagance in the coming year, troubles the owner of the vermillion pencil exceedingly. Contemplating the position of this illustrious personage, and remembering that, as yet, he is too young to be practically married, it is curious to speculate as to what his position will be when he arrives at man's estate, and finds himself the lord of seventy additional wives.

The Cost of Books in Early Times.—It is said the king of Northumberland in A. D. 690 gave for a history of the world, 800 acres of land; and a Countess of Anjou, date not stated, once gave 200 sheep and a large parcel of furs for a volume of homilies, and 120 crowns for a single book of Livy! In 1320, a Latin Bible was valued at $150, and this was at a time when two arches of London Bridge were built for less than $150. A laborer in those days had wages so small that the earnings of fifteen years had been necessary to buy the Bible, and the Bible being in Latin, he could not have read it after all.

The Buddhist Decalogue.—Here are the Ten Commandments of Buddha:—

I. Thou shalt not kill.

II. Thou shalt not take for thyself what belongs to another.

III. Thou shalt not break the laws of chastity.

IV. Thou shalt not lie.

V. Thou shalt not slander.

VI. Thou shalt not speak of injuries.

VII. Thou shalt not excite quarrels.

VIII. Thou shalt not hate.

IX. Have faith in holy writings.

X. Believe in immortality.

LITTLE MARY'S ILLNESS, AND WHAT CAME OF IT.

(Concluded.)

"Now, if you want to keep your other children from taking the fever, let me advise you to do two or three things," said Mrs. Symonds. "Don't be offended if I speak plainly. At a time like this it is n't wise to mince matters—it is better to speak out. Where did the children sleep last night?"

"Baby always sleeps with me," said Mrs. Willis, referring to a big fellow of fourteen months, whom little Lucy was lugging about in a field opposite, which the laundresses in the neighborhood used for a drying ground. "The other two children slept in the front room; I made 'em up a bed on the floor."

"Have n't you another bedroom?"

"Oh yes, all the houses in this row have got three apiece; but I use my third for a lumber room."

"The front-room window was n't open when I came in," said Mrs. Symonds, "but I opened it just now. I assure you, Mrs. Willis, if you do n't keep the rooms ventilated, you won't get rid of the fever. You should open them early in the morning, and keep them open as much as you can all day, not only at the bottom for the good air to come in, but at the top for the bad air to go out. Bad air rises, and so the windows must be open at the top to let it out. I was afraid that your windows did n't come down at the top, for I do n't ever remember to have seen them down."

"La! I do n't trouble," said Mrs. Willis; "I forget, that's the fact. I 've got so much to bother about besides windows."

"But then one can't be healthy if these simple little matters are not attended to," said Mrs. Symonds. "The secret of health lies in having pure air, plenty of pure water, and good food. To these three things, under God's blessing, my children owe their health and strength. I'm sure I could n't desire to see them healthier or happier."

"But what do you do to them?—what do you give them?" said Mrs. Willis.

"I'll tell you; but let me help you get your kitchen in order while we talk," said Mrs. Symonds. "Mary will be wanting you again presently, perhaps, and you will have to leave it."

"I do n't like to trouble you," said Mrs. Willis.

"Oh, it's no trouble," answered the kind woman. "I've cleared up my own place, and I came in on purpose to help you. Well," she continued, as she moved about quietly setting things in order, "I wash my children from top to toe every morning."

"Every morning!" echoed Mrs. Willis in astonishment; "however do you find time?"

"It does n't take many minutes," said Mrs. Symonds. "I've got a good-sized piece of sponge which I keep on purpose, and a large towel, and I soon get it over. Then it's so healthy for them. You know the skin of our bodies is covered with millions of tiny holes called pores, from which perspiration is constantly coming out. If we do not wash our bodies, these pores become clogged up, so that we can't perspire properly, and so we lose our health. It is very necessary that the pores should be kept open by frequent washing."

"La!" said Mrs. Willis, "I never washes my youngsters all over. Once in a way I gives 'em a treat, and puts 'em into a tub, but not above once or twice a year."

"And it is a treat," said Mrs. Symonds; "children do like to be well washed, it gives them such a beautiful healthy feeling after."

"But do n't mine kick at water sometimes!" said Mrs. Willis; "just about a bit!"

"But if they are washed so *as a rule*, they get to enjoy it," said Mrs. Symonds. The fact is, if children are not kept clean, they can't be healthy; and if they are not healthy, they are fretful and miserable, and open to attacks of all kinds of disease. Then I am very particular about the food I give the children. I do n't let them eat till they can eat no more; I give them what I think is right for them; and I watch them to see that they eat it slowly; for if children swallow down their food fast they do n't digest it, and so it does n't do them a bit of good."

"Well, I suppose that's how it is with my children; they eat as ravenous as young wolves, and yet see what thin bits of things they are! I can't watch them, you know; I

puts a hunch or two o' bread into their hands, and starts 'em off out."

"Oh, that's a pity!" said Mrs. Symonds, in great concern. "I think we ought to make meal-times happy times, by all gathering together round the table, and being comfortable. I don't know what husband would say if we didn't all sit down together."

"Ah, you see your husband comes home regular at meal-times; mine don't," said Mrs. Willis.

"But perhaps he would if you were to arrange to have everything straight and in order when he comes home," said Mrs. Symonds. "I advise you to try this plan. And now about the children: I think the wisest thing you could do would be to keep them especially clean while you have this fever in the house. Give them a good wash all over some time to-day, and change their clothes often. It isn't much trouble to wash out children's little bits of things, and they dry so fast this beautiful weather. And do keep your windows open, Mrs. Willis; let the good air come in abundantly, and the impure air go out. In warm weather I always leave the bed-room windows open just a little all night; it keeps the rooms sweet. You know our breath soon makes a room smell close and unhealthy if we stay in it for many hours, unless it's well ventilated; and if it's not ventilated—that is, the bad air carried off, and pure air brought in—we have to breathe the bad air over again, and it is quite poisonous to us. Do keep Mary's window open as much as ever you can; and if a draught seems to come to her, you might have your clothes-horse up to the side of her bed nearest the window, and hang something over it to keep the draught away. It is very cruel to keep a sick person's room close. Pure air never kills people, but many die for the want of it."

"Well, all this is new to me," said Mrs. Willis. "I never thought about ventilation, and all that, before."

"Perhaps if you had, your Mary would not have been taken with fever," said Mrs. Symonds. "I'll tell you a true story that I heard once. You know that many people sleep in beds surrounded with heavy curtains, which they draw together to keep the cold out, as they say. Then they shut the bed-room door and windows, and close up the fire-place. How a person must feel after sleeping in such a state, I can't imagine. Well, a person hung a bird-cage with a bird in it inside a bed, the curtains of which were drawn so; the room was closed up, and it was left for the night. In the morning, when the bird was sent for, it was found to be quite dead! *It had died for want of fresh air.* It is no wonder that people *linger* instead of *live*, who act in such a foolish way. If we don't get fresh air, and plenty of it, we pine and grow sickly. I firmly believe that if you were to keep your poor Mary cooped up in such air as she was breathing when I came in, nothing—not all the doctor's physic and attention—could save her. I trust now that, by proper treatment, she will get well. Keep her cool and quiet, and don't forget the damp mop in the mornings."

"Do you think, then, that them other children could be kept from catching it?" said Mrs. Willis. "I've been thinking that they surely must have it, and it has took every bit of spirit out o' me."

"You must do your best to prevent it," said Mrs. Symonds. "Let me prescribe the tub this afternoon," she added with a smile. "I'll come and sit with Mary while you wash them if you like; and then, follow up the good plan, and doctor them in this way with water every day; and let them have an airy sleeping room. These things are better than all doctor's stuff for health. Are the drains in good order in your house? You should see that plenty of water runs through them every day, or you'll be sure to have fever-smells hanging about."

"Well, I don't often think about the drains," said Mrs. Willis, "but I'll see to 'em, and mind that they're kept clear in future. I'm sure I'm very much obliged to you for coming and talking to me like this. You've opened my eyes to two or three things, and I'll take care to be more particular in future. I've never thought about good air, and being very clean, and all them things—never thought it worth while to trouble about 'em; but from what you say I can see it is very necessary to mind 'em.

P'r'aps I ought to have on a clean gown to be round about Mary?"

"Certainly," said Mrs. Symonds; "put one on if you have one. And I'd advise you to keep the children away from Mary's room. It is well to be cautious; though if you doctor them as I have said, I don't think there will be much danger of their catching it. If you want any assistance, don't be afraid to send for me; I'll come and sit with her, and bathe her poor head this afternoon, while you attend to the little ones. What a nice nap she is getting!"

"I'm sure I'm very much obliged to you," said Mrs. Willis, with tears in her eyes; "and I'm very sorry I ever said anything rude to you. My children were in the wrong for touching your flowers, and I'm sorry for it; they are unruly little creatures; but I'll try to turn over a new leaf with 'em."

"There, now the kitchen is a bit tidy," said Mrs. Symonds; "a good washing would make it clean and sweet; but perhaps you'll be able to give it that by-and-by. Now I suppose you'll go and clear up the front room before the children come in. So I'll go in home, and begin to get dinner forward. If you want me, knock at the wall; I shall hear you. How much fresher your house smells for having the pure air in! Don't you feel better for it?"

"Well, I feels clearer somehow," said Mrs. Willis, as she wished her kind neighbor good morning.

When Mr. Willis came home from his work, he was agreeably surprised to find the house in beautiful order, the children clean, and little Mary going on as well as even the doctor could desire; for you must know that the doctor had called that afternoon, and said he was glad to see that Mrs. Willis was acting so wisely with regard to her child. Mr. Willis, who really carried an affectionate heart under his rough fustian jacket, stayed at home that evening, and tended Mary, or kept the little ones quiet down-stairs; but first of all, he went out into the wash-house, and thoroughly cleansed himself; for, as he said with a smile, "If he didn't make himself very clean, he should soil something, as everything and everybody were in such trim, and so clean!" There was a heap of rubbish out in Mrs. Willis's back yard. This Mrs. Symonds found out, and she would not rest until the dustman had been to fetch it away. Those heaps of rubbish around houses were so unhealthy, she said.

When Mary got well, Mrs. Willis did not allow things to go back into their former sad state; she continued to keep the children and the home clean; she was careful to have airy bed-rooms and wholesome food, and consequently her children soon became as healthy and robust as Mrs. Symonds's.

Mr. Willis found so much pleasure at home after these reforms had been wrought, that he stayed at home, and took pride in his family, and in his bit of garden, which soon displayed as fine a lot of flowers as that of his next-door neighbor, Mr. Symonds, with whom he was on most friendly terms.

"Well," said Mr. Willis to his wife one evening, as they sat together in their little parlor, "I'm sure we have cause to be thankful for the fever, that seemed such a calamity when it came upon us."

"Yes, John," Mrs. Willis replied, "but only because of the lessons it brought us. It has taught us to avoid fevers and every other disease that is brought about by dirt and bad management. We shall have cause to be glad to the end of our days for what came of little Mary's illness."

Kind Mrs. Symonds felt quite rewarded for all she had done for Mrs. Willis, by seeing such a pleasant change in her next-door neighbor's home.—*Sanitary Tract.*

Shoes in Japan.—A very noticeable feature of the Japanese *habit* is the curious sandals so universally worn by them. Most of them are made of wood, and have a separate compartment for the great toe. The Japanese are very cleanly concerning everything in and about their houses, and before entering any house—even a shop—they slip off their sandals, so as not to soil the floor in any way; passing down the streets one will see long rows of them at the doors, old and new, large and small. Straw slippers are also worn, and a traveler setting out on a journey will strap a supply of them on his back, that he may have a new pair as often as the old ones become worn. They cost but a cent and a half a pair. They are loosely fitting, and leave the foot free, so that deformities of the foot are rarely seen in Japan.

POPULAR SCIENCE.

—A dress made of variegated strands of spun glass has been woven in San Francisco.

—A spider recently spun a suspension bridge of a single thread across the Housatonic River, one end of which was attached to a tree and the other to some object on the other side, a distance of nearly 400 feet.

—The level of nearly all the lakes in the far West has been rising for several years past. Salt Lake has risen twelve feet in twenty-five years, and Winnemucca Lake twenty-two feet in four years.

—Prof. Metschnilcoff has discovered a means of cultivating a peculiar, very minute fungus, the spores of which are very destructive to insects. He proposes to use the poison for destroying the Colorado Beetle Phylloxera, etc.

The Cochineal Insect.—According to a writer in the *Scientific American*, the young of the cochineal insect are born alive, not being hatched from eggs as are most insects. In a cochineal community there is but one male to one hundred thousand females. Here is an illustration for the disciples of Brigham Young.

Expedition to the Red Sea.—According to a late scientific journal, "the Abbe Moigno proposes to fit out an expedition to search in the Red Sea for the remains of the Egyptian army buried long ago in their pursuit of the fleeing Israelites. He thinks that the chariots and other remains will be found to be well preserved in the sands at the bottom of the sea."

A Curious River.—In South Africa a curious phenomenon is observed in a river, the Zooga, which flows at one time to the east and at another to the west. This explanation is given by an eminent traveler and explorer: "When the shallow Lake Ngama is filled up by the streams into it from the west, its waters pass through the Zooga to the salt lakes on the east; but when these streams do not pour in such an amount of water, the level of the lake becomes very low, and the Zooga, often largely increased in volume from the overflowing salt lakes, sends its water into Lake Ngama."

A Wonderful Discovery.—"A doctor, H. E. Licks, of Old South Bethlehem, after three years' labor, claims that he has perfected an instrument by which forms and colors can be sent by wire the same as words are sent. He calls the instrument a diaphote. The word diaphote, from the Greeek, *dia* signifying through, and *photos* signifying light, has been selected as its name, implying that the light travels through or along a wire."

Do Fish Sleep?—The question was asked me lately whether fish sleep, and I confess that I was unable to answer positively. I cannot find any naturalist of authority who decides the point. I never was certain about it myself. I made inquisition at the Brighton Aquarium without satisfactory result; and the more I look into and inquire as to the matter, the more uncertain and contradictory the facts become. Many fish seem to bask, as it were, and look just as if they were asleep. Take a basking pike, for example. He lies in the water motionless and apparently senseless; but you try to put anything near him within range of his vision, and see how he imperceptibly, and with little apparent motion, fades out of view. He is no more asleep than you are. Lazy if you like—perhaps with his larder well filled—but I do n't think he sleeps. Sleep seems to me to be very much connected with light. When most animals want to sleep, they shut their eyes to exclude light. There are few fish which can shut their eyes. Dog fish can and do, and they really seem to sleep. There are other fish which rest a good deal in the dark; and then, again, there are many, as trout, which feed voraciously in the dark. Mackerel, now, are never still, but day and night they are on the move. Herrings do n't move about much in the dark, but if there is a corner where a ray of light gets in, they will crowd up to that corner, and keep their tails just moving to and fro. Some fish, as carp and other species of that tribe, seem to hybernate, and become perfectly torpid and insensible in frosty weather. What is the connection between this state and sleep? I wish some much more scientific authority than myself would take this question up and thoroughly explore it.—*London Field.*

GOOD HEALTH.

BATTLE CREEK, MICH., MAY, 1880.

J. H. KELLOGG, M. D., EDITOR. TERMS, $1.00 A YEAR.

PLANETARY PESTILENCE.

According to the last report of the Register-General of England, the death-rate of that country has decreased during the last nine years, the death-rate now being only 21.6 per thousand as compared with 22.3 per thousand previously. It is to be hoped that the perihelion pestilence fanatics will not be so misanthropic as to feel sad at this result, notwithstanding that it clearly contradicts the truth of their theory, since if the predictions of the lugubrious Dr. Knapp were to prove true there should have been, at least during the last two or three years, a steady increase in mortality not only in that country but in all parts of the globe. When the plague broke out at Astrachan, the sensationalists had some seeming ground for claiming that the prediction was about to be fulfilled; but since the plague as well as the yellow-fever has been checked by the application of efficient sanitary measures, even this seeming evidence is swept away. The seasons, instead of being extreme in an unprecedented degree, have been the reverse. Last summer was moderately cool in all parts of the country, and the winter recently passed has been remarkably mild everywhere in the United States, although slightly cooler than usual in England. It remains to be seen whether the coming summer will fulfill the predictions of the astrologers or whether it will be very like other summers which have preceded it. The yellow-fever pestilence, which was by this system of etiology referred to the malign influence of Jupiter and Saturn, worshiped as gods by the ancient heathen, has been proven to be connected with filth and unsanitary conditions with sufficient certainty to induce the city of Memphis, and other Southern cities, to clean up their unwholesome premises and clear out the abominable nuisances for which some of them have been really famous; and it remains to be seen whether these improvements will have any real effect to prevent an outbreak of the disease this season, or to mitigate its severity. If the disease originates in some pernicious influence of the planets which are now approaching their terrible (?) perihelion, yellow-fever ought to have been worse last year than the year before, and should be still more deadly in its ravages this year than last. Instead of this, the epidemic was insignificant last year compared with the previous year's experience, and there is good reason to hope that this year it may be still more limited in its extent, if it is not altogether prevented.

ANIMAL MAGNETISM.

This subject has at different times in the last century excited no little interest, and is still of interest to many. Not only does it engage the attention of those who have faith in animal magnetism so-called as a curative agent, but to those who regard it as a scientific humbug it is equally interesting as an example of one of the most gigantic frauds of the age. The doctrine of an occult force by which one person may operate upon another, or by which one mind may affect another otherwise than through the medium of the senses, seems to have originated in Paris in the latter part of the last century with a pretender whose claims were investigated by a committee appointed for the purpose by the French Academy. Benjamin Franklin, who then resided in Paris, was a member of the committee. After a careful and thorough examination of the claims of the pretender, they were pronounced to be utterly unfounded, it being

decided that the phenomena apparently due to the operation of some unseen force, were wholly attributable to the imagination of the subjects rather than to magnetic or any other form of force communicated by the operator.

We firmly believe that this simple explanation was the correct one then and is correct still. We have never yet seen nor heard of any phenomena of the sort in question which were not fairly attributable either to the imagination or to some tangible cause which could be easily pointed out. A few years ago, while studying the medical uses of electricity with one of the most eminent physicians of New York City, who was at that time in charge of the department of nervous diseases at the great Demilt Dispensatory of that city, we had abundant opportunity of testing the matter, and were fully satisfied with the results.

The physician referred to was at that time engaged in a series of experiments in what he termed mental therapeutics. Under the guise of animal magnetism he was experimenting upon the imagination of the patients who came under his care. Not a particle of medicine was used, nor any other remedial agent. The patient was simply made to believe that he was being treated by means of a powerful magnetic current; yet, as the Doctor frequently remarked, *the results were as good as under any method of treatment he had ever employed.* The same method was not adopted in all cases, but was varied according to individual peculiarities, the same general principles being followed, however, throughout the course of experiments. In some instances the patient was allowed to think that the magnetic virtue had been imparted to a certain very bad tasting but inert liquid, of which he was, with much solemnity, directed to take exactly one drop once in twenty-four hours, just as the clock was striking twelve, and on no account to take a larger quantity, or to take it at any other time, as the consequences might be something terrible. The effect of infinitesimal doses was under these circumstances decided enough to gratify the most enthusiastic advocate of high potencies. A solution of nothing, in reality, but a bad taste, potentized by the imagination of the patient, wrought wonders of which the most successful "magnetic healer" would be proud to boast. Yet there was no chance for the operation of any other force than the minds of the patients themselves. To the influence of the mind upon the body must be attributed all the so-called magnetic cures.

(*To be Continued.*)

TOO MUCH FAITH IN DRUGS.

A CAUSE of disease which in our humble opinion is really more serious than the dreaded yellow-fever or small-pox contagion, is the popular belief in the potency of drugs to cure disease.

A physician of high standing remarked to us some time ago that he considered one of the greatest evils of the times to be the implicit confidence placed by the people in drug medicines. This confidence often amounts almost to superstition. The idea that it is possible to wantonly violate the laws of health and then antidote the effects of transgression by swallowing a few drops of some nauseous compound, is a relic of barbarism, and is as much behind the most advanced thought of the age as would be the ancient notion of the structure of the heavens compared with the modern science of astronomy. This faith in drugs and doses is bound to waver more and more as the human mind progresses, until it is displaced by a faith in Nature, the real and only curative power. Drugs cure diseases only in rare instances, as when antidotal effects are required. When a sick person gets well, it is in consequence of the efforts of Nature, often independent of, and sometimes in spite of, the medication and other means employed. On this point Dr. Sam. Fenwick, of England, remarks in the *London Lancet* that "Many a much-prized remedy even now is as powerless over the progress of disease as was the sympathetic powder in the healing of wounds."

The following remarks by Dr. Wm. Sharp, F. R. S., of England, which we quote from the *London Lancet*, are still more explicit on this point:—

"Drugs are a cause of disease. It will startle many medical minds to hear medicines spoken of as a cause of disease; so little are

they accustomed to observe the consequences of their modes of practice. If these medical men would watch the effects of the doses they are in the habit of giving, they would learn that many of their patients were no longer suffering from the ailment, often a slight one, for which they first sought medical advice, but from more serious diseases, the effects of the treatment to which they have been subjected. Two hundred years ago, Sydenham lamented how often, in his time, sick people died, 'not of the disease, but of the doctor;' and it is so true still that it amazes as well as distresses those whose eyes are open to see it.

"The only effectual remedy for this persistent evil is to learn what drugs *can* do, by taking them ourselves while we are in health. To be ourselves convinced that the medicines we give our patients are able to make them worse will be no small benefit to them; and when we know in what way the drugs have made us ill, if only ordinarily attentive to our duties, we shall recognize similar mischievous effects produced by them on the sick. Such recognition will make us more cautious and unwilling to give them again in the same manner. A man who has himself suffered, will, commonly, have more sympathy for the sufferings of others."

BLINDNESS AND NERVOUS DISEASE FROM TOBACCO-USING.

Dr. L. G. Alexander, of Kentucky, in *Phil. M. S. Reporter*, gives an account of four cases of amaurosis from the use of tobacco. He says, "It was not until I got my fifth case that I fully realized the cause of the trouble, and was able to diagnose correctly why it existed, and the best means of treatment. I now quite often recognize cases of the kind in their incipiency, and by the experience gained can easily relieve them—more properly by removing the cause—with very little medicine; the *vis medicatrix naturæ* is sufficient to the end. The use of tobacco is so general that its bad effects can hardly be estimated; so much has been written, pro and con, that to discuss the subject is superfluous. The rapid increase of nervous people, nerve pain, neuralgia, and obscure nervous disease, is seen in practice every day by the physician, and is so frequent as to attract the attention of the laity; and it is my belief that the common use of tobacco, as well as alcohol and opium, is the most prominent cause of so many nervous troubles. From observation, I have found that the children of parents addicted to the use of tobacco are more likely to have nervous diseases than others born of parents who do not use it; and if both parents use it, we are almost certain to find the offspring of a nervous temperament, and especially liable to a nerve derangement. It is from this class that the drunkards are mostly recruited, growing up with a weak nerve development. Any physical or mental exertion brings on the disease now so common, neurasthenia."

A LESSON FROM LIFE INSURANCE COMPANIES.

We have never been favorably disposed toward life insurance companies for several reasons which we need not mention, but are coming to think that we have hardly regarded them with as much favor as they deserve. There is no doubt that these organizations are becoming a powerful means of educating the people in regard to sanitary matters. Their business sagacity leads them to see that sanitary reform will be directly beneficial to them from a pecuniary point of view, and this leads them to encourage sanitary improvements of all sorts. Many life insurance companies publish popular sanitary literature for circulation among their patrons; and in various other ways they endeavor to improve the health and increase the longevity of those in whom they are particularly interested. A very suggestive fact in connection with the life insurance business is that in certain cities where sanitary conditions are known to be bad and the death-rate high, the business is not pushed to any great extent, it not being considered desirable to obtain patrons where the danger to life and health is so great. Certain other cities are avoided altogether as involving too great a risk to make the business profitable. It occurs to us that if the probability of death in these cities is so great that life insurance companies are unwilling

to assume the risk of pecuniary loss which the death of the policy-holder would involve, those who take the risk of losing life itself by residence in them are certainly in the highest degree unwise. It would undoubtedly be a very great advantage to the cause of sanitary reform if our life insurance companies would give greater publicity to the results of their observations.

AN EXPERIMENT IN DIET.

ACCORDING to the Philadelphia *Press*, there exists in that city a charitable society, known as the Fifteenth Ward Society, for organized charity. This society furnishes to each adult dependent upon it for support, three pounds of flour, half a pound of cornmeal, half a pound of beans, a quarter of a pound each of oatmeal, rice, and sugar, and one ounce of tea, which is the supply of food for a week. As quite a number of the members of the society, including the president, Mrs. H. P. Baker, claimed that this amount of food was entirely inadequate to maintain the body in a healthy condition, Mrs. Baker and her daughter, at the suggestion of the latter, tried the experiment themselves of purchasing the above-named quantity of food at the store of the society and preparing it separately at each meal. The result is thus stated by Mrs. Baker: "At the end of the week we had material left, and during the week I never felt better in my life. Every day I was out visiting the sick, and certainly felt as strong as if I had partaken of our usual food." The bill of fare made up from the articles mentioned was entirely of a vegetable character, and with the exception of tea, would not be objected to by the most radical food reformer. The average amount of food provided each day by the list of articles named would be about eleven ounces, about ten ounces of which would be actual nourishment. Although this is not more than one-third of the amount usually stated by writers on dietetics as essential to the maintenance of life, the testimony of persons who have tried the experiment, together with such cases as that of Cornaro, who lived for more than forty years on twelve ounces of food per day, and of many others, shows that life and strength can be maintained on a much smaller amount. So far as the quality of the food is concerned, experiments which we ourselves have made, sometimes continuing over a period of several months, have shown most conclusively that it is entirely adequate to sustain life. If those who argue strongly for the use of a large proportion of animal food in human diet would but take the pains to test by actual experiments the theories which they oppose, it is entirely possible that in many instances the result would be such as to convince them of their error.

We firmly believe that there is no more nourishing and wholesome food than is furnished by grains and the leguminous seeds. We have made food of this sort a staple article of diet for many years, and have never suffered in consequence. Indeed, our health has steadily improved, notwithstanding we have been obliged by the pressure of many duties and rapidly growing responsibilities to transgress many of the other laws of health, often working far beyond reasonable limits. The best way to test the truth of all doctrines is by practical experiment.

SANITARY MISSIONARIES.

A FEATURE of the times which is very encouraging to hygienists and sanitary reformers is the great amount of attention which is being given to sanitary subjects, observable in the public press. Scarcely a newspaper can be picked up which does not contain something on the subject. The increased interest in sanitary matters is creating a great demand for popular literature of this character. In subjects pertaining to the limitation of prevailing diseases, epidemics, etc., this want is being very largely met by the publications of various State Boards of Health, which now exist in nearly every State in the Union. But in the direction of individual hygiene there is still a great deficiency. There is an urgent demand for sanitary missionaries in all parts of the country. We are glad to learn from correspondents that quite a number of our readers are becoming somewhat enthusiastic on the subject. It would be highly gratifying to all the friends of sanitary reform if a large number of young men and women who are fitting them-

selves for teaching and similar occupations might be induced to choose as their mission the field of sanitary reform, which certainly presents as great inducement for missionary labor as any other. We candidly believe the world would be better off if even a small fraction of the expense and effort which are annually devoted to foreign missions were turned in the direction of sanitary reform.

We do not know of any way in which so much practical good might be done by a person desirous of benefiting his fellow-men as might be accomplished by the sanitary colporteur who would go from house to house distributing sanitary literature and giving the people practical instruction respecting matters which exert the most direct and immediate influence upon human life and health.

MICHIGAN STATE BOARD OF HEALTH.

THE following is an abstract of the Report of the last meeting of the Board of Health of this State, furnished us by the Secretary, Dr. H. B. Baker:—

"The regular quarterly meeting of the State Board of Health was held in Lansing on April 13. The members present were Dr. H. O. Hitchcock of Kalamazoo, Leroy Parker of Flint, Rev. D. C. Jacokes of Pontiac, Dr. J. H. Kellogg of Battle Creek, and Dr. H. B. Baker, Secretary.

"The President, Dr. Kedzie, being absent, Dr. Hitchcock was chosen president *pro tem.*

"The Secretary presented a letter from Dr. Kedzie, stating that the severe illness of his son, Prof. W. K. Kedzie, would prevent him from attending the meeting. In this connection the Board adopted a resolution expressing sincere sympathy for Dr. Kedzie and family.

"The Secretary presented some documents issued by the local board of health of Tecumseh, as illustrative of what a live, energetic board of health might accomplish.

"Mention was also made of the health officers and authorities of Lansing, who have done good sanitary work, and succeeded in establishing a system for the collection and registration of vital statistics which requires burial permits, Lansing being the first city in the State to take this commendable step. Muskegon, under the lead of Mayor Holt, was also mentioned for active efforts for the prevention of disease.

"A communication from C. H. Voute of East Saginaw stated that he desired to form a circuit of towns and cities in this State, for using the odorless excavating apparatus for the removal of contents of privy vaults. A resolution was adopted recommending local boards of health to secure the cleaning of vaults by means of such apparatus, wherever the dry-earth system is not in use.

"The present editions of the documents on the Restriction and Prevention of Scarlet Fever, and on the Restriction and Prevention of Diphtheria, being practically exhausted, it was decided to have them revised, published in the next Annual Report, electrotyped, and a large edition of each document printed. As it is to be electrotyped, local boards of health may procure any number of either document at a slight cost.

DIPHTHERIA.

"The Secretary stated that, inasmuch as diphtheria has been so prevalent in this State, it has been suggested by an officer of the National Board of Health that this was a favorable field for a systematic investigation of the causes of the disease, particularly as to what are its relations, if any, to filth. The subject was thoroughly discussed, at some length, and the great desirability of such an investigation was unanimously conceded, but the resources of the Board are entirely inadequate for such a house to house inspection as seems essential.

"The Secretary was directed to correspond with the National Board of Health and see what arrangements can be made for such an investigation.

SANITARY CONVENTIONS.

"The Secretary was authorized to begin printing the Proceedings of the recent Sanitary Conventions at Detroit and Grand Rapids as soon as practicable. The Report of the Board for 1879 is now in press, and will shortly be issued.

"Dr. Kellogg, as committee on the disposal of decomposing organic matter, presented a paper on

DECAYING WOOD A CAUSE OF DISEASE.

He related experiments by Prof. Wm. H. Brewer, confirmed by himself, showing that when green wood is allowed to stand for some time in water the solution decomposes, and gives off very offensive odors. Even when the water is renewed again and again, similar results ensue. The paper was prepared with especial reference to the practice of putting sawdust in streams and ponds, and it tended to confirm the belief that the practice is frequently productive of malarial and diarrheal diseases.

SANITARY SURVEY.

"Dr. Jacokes, chairman of the committee on such survey, made a statement relative to the desirability of having a sanitary survey of the State, and as to its probable extent and cost.

SANITARY SCIENCE EXAMINATIONS.

"July 14, the day after the next meeting of the Board, it will, if candidates apply, examine them in sanitary science, giving a certificate of merit to those who pass a satisfactory examination. An outline of the plan of these examinations will appear in the forthcoming Report for 1879."

ABUSE OF THE FEET.

WHILE we have not space here to elucidate fully the subject of the hygiene of the feet, we cannot forbear calling attention to the very common evil practices which relate to them. Nothing could be more absurd than the modern mode of dressing the feet. If some of the shoes and boots which we have seen worn, and which seemed to be highly prized by the wearers as being in the height of fashion, had been constructed by the Inquisition, and the same individuals had been compelled to wear them in punishment for some real or alleged crime, they would have been regarded as diabolical instruments of torture; and so they are. Who has not seen a young miss mincing along in a wholly unnatural way, vainly striving to seem not to limp in the sinful attempt to compel her feet to be reconciled to the scanty capacity of a pair of shoes two sizes too small for her. Within a short period, Fashion has let go her iron grasp upon the young men; but she still holds as firm a grip as ever upon the tender feet of misses and maidens as well as their elder sisters and mothers, and compels them to place upon their feet pretenses of coverings which cannot but produce discomfort and disease. The narrow soles, and high, narrow heels set forward near the middle of the foot, are qualities most worthy of being heartily despised; and the man or woman who invented the foot-covering possessing these properties so finely adapted to torture the feminine foot, is responsible for an amount of discomfort and misery, individual and domestic unhappiness, and possibly of actual vice, which certainly entitles him to the dishonor of being heartily despised and abundantly reproached by the whole human kind, or at least the tortured part of it.

A year or two ago we thought Fashion had concluded to be sensible at last, at least in the matter of foot-coverings, but alas for our hopes! Another turn of the wheel and she comes up as fickle and untrue to the requirements of Nature as ever, and demands that woman shall wear French heels or be ostracized from the society of the *elite*, which to the majority of fashionable women would be a fate as bad or worse than death. We declare without mental reservation and without the slightest remorse of conscience, as a professional man and as a professed champion of truth, that a French slipper or shoe, as made at present (in the year 1880), is as unfit for a human foot as a horseshoe. Far more sensible would it be to return to the ancient custom and wear the rude, homely sandals which graced the feet of the maidens of ancient Egypt and the Orient.

But let us look a moment at the real evils of these fashionable coverings for the feet, at least for ladies' feet. The custom of wearing tight shoes with narrow soles and high, narrow heels begins in early maidenhood, if not in childhood or infancy,—and sometimes the absurd fashion even seizes upon the child as soon as she leaves the cradle, for the precocious little one is so smart she must be a lady at once, and so must do as ladies do. At this period the bones are so soft and flexible, the ligaments so yielding, that they are easily forced into almost any mold, and the process

of deforming them begins. The small boot or gaiter worn,—and it is always as small as can possibly be pressed upon the foot with the thinnest possible stocking,—allows no room for development of the organ, and the improper shape produces deformity and distortion. The fashionable American girl does in a somewhat more limited degree exactly what is done for the Chinese maiden by a process of bandaging, of which we have already given our readers a description. The narrow soles and small toes cramp the foot and prevent it from supporting the weight of the body upon its whole under surface as designed by nature. The high heel throws the weight forward upon the toes, which still further embarrasses them in their cramped condition, and greatly increases the injury arising from narrow toes and soles. We have often witnessed some of these unfortunate young women tiptoeing along the streets, evidently conscious of appearing awkward and uncouth, and vainly endeavoring to conceal their crippling gait. The farther toward the toes the heel is set, the worse this difficulty becomes. In some of the latest foreign styles the wearer is barely able to touch her toe to the ground, except at the risk of tipping over forward, and when walking appears like a person stumping along on stilts. We heartily believe in laws against stealing, defrauding, taking life, disturbing the peace, even for the prohibition of the sale of liquor, and we can conceive of no reason why a shoemaker who deliberately goes to work and manufactures an instrument of torture which he perfectly well knows must spoil the happiness, ruin the temper, and make cripples of half the women of Christendom, we say we can conceive of no reason why such a malefactor, such an enemy to the general comfort of the public, and such a diabolical tormentor of the fair sex, should not be placed under the ban of the law and visited with punishment commensurate to his crimes as well as other offenders.

But perhaps we are beginning at the wrong end. It cannot be denied that ladies can obtain if they wish loosely fitting shoes, with broad soles, wide toes, and low and wide heels, and made of leather sufficiently thick to afford at least as much protection as a good quality of brown paper from the dampness and chilliness of the moist walks which must be encountered during the greater part of the year out of doors. If ladies will do their duty by themselves and their daughters, the evil may be speedily corrected; for French heels will not be made only so long as there is a demand for them. We are not sure, after all, but they owe their existence far more to female vanity than to any malignant designs on the part of the shoemakers. It was only the other day that we learned the reason why they are so much sought after, as we had been so stupid as never to have guessed. We betrayed our ignorance to a clerk in a large shoe store, and were politely informed that the French heel was the finest thing in the world to make a lady's foot look small. That gave us the clue at once. There is a decree or a tradition or a vestige of ancient mythology, or something of the sort, which declares that no lady's foot shall exceed certain prescribed limits of length and breadth, but particularly of length. The decree says, to each woman's foot, "Thus far shalt thou grow and no farther;" and if it happens to grow farther in spite of the decree, then it must be squeezed back into the prescribed limits, or possibly, if this cannot be accomplished, the redundant part may be amputated.

Cases have actually occurred in which ladies have had one or more toes cut off to enable them to wear a smaller shoe than would otherwise be possible for them. The French heel seems to be a sort of compromise between this awful squeezing and lopping off. It hides the deformity of a decently formed and proper-sized foot, and makes it appear to be Liliputian when it is not! What a grand thing it would be if womankind could be convinced that she has just as good a right to a broad understanding as the other half of humanity; that it is just as foolish and silly and useless and wicked to squeeze and distort her foot, as to treat her head in the same way, like a Faquir or a Carribee Indian! And what about the moral aspect of the question? Is it not just a little—if not a good deal—immoral, or at least untruthful, to attempt to pass off a big, clumsy foot for a *petit* one? to attempt to make a foot of

which one is really ashamed seem to be as desirable as that of a neighbor which is really naturally smaller and illy developed? Fie on such subterfuges!

We do not claim to be better than our sisters; but surely there is a higher and better plane. There is a broader and grander platform on which to stand; but narrow-soled (souled) people can never plant their feet squarely on it. Woman is crying for more room in the world of thought, the world of invention, the world of mechanics, the world of trade, the world of commerce, and even the unenviable world of politics. Some of the sex are complaining bitterly that there is not more room made for them. We would mildly suggest at the risk of being called a cynic, that here is a splendid chance for woman to show her own magnanimity by giving to herself more room, more lung-room, more heart-room, more waist-room, and more foot-room. Let her throw away her narrow soles, and, our word for it, a large share of the much-talked-about narrowness of the sex will go with them. She will acquire a broader understanding, in a double sense, if she will but emancipate herself from the cruel tyrant that tortures and trammels her. Does she desire suffrage? Let her but determine that her present suffer-age shall terminate, and she will so soon become in all respects the peer of man that every privilege required to make her appear what she then will be, really his equal, will be freely granted.

Tea and Temper.—A friend sends us a clipping from the San Francisco *Chronicle* which is an extract from a lecture by Prof. Williams delivered at Sheffield, Eng. The Professor says, "The domestic, quiet life and habits of the Chinese owe much of their strength to the constant use of this beverage [tea]." This assertion the gentleman makes the basis of an argument in favor of the general use of tea; but who ever heard before, that the Chinese were particularly noted for placable, quiet tempers and domestic habits? About the first Chinaman we ever saw threw his flat-iron through a window, breaking two sashes of glass, because some little boys in the street were gazing in astonishment to see him sprinkle clothes with his mouth. The testimony of the eminent Dr. Bock, of Leipsic, is that "The *snappish, petulant humor* of the Chinese can certainly be ascribed to their immoderate fondness for tea."

Not long ago a lady patient said to us while undergoing examination, "Now, Doctor, do tell me what makes me so cross! I did not use to be irritable; but for two or three years I have been getting so cross and disagreeable that I do not see how my friends can endure me. I scold and fret without any cause whatever, and get out of patience at every little thing. Do tell me what is the matter." Having learned that the lady was in the habit of using strong tea, we attributed the irritability to that cause. She gave up the use of tea in a short time, and soon recovered her former equanimity of temper.

Vaccination.—There has recently been a very great agitation of this subject in England, which has probably grown out of the efforts of the Anti-Vaccination Society of England. According to the report of a prominent newspaper correspondent, a large number of the most eminent English physicians have declared themselves in decided opposition to vaccination. Arguments are presented on both sides which are well worthy of consideration. We give in this number an article by Mr. W. Gibson Ward, one of the most active opponents of vaccination in England. Mr. Ward is evidently very much in earnest in his protest against the practice. We feel certain, however, that his representation of the slavish relation of the English people to the medical profession will not apply to this country, or at most in very slight degree. Mr. Ward has ably presented the anti-vaccination side of the question. We are ready to publish arguments on the other side.

—Dr. J. R. Black, an eminent Ohio physician, in an able paper read before the American Medical Association at its annual meeting in 1878, remarked that "It is nearly always the old, ripe, and conservative physician who becomes an enthusiast in hygiene; seldom if ever the young and well-trained collegiate."

QUESTION ✦ DEPARTMENT.

In this Department will be considered all questions of General Interest pertaining to the subject of Hygiene.

Is Galvanized Iron Dangerous?—The foregoing question is very frequently asked us. The question relates, of course, to the use of galvanized iron in connection with drinking-water or the preparation of food. While we can point to no cases in which immediately injurious effects have followed the use of galvanized iron vessels or pipes in the manner indicated, there is good ground for believing that water may be contaminated by galvanized iron to an extent that will render it seriously harmful to the system. Galvanized iron is made by dipping iron, while hot, into melted zinc. The zinc covers the outside only. It has been shown that zinc is a poisonous metal, though less so than lead, and less dangerous because less soluble. It is evident that galvanized iron, from a hygienic standpoint, is essentially the same as zinc. Indeed, the well-known fact that alloys of the various metals are much more readily decomposed or affected by chemical agents than the pure metals, gives ground for the supposition that galvanized iron may be less safe as a means of conveying or containing water or food than pure zinc. Tin and glass are far superior to all other materials for the purpose named. It should be mentioned in this connection that tin, zinc, and galvanized iron vessels are often soldered on the inside, when the solder becomes a source of danger on account of the lead which it contains.

Wooden pipes well water-seasoned and protected by asphaltum upon the outside make excellent water-pipes for cities.

Brick or Frame Houses.—A correspondent wishes to know which is the most conducive to health, a brick or a frame house. The healthfulness of a house depends less upon the material of which the house is made than upon the manner of its construction. A brick house made with solid walls will be very unhealthful on account of dampness. If made with double walls with an air-chamber between, this objection disappears.

Superstition in Regard to Sleeping.—A correspondent wishes to know whether "in sleeping it is best to lie with the head to the north." The notion is held by some that it is very important to lie during sleep with the head to the north, so that the body may be in direct line with the magnetic currents which are supposed to be constantly passing between the magnetic poles of the earth. Some persons have believed this idea so thoroughly that they have had their bedposts supported on glass, hoping by insulating themselves to come more perfectly under the influence of the earth's magnetic forces. Unfortunately for this theory, experiments have shown that the human body is not affected by magnetism, even when the most powerful magnets are employed. There is no ground for the theory whatever. It makes not the slightest difference whether the head is toward the north, the south, or any other particular direction during sleep or at any other time, provided it is kept a little higher than the other extremity of the body, so as to favor the proper distribution of the blood.

Hot Applications to the Head.—A correspondent wishes to know "whether there is danger of softening the brain by applying hot wet cloths to the head to relieve pain." We have never known such a result to follow the use of fomentations to the head, and see no reason why any injury of the sort should be produced. It is important, however, to use fomentations to the head with caution, since by their prolonged use it is possible to occasion serious congestion of the brain, though not softening. What is usually understood as softening of the brain is nothing more than congestion.

Chronic Sore Throat.—A subscriber inquires what is the best treatment for chronic sore throat. We know of no specific treatment. No remedy will cure all cases. One of the best remedies for the most common form of the disease is the inhalation of hot vapor from a steam inhaler.

LITERARY NOTICES.

MUSCLE-BEATING; OR, ACTIVE AND PASSIVE HOME GYMNASTICS, FOR HEALTHY AND UNHEALTHY PEOPLE. C. Klemm. New York: M. L. Holbrook & Co.

The above is the title of a little pamphlet by the manager of the Gymnastic Institution at Riga. It contains the following, among interesting chapters: Historical Review — Value of Muscle-Beating as an Indoor Gymnastic — Directions for the Special Use of Muscle-Beating—The Muscle-Beater —Cold Hands and Feet—Morbid Concentrations— Excessive Fatness—Muscular Debility—The Weakness of Advanced Years and Infirmities of Old Age —Lameness and Stiff Articulations—Morbid Mental Excitements—Sleeplessness—Incipient Diseases of the Spinal Cord—Paralysis—Rheumatism — Cold — Loss of Hair—Muscular Curvature of the Spine— Muscle-Beating as a Means of Sustaining the Health.

We are glad that Dr. Holbrook has brought out an American edition of this little work. The ideas it contains are important, and will undoubtedly be made of practical utility.

SANITARY MATTERS AT LARGE AND ELSEWHERE. By Mrs. L. C. P. Lewiston, Me.

This is a rather racy pamphlet on sanitary matters, written by a lady who is evidently very much in earnest and very enthusiastic in her work. It contains several interesting articles, but the one that seems to us the most valuable is an article advocating the establishment in cities of sanitary intelligence registers. The lady's idea is that a sanitary register should be kept in every city, in which may be found a correct record of the sanitary condition and history of each building in the city, and to which a person wishing to purchase or rent a building might resort for information concerning its healthfulness. This plan strikes us as one that would be of immense value to tenants and purchasers and a powerful means of securing proper attention to sanitary matters on the part of householders. Mrs. L. C. P. is endeavoring, in a manner wholly her own, to excite an interest in sanitary matters, especially in her own State and city, a laudable and philanthropic enterprise in which we hope that she may meet with success.

BREAD AND BREAD-MAKING. HOME LESSONS AND SEASONABLE SUGGESTIONS. Vegetarian Society: 56 Peter St., Manchester, England.

These two little tracts of four pages each are, like all other publications of this Society, well calculated to present the merits of a vegetarian diet in such a manner as to be appreciated by the common people. The first mentioned is made up of two extracts, one from the *Christian World*, the other from the *Pall Mall Gazette*, which are *apropos* of the subject. The second tract mentioned, of which we have received a proof-sheet, kindly sent us by Mr. R. Bailey Walker, Secretary of the Society, is intended to show that good, nutritious, and palatable vegetable food may be furnished at a smaller expense than flesh diet. An instance is cited in which the Society entertained 700 persons at a banquet, each of whom received an abundance of wholesome and palatable food at an average expense of less than three and one-half cents. Another instance is given in which 120 persons fared sumptuously at a vegetarian dinner at an average cost of three cents. It strikes us that this little tract might be circulated to great advantage in Ireland at the present time, where the scarcity of food is so great as to bring many to the verge of starvation. That these statements are true, there is no reason whatever to doubt. Indeed, we might offer our own experience as confirmatory evidence, having at one time, while engaged in severe mental labor, subsisted for several months upon a vegetarian diet, the average cost of which for the whole time was exactly six cents a day. All who have ever given the matter of dietetics much thought, at least from an economical standpoint, will be ready to grant that the useless and often injurious luxuries of diet cost far more than the really nutritious and essential articles of food. The Vegetarian Society is doing an excellent work in calling public attention to this fact.

THE SANITARIAN. New York: A. N. Bell, M. D.

No journal in this country can compare with the *Sanitarian* as an exponent of the most advanced views in all departments of sanitary science. While not specially designed for the common people, being sometimes too technical to be of the fullest interest to non-professional readers, it always contains enough that can be comprehended by any one to be of value to lay members as well as professional men, and is to the latter class almost indispensable. The editor stands in the front rank of eminent American sanitarians, and has done much by his own personal efforts in behalf of true principles of sanitation. We have been more than pleased with the unflinching manner in which he has exposed the culpable neglect of officials in the Southern cities which have suffered so terribly in consequence of gross neglect of sanitary precautions. The truth ought to be known; and men who have the courage to tell the truth and the whole truth, ought to be sustained.

OUR HOMES. By Henry Hartshorne, M. D. Philadelphia: Presley Blakiston.

This is the ninth of the series of American Health Primers, edited by W. W. Keen, M. D. Like others of the series, this little monograph is filled with valuable hints which every person would do well to read. The question, "How shall we have Healthy Homes?" is answered in a very concise manner in different chapters relating to the Situation, Construction, Light, Warming, Ventilation, Water-Supply, Drainage, and Disinfection of houses, with other subjects of equally vital importance to every householder. The author mentions that "the chief evils to be guarded against are the deterioration of the atmosphere and of drinking-water, under the influence of decaying matter."

UNION HANDBILLS.—This is the title of a series of temperance leaflets, published by the Woman's National Christian Temperance Union. Numbers 10, 11, and 12, which we have just received, are devoted to beer. They are well written and exceedingly well calculated to expose the evils and dangers of beer-drinking, a work which is of very great importance on account of the idea that, although strong alcoholic liquors are injurious, such beverages as beer, cider, mild wines, etc., are entirely harmless.

The Temperance Union are publishing temperance lesson sheets for Sunday-schools, which are furnished at fifty cents a hundred by Miss Julia Coleman, 28 Eighth St., Brooklyn, N. Y.

Publishers' Page.

☞ Owing to her absence in California, Mrs. White's article arrived too late for this number. It will appear next month as usual.

☞ The work is progressing rapidly on the HOME HAND-BOOK OF DOMESTIC HYGIENE AND RATIONAL MEDICINE, and it is hoped to have the book ready for sale in a few weeks. It is to be printed on fine paper, royal octavo size, and will make a volume of over one thousand pages.

☞ A few live, energetic agents who have had sufficient experience to enable them to manage a large territory are wanted to engage in introducing the HOME HAND-BOOK OF HYGIENE AND MEDICINE. Men of experience will be given good terms, and cannot fail to do well.

☞ The Sanitarium has just made an important addition to its already very complete list of remedial appliances, in the shape of a "pneumatic apparatus" manufactured for them by Messrs. Reynders & Co., of New York City, after the model of Prof. Winterwitz, of Berlin, Prussia. It is one of the very few instruments of this kind in this country, and is one of the most efficient means of treatment for certain pulmonary diseases.

☞ Messrs. Segner and Condit, of Burlington, Iowa, are meeting with great success in the sale of PLAIN FACTS FOR OLD AND YOUNG. Over 12,000 copies of the book have been printed for them within the last five months, and they expect to sell enough to make up 20,000 this season. A young man who is now a student at Battle Creek College, in less than two weeks made money enough in canvassing for the work to pay his expenses two terms at College. Here is a good chance for lucrative business for active, experienced agents.

Odorless Excavating Apparatus.—We call special attention to the advertisement on the third page of cover, of the Ames' Eagle Odorless Excavating Apparatus. We are well acquainted with the President of the company, Dr. Ames, who is widely known as an able physician and an eminent sanitarian, and from personal acquaintance with the apparatus itself we can recommend it as being all it is claimed to be. If an apparatus of this sort could be in use in every city in the land, no doubt nine-tenths of the typhoid fever, dysentery, diphtheria, and kindred diseases would vanish. Any person who will put an apparatus in operation in this county will receive all the encouragement we can give or can secure for him.

A TEMPERANCE SONG BOOK.

THE friends of the Health and Temperance work will be pleased to learn that a collection of temperance hymns, songs, anthems, and music is being prepared expressly for the use of Health and Temperance clubs. Quite a collection of excellent pieces has been made already, several first-class composers having contributed liberally to the work, but there are still wanting a few sterling pieces on such subjects as true temperance, tea and coffee, tobacco, the teetotal pledge, etc. Good words that can be set to music are especially required. In order to interest our friends in this direction we have decided to offer a prize of $5 for the best words on any of the above subjects, and hereby do so with the stipulation that the words shall be sufficiently meritorious to be worthy of a place in the work referred to, the awarding of the prize to be left to the Executive Committee of the American H. & T. Association. This offer remains good for four weeks only.

We shall also be exceedingly glad to receive good selections of words or music.

J. H. KELLOGG, *Pres. Am. H. & T. Ass'n.*

Words of Encouragement.—We are glad to receive the many evidences of appreciation from the numerous friends of the journal in various parts of the country, sometimes even from foreign lands. A gentleman in Australia has long taken twenty copies of the journal for himself and his friends, and has recently ordered five copies added to his list. Through the efforts of Eld. J. N. Loughborough, the journal and the principles of hygienic reform which we advocate, are gaining a foothold in England.

We are glad to see that many of those who have been receiving the trial numbers of GOOD HEALTH are showing their interest in the journal and in hygienic reform by becoming regular subscribers. Many send along with their remittances encouraging words expressive of their appreciation. A Michigan lady writes:—

EDITOR GOOD HEALTH:

"Your journal of hygiene is a welcome visitor. Permit me to assure you of my appreciation of its valuable contents. I am much pleased to become acquainted with it, and heartily indorse the sentiment of the productions of some of your most able contributors, those more especially on temperance and the practical teachings of God's word applied to our daily walk in the Christian's path of duty. May we be doers and not hearers of the word only. We must be practical. And a person, man or woman, cannot be a thorough Christian, unless a temperance Christian. We should be temperate in all things."

☞ The cause of science has just lost an earnest and promising worker in the person of Prof. W. K. Kedzie, son of Prof. R. C. Kedzie, of the Michigan Agricultural College, and President of the State Board of Health of Michigan. The deceased was, at the time of his death, Professor of Chemistry in Oberlin College. He died at the residence of his father, at the Agricultural College near Lansing, April 14th.