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PATENT MEDICINES.*

BY REV. ROWLAND CONNOR, OF EAST SAGINAW.

THE nostrums or proprietary compounds generally known as patent medicines are peculiarly a modern fabrication. Forty years ago they were scarcely known at all in this country, although the European origin of some of them must be put farther back. Within the last twenty or thirty years, however, their manufacture has assumed immense proportions, and their trade is one of extraordinary activity. In 1874 Dr. R. W. Murphy estimated the money expended for patent medicines during the previous year at eighty million dollars in this country alone, ten million being spent in advertising them. These figures, of course, must be greatly increased for the present time (ten years later). A gentleman interested in the sale of a single patent medicine, informed me recently that the advertising bill of his house for the previous six months was $250,000. At one time the same firm kept an advertisement standing in every daily and weekly newspaper published in the United States; but the sale of their medicine has consequently been increased so enormously, that they do not now advertise so widely. One manufacturer alone pays the government $120,000 annually for stamps upon his packages. He sells, at retail prices, three million dollars's worth of his medicine annually, and upon this amount he admits a profit of $1,000,000. In one of our own daily papers I counted recently one hundred and sixteen advertisements, omitting "Wants" and professional cards. Of these, twenty-eight were advertisements of patent medicines, leaving only eighty-eight to all other kinds of business; in other words, one-fourth of the entire advertising patronage of the paper came from the owners of patent medicines. In another and larger newspaper, out of twenty-one columns of advertisements no less than nine and one-half columns were devoted exclusively to patent medicines. Moreover, wholesale houses have been recently established, which deal almost solely in this same line of goods. One house alone sells no less than fifteen hundred different kinds of favorite nostrums. And these few facts, taken from the trade in our own country, may be paralleled by similar facts from the same trade in England, Germany, France, and other European countries.

I do not need further to illustrate or attempt to confirm the statement that the patent medicine business is now of great moneyed importance. But of far more importance than the amount of money involved is the fact that it is a business which directly affects the physical welfare of human beings. All of these compounds, whatsoever their nature, are intended in some way to affect the growth of some of the tissues of the human body. Under whatever name they may be advertised—as lotions, or balms, or ointments for external application, or as pills, powders, syrups, tonics, and tinctures for internal use, they are intended to produce a very decided and very important effect upon our bodies. They are taken for the express purpose of altering that delicate machinery of nerves, muscles, and vessels, the harmonious adjustment of which alone constitutes healthy life. The millions of dollars expended in the purchase of patent medicines, represent millions of pounds or pints

* A paper read at a Sanitary Convention held at East Saginaw, Mich., under the auspices of the State Board of Health.

of solid or liquid matter taken into the system at the very moment when the most intricate, most delicate, and most precious machine of which we have any positive knowledge in the whole universe, is temporarily clogged, or otherwise disarranged or broken down; and the medicine is taken in order to effect repair. Reasoning from the simplest principles of business, therefore, the natural supposition would be that every man who values his body would proceed to the taking of any medicine only with grave caution; that he would open his mouth to no powder or potation except from some very decided personal knowledge of its nature and probable effects, or some equally decided confidence in the intelligence and integrity of the one who advised him to make a trial of its virtues. The extent to which patent medicines and their proprietors respond to these requirements, I will now proceed to illustrate.

In the first place, in purchasing and using a patent medicine, you nearly always take a leap into the dark; that is, you know absolutely nothing of the intelligence or integrity or responsibility of the manufacturer. You have, perhaps, the label on the package and the printed circular or the newspaper advertisement to guide you; and that, as a rule, is all you have. You select, we will suppose, Dr. Ox's cough medicine; but who is Dr. Ox? or of what is his medicine composed? Or you decide to make a trial of Mrs. Pinkham's remedy; but you know nothing of Mrs. Pinkham, of her education or character, or of the materials with which she fills her bottles. Or the baby is ailing, and you buy Mrs. Winslow's syrup; but whether Mrs. Winslow is nurse or doctor, whether she is married or single, whether "she" is male or female, you do not know. Or you turn to a Golden Medical Discovery, but who made the "discovery"? or why is it "golden"? or how do you know that there was any "discovery" connected with its origin?

Many patent medicines are advertised as "Chinese;" but what presumption can there be in favor of a remedy borrowed from a people who, whatever their skill in some things, are confessedly very far indeed behind all European nations in their knowledge of the healing art? Many others, again, are said to be of "Indian" origin; but where, except in penny-a-line novels, is there any evidence of the Indians' possessing any knowledge of medicine unknown to our own medical fraternity? Their "medicine-men" never got beyond howling and dancing and sucking and exorcising, and were arrant knaves withal. That the "noble red man" should be made to figure so frequently as the originator of a patent medicine, is a sad commentary on the superior intelligence of his white brother. The Indian is having a full revenge upon his conqueror. The remnants of the red race might dance with glee if they had sense enough to reflect upon the amount of suffering that their supposed remedies are inflicting upon the pale-faces.

Not a few patent medicines are asserted to be positively harmless because made only from roots and herbs; but from what roots or from what herbs? and why are they certainly innocuous because made only from roots and herbs? A certain elderly clergyman is said to have given the following advice to a young minister upon his ordination: "Remember, my dear brother, that you can never presume too much upon the ignorance of your congregation." Patent-medicine makers seem frequently to act upon a similar suggestion, and to presume that those whom they address are ignorant of the fact that two of the most deadly poisons known, strychnine and prussic acid, are the products of "roots and herbs." But perhaps the medicine-makers are correct in their presumption.

In further illustration of the reliability of nostrum compounders, I give three facts as samples of many more:—

A Yankee tin-peddler, with his cart, was selling goods some years ago in the country towns of New England. He happened to have with him some old bottles of medicine, and, to his surprise, found for them a ready sale. This was a sufficient hint for Yankee shrewdness. He fixed up a preparation of his own, printed a label which declared it a specific for certain diseases, and disposed of many bottles at a handsome profit. I need not give the details of his rise in the social scale, but he is now the well-known Dr. F., the wealthy proprietor of one of the most widely sold patent medicines in the United States.

Some years ago a lazy and inefficient cook was discharged from a California mining camp. Proceeding to San Francisco, he concocted a "bitters" by mixing aloes with bad whisky. His "bitters," ingeniously advertised, happened to "take" with the gullible public, and another man rose to fame and fortune, and

now writes Doctor in front of his name, although, like the graduate of the peddler's cart, he refrains from writing M. D. after it.

In a handsome and elegantly furnished house near Fifth Avenue in New York City, lives a very good looking and pleasant young man, who is the real owner of the most renowned soothing syrup for children ever produced. He inherited the business from his father, and the elderly Mrs. W., under whose name their nostrum is advertised, has no real existence.

The above facts might readily be paralleled with many more of the same sort. They are given as typical examples of the inner histories of many of our most famous patent medicines.

In the second place, patent medicines, as a rule, are not what they pretend to be. In proof of this statement I give the analysis of a number of patent medicines, borrowing most of them from a valuable paper by Dr. A. B. Prescott, of the University of Michigan.

Some years ago a "Chinese" doctor traveled through Michigan in a car drawn by four horses, and having with him a band of music and a lecturer. He sold a pain-killer, said to be the result of profound study in China. His pain-killer was analyzed, and found to consist of spirits of camphor, spirits of lavender, ammonia, oil of sassafras, and alcohol.

Another pain-killer, known as "Nature's Own Cure," advertised as a sure relief for one hundred and sixty-six different diseases, consists of red pepper, ammonia, and alcohol.

"Fragrant Pain Curer" is ether, glycerine, common salt, and water.

"Golden Wonder, or Seven Seals" is ether, chloroform, camphor, peppermint oil, red pepper, and alcohol.

A New York "Elixir of Life" is aloes, cinnamon, sweet flag, angelica root, saffron, burnt sugar, glycerine, and alcohol.

A "Salt of Life" is baking soda, common table salt, Glauber's salts, and sugar, flavored with cinnamon, cardamom, orange peel, and violet root. This mixture, which is intended to be used constantly at meals, is sold for twenty-five cents a pound.

Another "Elixir of Life and Cure for Lung disease" is only pure water, and is directed to be given in small doses.

A "Soothing Powder" is pure rice starch.

Another "Salt of Life" is only common saltpeter.

"Radway's Ready Resolvent" is sugar, ginger, and cardamom.

A "Nerve Balsam" is oil of lemon, oil of bergamot, and cardamom.

"Nerve Spirit" is oil of lavender, oil of rosemary, and alcohol.

"Golden Medical Discovery" is laudanum, lettuce extract, honey, and bad whisky. It contains no discovery, and is very far from being "golden."

Cosmetics are sometimes harmless, but sometimes contain corrosive sublimate or chloride of mercury, which is rapidly absorbed through the skin, and is a deadly poison. Of twenty-one hair dyes, analyzed by Benjamin, a New York chemist, fifteen were poisonous.

Of advertised remedies for rheumatism, some contain salicine; one contains red pepper, licorice, and sugar; and one is nothing but alum and common salt.

Remedies for epilepsy generally contain bromide of potassium. Of nineteen such remedies analyzed in Germany, only four contained bromide of potassium; fifteen were valueless. One of these was spirits of camphor, and another was only roasted acorns. Not one of them would have been bought by anybody who knew of what it was made.

Of six ague cures analyzed at Ann Arbor, five contained the cheaper alkaloids of Peruvian bark, that is, substances similar to quinine, but cheaper and poorer. Two had red pepper, two had sulphuric acid, five had molasses, and one had wintergreen oil. One was only tincture of chloride of iron, molasses, and powdered charcoal. These were all advertised as new discoveries.

DIET IN RELATION TO AGE AND ACTIVITY.

BY SIR HENRY THOMPSON.

CONCLUDED.

THERE is a very common term, familiar by daily use, conveying unmistakably to every one painful impressions regarding those who manifest the discomforts indicated by it—I mean indigestion. The first sign of what is so called may appear even in childhood, not being the consequence of any stomachal disorder, but solely of some error in diet, mostly the result of eating too freely of rich compounds in which sugar and fatty matters are largely present. These elements would not be objectionable if they formed part of a regular meal, instead of being consumed as they generally are between

the meals, which already abound in every necessary constituent.

Sugar and fat are elements of value in children's food, and naturally form a considerable portion of it, entering largely into the composition of milk, which nature supplies for the young and growing animal. The indigestion of the child mostly terminates rapidly by ejection of the offending matter; but the indigestion of the adult is less acutely felt and is less readily disposed of. Uneasiness and incapacity for action, persisting for some time after an ordinary meal, indicate that the stomach is acting imperfectly on the materials which have been put into it. These signs manifest themselves frequently, and if nature's hints that the food is inappropriate are not taken, they become more serious. Temporary relief is easily obtained by medicine; but if the unfortunate individual continues to blame his stomach, and not the dietary he selects, the chances are that his trouble will continue, or appear in some other form. At length, if unenlightened on the subject, he seems "a martyr to indigestion," and resigns himself to the unhappy fate, as he terms it, of "the confirmed dyspeptic."

Such a victim may, perhaps, be surprised to learn that nine out of ten persons so affected are probably not the subjects of any complaint whatever, and that the stomach at any rate is by no means necessarily faulty in its action—in short, that what is popularly termed "indigestion" is rarely a disease in any sense of the word, but merely the natural result of errors in diet. For most men, it is the penalty of conformity to the eating habits of the majority; and a want of disposition or of enterprise to undertake a trial of simpler foods than those around them consume, probably determines the continuance of their unhappy troubles. In many instances it must be confessed that the complaint, if so it must be called, results from error, not in the quality of food taken, but in the quantity. Eating is an agreeable process for most people; and under the influence of very small temptation, or through undue variety furnishing a source of provocation to the palate, a considerable proportion of nutritious material above what is required by the system is apt to be swallowed. Then it is also to be remembered that stomachs which vary greatly in their capacity and power to digest, may all nevertheless be equally healthy and competent to exercise every necessary function. In like manner we know that human brains which are equally sound and healthy, often differ vastly in power and in activity. Thus a stomach which would be slandered by a charge of incompetence to perform easily all that it is in duty bound to accomplish, may be completely incapable of digesting a small excess beyond that natural limit. Hence, with such an organ, an indigestion is inevitable when this limit is only slightly exceeded. And so when temptations are considerable, and frequently complied with, the disturbance may be, as it is with some, very serious in degree. How very powerful a human stomach may sometimes be, and how large a task in the way of digestion it may sometimes perform without complaint, is known to those who have had the opportunity of observing what certain persons with exceptional power are accustomed to take as food, and do take for a long time, apparently with impunity. But these are stomachs endowed with extraordinary energy, and woe be to the individual with a digestive apparatus of moderate power who attempts to emulate the performance of a neighbor at table, who, perchance, may be furnished with such an effective digestive apparatus.

But, after all, let not the weaker man grieve overmuch at the uneven lot which the gods seem to have provided for mortals here below in regard to this function of digestion. There is a compensation for him which he has not considered, or perhaps even heard of, although he is so moderately endowed with peptic force. A delicate stomach which can just do needful work for the system and no more, by necessity performs the function of a careful door-porter at the entrance of the system, and like a jealous guardian, inspects with discernment all who aspire to enter the interior, rejecting the unfit and the unbidden, and all the common herd.

On the other hand, a stomach with superfluous power, of which its master boastfully declaims that it can "digest tenpenny nails," and that he is unaccustomed to consult its likes and dislikes, if it have any, is like a careless hall-porter who admits all comers, every pretender, and among the motley visitors many whose presence is damaging to the interior. These powerful feeders after a time suffer from the unexpended surplus, and pay for their hardy temerity in becoming amenable to penalty, often suddenly declared by the onset of some serious attack, demanding complete change in regimen,—a condition more or

less grave. On the other hand, the owner of the delicate stomach, a man with a habit of frequently complaining of slight troubles, perhaps, and always careful, will probably, in the race of life, as regards the preceding pilgrim, take the place of the tortoise as against the hare. It is an old proverb that "the creaking wheel lasts longest," and one that is certainly true as regards a not powerful but nevertheless healthy stomach which is carefully treated by its owner, to whom this fact may be acceptable as a small consolation for the possession of a delicate organ; for it is a kind of stomach which not seldom accompanies a fine organization. The difference is central, not local, a difference in the nervous system chiefly; the impressionable mental structure—the instrument of strong emotions—must necessarily be allied with a stomach to which the supply of nerve power for digestion is sometimes temporarily deficient, and always, perhaps, capricious. There are more sources than one of compensation to the owner of an active, impressionable brain, with a susceptible stomach possessing only moderate digestive capabilities—sources altogether beyond the imagination of many a coarse feeder and capable digester.

But it is not correct, and it is on all grounds undesirable, to regard the less powerful man as a sufferer from indigestion, that is, as liable to any complaint to be so termed. True indigestion as a manifestation of diseased stomach is comparatively quite rare, and I have not one word to say of it here, which would not be the fitting place if I had. Not one person in a hundred who complains of indigestion has any morbid affection of the organs engaged in assimilating his food. As commonly employed, the word "indigestion" denotes, not a disease, but an admonition. It means that the individual so complaining has not yet found his appropriate diet; that he takes food unsuited for him, or too much of it. The food may be "wholesome enough in itself," a popular phrase permitted to appear here, first, because it conveys a meaning perceived by every one, although the idea is loosely expressed; but secondly, and chiefly, for the purpose of pointing out the fallacy which underlies it. There is no food "wholesome in itself;" and there is no fact which people in general are more slow to comprehend. That food only is wholesome which is so to the individual; and no food can be wholesome to any given number of persons. Milk, for example, may agree admirably with me, and may as certainly invariably provoke an indigestion for my neighbor; and the same may be said of almost every article of our ordinary dietary. The wholesomeness of a food consists solely in its adaptability to the individual, and this relation is governed mainly by the influences of his age, activity, surroundings, and temperament, or personal peculiarities.

Indigestion, therefore, does not necessarily, or indeed often, require medicine for its removal. Drugs, and especially small portions of alcoholic spirits, are often used for the purpose of stimulating the stomach temporarily to perform a larger share of work than by nature it is qualified to undertake,—a course which is disadvantageous for the individual if persisted in. The effect on the stomach is that of the spur on the horse; it accelerates the pace, but "it takes it out" of the animal, and if the practice is long continued, shortens his natural term of efficiency.

It is an erroneous idea that a simple form of dietary, such as the vegetable kingdom in the largest sense of the term furnishes, in conjunction with a moderate proportion of the most easily digested forms of animal food, may not be appetizing and agreeable to the palate. On the contrary, I am prepared to maintain that it may be easily served in forms highly attractive, not only to the general, but to a cultivated taste. A preference for the high flavors and stimulating scents peculiar to the flesh of vertebrate animals, mostly subsides after a fair trial of milder foods, when supplied in variety. And it is an experience almost universally avowed, that the desire for food is keener, that the satisfaction in gratifying appetite is greater and more enjoyable on the part of the general light feeder than with the almost exclusive flesh-feeder; for this designation is applicable to almost all those who compose the middle class population of this country. They consume little bread and few vegetables; all the savory dishes are of flesh, with decoctions of flesh alone for soup. The sweets are compounds of suet, lard, butter, eggs, and milk, with very small quantities of flour, rice, arrowroot, etc., which comprise all the vegetable constituents besides some fruit and sugar. Three-fourths at least of the nutrient matters consumed are from the animal kingdom. A reversal of the proportions named, that is, a fourth only from the latter source, with three-fourths of vegetable produce, would furnish greater

variety for the table, tend to maintain a cleaner palate, increased zest for food, a lighter and more active brain, and a better state of health for most people not engaged in the most laborious employments of active life. While even for the last named, with due choice of material, ample sustenance in the proportions named may be supplied. For some inactive, sedentary, and aged persons, the small proportion of animal food indicated might be advantageously diminished. I am frequently told by individuals of sixty years and upwards that they have no recollection of any previous period, since reaching mature age, at which they have possessed a keener relish for food than that which they enjoy at least once or twice a day since they have adopted the dietary thus described—such appetite, at all events, as has rarely offered itself during years preceding, when the choice of food was conventionally limited to the unvarying progression and array of mutton and beef, in joint, chop, and steak, arriving after a strong meat soup, with a possible interlude of fish, and followed by puddings of which the ingredients are chiefly derived from animal sources. The penetrating odors of meat cookery, which announce their presence by escape from the kitchen, and will pervade the air of other rooms in any private house but a large one, and which are encountered in clubs, restaurants, and hotels without stint, alone suffice to blunt the inclination for food of one who, returning from daily occupation fatigued and fastidious, desires food easy of digestion, attractive in appearance, and unassociated with any element of a repulsive character. The light feeder knows nothing of the annoyances described, finds on his table that which is delightful to a palate sensitive to mild impressions, and indisposed to gross and overpowerful ones. After the meal is over, his wit is fresher, his temper more cheerful, and he takes his easy chair to enjoy fireside talk, and not to sink into a heavy slumber, which on awakening is but exchanged for a sense of discontent and stupidity.

The doctrine thus briefly and inadequately expounded in this paper may probably encounter some opposition and adverse criticism. I am quite content that this should be so. Every proposal which disturbs the current habits of the time, especially when based on long prevalent custom, infallibly encounters that fate. But of the general truth, and hence of the ultimate reception of the principles I have endeavored to illustrate, there cannot be the faintest doubt. And I know that this result, whenever it may be accomplished, will largely diminish the painful affections which unhappily so often appear during the latter moiety of adult life. And having during the last few years widely inculcated such general dietetic principles and practice, with abundant grounds for my growing conviction of their value, it appears to be a duty to call attention to them somewhat more emphatically than in preceding contributions already referred to. In so doing I have expressly limited myself to statements relating to those simple elementary facts concerning our every-day life, which ought to be within the knowledge of every man, and therefore such as may most fitly be set forth in a publication outside of that field of special and technical record which is devoted to professional observation and experience.—*Nineteenth Century.*

DISPOSAL OF SLOPS AND GARBAGE.

BY J. H. KELLOGG, M. D., MEMBER OF THE STATE BOARD OF HEALTH.

If you had known what an unsavory subject I have, you would have been glad enough to have it put off, and I should be glad to be excused. I had an accident day before yesterday, and was in bed until I came down here, and do not feel that I am good for anything except to fill a vacuum. The subject is an unsavory one. Everybody tries to get it out of sight.

A man met a boy on the street the other day, and said, "Sambo, what makes you put all the nice peaches on top?" He said, "Same reason, sah, dat makes you have Milwaukee pressed brick in front ob your house, and de back yard chiefly slop bar'l, sah." We put these things in the back yard, out of sight; but they are there, doing their work of mischief. I am to tell you something about their disposal.

We will consider, first, how they are usually disposed of. The back yard becomes, in the majority of cases, the depository of all sorts of things that are decomposable, that become offensive, and are the sources of disease. How do they become sources of disease? how do they become offensive? why are slops and garbage dangerous? and why do we need to talk about them? You have heard about germs; everybody knows something about germs; perhaps most of you know what they are. The newspaper is the great

public educator, and we have plenty of dissertations in that about these enemies to life and health, so I judge you know something about them.

Germs are useful; they are not made for harm, but to reduce us to dust after we are dead. If it were not for germs, the leaves and blades of grass that drop upon the ground would not decay; animals that die would not decay; but dead things would collect upon the surface of the earth. We would soon be buried up by accumulated masses of dead matter. Go into a country where the air is too dry for germs to thrive, and you will find that dead things do not decompose as they do in more moist and less pure atmospheres.

In Dakota and some other places, the Indians bury their dead in the air instead of under ground. They wrap the bodies in bark, and place them upon high poles. In the dry atmosphere of that country, they dry up, and do not decompose a particle. I have at home the dried arm of an Indian chief, which is wholly free from any taint, contracted to about half the natural size. The germs did not attack it to do any harm; the conditions were not favorable for germs to develop. It is the business of germs to destroy dead matter—decomposable matter. Decomposition would not take place without them.

If it were not for germs, bread would not rise. When a can of fruit ferments, it is because the fruit was not boiled enough, or the covers were not air-tight, and a few germs entered, and did the mischief—spoiled the fruit. The best air has more or less germs in it. Wherever there is a fruitful soil for germs to grow, we have them in great numbers. Wherever we have decomposable matter, animal or vegetable, germs abound.

A great many diseases are produced by germs. This is rather a modern doctrine; but it is found by careful investigation to be the case. It is perhaps not at present possible to say with scientific accuracy that germs do actually produce disease, but they are found always present with certain kinds of disease, as in typhoid fever, diphtheria, and others. Recently it has been found that they are present in consumption; and Prof. Koch has found what he terms the cholera germ. Whether these germs are present because the disease produces favorable conditions for their development, or whether the germs cause the disease, we do not know; but they are found together, and it is highly probable that germs have something to do with causing disease. Germs get into our bodies through various channels, such as drinking-water and food, the former being a favorite channel. They may come in through the air; and it is possible for them to get in through the skin if it is broken. Some time ago I knew of a case in which a doctor was attending a diphtheria patient who in coughing threw some sputa upon his forehead where there was a break in the skin, and the doctor had diphtheria in his forehead.

Germs do not do us very much harm when we are well, unless they come upon us in very great numbers; but when we are debilitated from any cause, then, if present, they pounce upon us while we are still alive, and undertake to devour us. It is found that germs which are harmless ordinarily, as *bacterium termo*, and are always present in the air, in food, etc., when they become unusually numerous in the water or food, do us harm; they may possibly produce diphtheria or something of that kind. Speaking of diphtheria, it may not be possible to draw a distinct line between cases of simple sore throat and cases of diphtheria; it is possible that ordinary sore throat gradually shades off into malignant diphtheria, and that the difference in the violence of the disease is due to the numbers of the germs or the conditions of the body at the time the disease seizes upon it; at any rate, there are quite a number of investigations that point in this direction. It is important that we do not take cold and have sore throat, and that there should not be any germs around when we get a sore throat—that is a raw throat. If the mucous membrane is broken, those germs that can get in may pass through the raw sore throat into the tissues. If they do not get into the tissues, they can do no harm; but if they get in, they may do great mischief, for they multiply enormously. In a very few days, two or three, or a few, may outnumber the whole population of the globe.

Why do flies congregate about our back doors? They are there because filth and germs are there. Germs are there to eat up the garbage, and flies are there to eat up the germs. We can ascertain this by looking at a fly under the microscope. Notice a fly when he alights on the table. I used to wonder what the fly was about when brushing down his wings with his hind feet. I thought he was making his toilet. You will notice that after he has brushed off his wings and body and each

separate leg, he rubs his feet together, and then puts something into his mouth. If you put that fly under the microscope, you will see that all parts of his body are covered with little hairs and spines, and among the hairs and spines are gathered large numbers of germs. These are floating through the air, and the fly knows where they are; he soars about, and catches the germs, and then alights and brushes them off and eats them. There is something more than sentiment in the old nursery rhyme about not killing the fly. He is a scavenger, a sort of sanitary sheriff. Ought we not to protect instead of killing him? Don't be too fast; pretty soon that fly comes along, and puts a punctuation mark on a morsel of food you are about to eat. The microscope shows that the punctuation mark has those veritable germs in it; so you have to eat them after all. It has been found that the eggs of the tape-worm and other parasites are often distributed in this way. Wherever there are a great many flies about, there is something wrong. Why don't they gather around the front door as well as around the back door? The reason is plain: it is because the back yard is the depository of decomposable matter; germs thrive upon it, and the flies come there to eat the germs. If you keep your premises clean, the flies will not trouble you. Flies are most numerous in August, because then we have more of this decomposable matter than at any other season of the year. The dews in the night start whatever decomposition has been stopped in the daytime by drying, and the flies have a fine feast.

Notice the sanitary condition of an ordinary house. [Drawing on the blackboard.] Suppose this is a house; the slops are thrown out here around the back door. You know by the color of a certain spot of ground that it has been the depository of slops, and perhaps there is a garbage heap besides. If your eyes had microscopic power, you would see the air all about filled with germs. You have been shut up in a dark room, and noticed a ray of light passing through a small opening in the shutter, and motes floating in it. Some of those motes are particles of dust, and some of them are germs, and you can see how full the air is of them. If you could see the air about the place in the yard where slops are thrown, you would find it fuller than the most populous sunbeam you ever saw. It is completely filled with germs. Suppose the wind blows toward the house; all the air in the house will become contaminated, and it is no wonder if people have sore throats and diphtheria. I think it is quite probable that germs may be the cause of ordinary sore throats. We know that sore throats are often contagious; beginning with a cold, a mild sore throat follows, growing worse and worse, and by and by diphtheria is developed.

Another way of disposing of slops is to have a general depository, a cess-pool, back of the house. What becomes of them? A man out West said it was the fashion there when a new settler came, first to put up a house of some sort, then to make two holes in the ground, one to put water into, and the other to take water out of; and that what went into one came out of the other, half of the time. Let's see how that happens. What does he dig that slop hole for?—To get rid of the slops. They are not annihilated; they do not go out of existence; they go right down into the ground. The cess-pool will be close to the house, it is likely, and the well will be close to the cess-pool; for it is desirable to have both convenient. It may be the well will be just inside the door, so as to be very convenient, and the cess-pool just outside, with nothing but a partition between. The barrel of the cess-pool keeps getting empty, for you purposely leave the bottom out. The slops soak through the soil until they reach the rock or hard soil, which may be 3, 6, 10, or 20 or more feet; but by and by the foul liquid gets down there, and then it begins to spread out along the surface of the hard stratum, and by and by it reaches the well; it may be 4, 5, or 6 years, but it reaches it sooner or later. Does not the soaking through the soil purify it? Most people have that idea; but it is not true, except in a very limited degree. When the first dose of slops goes down, the soil does purify it by taking the impurities into itself, and the water gets down to the hard stratum comparatively pure; but each succeeding pailful deposits more and more filth, and by and by the whole soil becomes saturated; then if you should put pure water in the cess-pool, it would come out at the bottom impure. The longer you use the cess-pool, the larger the area of soil that becomes saturated. Sometimes this thing has been going on for 30 or 40 years. When a cess-pool gets stopped, it is moved, or a new

one made. Imagine the condition of a house lot, 4 rods by 8, with half a dozen old cess-pools on it. If any of you ever attempted to move a cess-pool, you know what a horrible condition of things there is in it. I had that experience when I was a small boy, and it taught me a sanitary lesson I shall never forget. I never would have anything to do with them after that. If we have a great many such places in a village, after a while the soil of the entire village may become contaminated. This filth gets into the soil with more or less rapidity, according to the nature of the soil; if it is gravelly, it drains right through without any change; if it is a more compact soil, it does not get through so fast, and is purified a little more; but after a time the soil will become contaminated, and the impurities will get into the well. How near a cess-pool may the well be with safety? It is not safe within a good many rods. It is possible that conditions will arise so that it is hardly safe to have the cess-pool a mile off, unless you are sure that the geological strata are not of such a dip as to let the discharge into the well. Sometimes a cess-pool will discharge into a cistern. A family found that their filter was acting very badly—that the water smelled very foul. They depended upon the cistern for drinking water. They used the water from another cistern which was comparatively good, and could be drunk without filtering, while this water came out of the filter smelling bad and tasting bad, although clear. Upon examining it, I found it alive with bacteria and various kinds of germs; it was filled with the products of decomposition to a high degree. I found they had been putting this impure water into the filter until it had become saturated. How did the cistern become so foul? I looked around, and found that the cistern was located near a drain which consisted of a wooden box that had rotted away and become obstructed so that the water, instead of going into the cess-pool, saturated the ground, and by and by the lining of the cistern gave way,—it was a Michigan cistern, plastered right on the ground,—and the water came into the cistern; so the people had been doing what they do out West, putting water into one hole, and taking the same water out of another. That thing had been going on for some weeks. It was no wonder somebody was sick; the wonder was that there was no more sickness. There is mischief going on above ground and below whenever the slops and garbage are left upon the premises to decompose.

The problem is, How shall we get rid of these slops? If the ordinary way is not the right way, how shall we do? Dr. Baker offered a wise proposition, some time ago, with reference to garbage; that is, Do n't have any. That is the best way. Of what does it consist?—Principally of remnants from the table, portions of meat, vegetables, etc., that have been allowed to decompose a little. A little more economy will prevent a great share of it. But what shall we do with what cannot be disposed of?—The greater portion can be saved as food for animals; chickens will eat up the greater share of the remnants from the table, provided it is properly cared for, and not allowed to sour.

One thing can be done, it can be burned. It is not the best fuel, but it is very good; it will burn as well as green wood, and in some parts of the world people have to use a great deal poorer. This is the most useful way to dispose of it. One thing we ought not to do, that is, we ought not to dump it into a barrel and allow it to sour, and then sell or give it to the milk-man. It is not uncommon in some of the large cities to see the milk-man driving along with a milk can in one end of his cart, and a garbage box in the other. The garbage goes out as milk. This garbage contains foul acids, the result of destructive changes which take place in the organic substances of which it is composed. These deleterious substances go into the cow's body, and come out in the milk, then go into our bodies and our children's bodies, and it is no wonder they are sick.

Another way in which garbage can be disposed of, slops and garbage all together, is to have an air-tight receptacle to receive them, and then have it carried off two or three times a week. Have a cover that is air-tight; then there will be very little danger, indeed, of contamination. With reference to slops, there are two ways in which they can be disposed of that are comparatively harmless: one is to carry them out and distribute them over the surface of the ground. If you have a large garden plat, the slops of an ordinary family can be disposed of by oxidation if scattered over the surface of a common village lot. Use ten square feet in one corner one day, and another plat the next, etc., and then no part will become offensive. The oxidation processes in the surface soil will entirely destroy

the organic matter in the slops. Yet there is a possibility that these slops contain dangerous germs; and these have so great vitality, that if a large amount of water should come down soon, it is possible they might be carried down into the moist parts of the soil, and multiply and increase in great quantities; and another rain carry them down a little farther, and by and by into the well; and a year or so later somebody has typhoid fever. This is not a perfect way. Another way, which is perhaps a little less offensive, but is open to the same objection, is to have a proper receptacle in the ground connected with a system of drainage tile running all through the ground underneath the surface three or four feet, so as not to freeze; then the receptacle should be arranged so as to empty itself by means of a siphon. It is important to have this latter arrangement, if you depend upon this system; because it is necessary to have the water come into these tiles with a good deal of an impetus, so as to flush the tile, and distribute the waste through the whole system of drainage.

This is open to the objection that if the slops are dangerously impure, it may be possible for the germs to find their way into the drinking water, if there be a well on the premises. One thing can be done with the slops if they are disposed of in this way, by which perfect safety may be secured; that is, they can be disinfected.

Dissolve a pound of copperas in a gallon of water, or a couple of ounces of sulphate of zinc, and put some of this solution into every pail of slops; this will destroy the germs, and there will not be enough disinfectant to do any great harm. The sulphates are easily decomposed and rendered insoluble by substances in the soil, so that very little would get into the well-water. It would require quite a quantity of sulphate of zinc to do any harm, even should it get into the drinking water; but a small quantity of germs may do a great deal of mischief, because they may multiply to millions in an hour.

MRS. LIVERMORE ON CORSETS.

MRS. MARY A. LIVERMORE, the eminent lady lecturer, in her admirable book, "What Shall We Do with Our Daughters?" speaks of this evil in woman's dress in the following language:—

Good health is a great pre-requisite of successful or happy living. To live worthily or happily, to accomplish much for one's self or others when suffering from pain and disease, is attended with difficulty. Dr. Johnson used to say that "every man is a rascal when he is sick." And very much of the peevishness, irritability, capriciousness, and impatience seen in men and women has its root in bodily illness. The very morals suffer from disease of the body. Therefore I would give to "our daughters" a good physical education.

"But suppose my daughter is so unfortunate as to have a sickly body at birth?"

Learn what is the cause of her feebleness, what is the defect in her physical organization, and then how to remedy it by wise, hygienic living. Correct living and intelligent physical training will eliminate many of the tendencies to ill health which we bring into the world with us.

We shall by and by come to recognize the right of every child to be well born,—sound in body, with inherited tendencies toward mental and moral health. We have learned that it is possible to direct the operations of nature so as to have finer breeds of horses, cattle, and fowls, to improve our fruits, flowers, and grains. Science searches for the pre-natal laws of being, and comes to the aid of all who wish to improve the lower creation. When shall an enlightened public sentiment demand that those who seek of God the gift of little children, shall make themselves worthy the gift by healthful and noble living, and by a practical acquaintance with the pre-natal laws of being and all that relates to the hereditary transmission of qualities?

There has been great improvement in the physical habits of women and girls within my memory. In my girlhood, girls wore low-necked dresses and short sleeves almost universally, except in winter. Many were thus insufficiently clad, even in the severest weather. Flannel underwear was unknown, as were also rubber shoes and water-proof cloaks. Slippers and thin-soled shoes were worn on the streets in inclement seasons. Very little attention was given to regular bathing, ventilation, or the preparation of healthful food. Instead of mattresses, we slept on feathers, and lived in rooms with open fires, which roasted you on one side while you were freezing on the other. Glorified as these same open fires are to-day, I remember them with a shudder. We now have better houses, better food, more comfort, a more cheerful system of relig-

ion, a larger intellectual culture, and a nobler outlook for womanhood; and as far as these have prevailed, they have undoubtedly told favorably on the health of women during the last fifty years.

If, however, we would give to our daughters a good physiological training, we must attend carefully to their dress. The dress of women at the present time is about as damaging to health as it well can be, and many of our girls are made the victims of disease and weakness for life through the evils of the dress they wear from birth. The causes of their invalidism are sought in hard study, co-education, too much exercise, or lack of rest and quiet at certain periods when nature demands it. All the while the medical attendant is silent concerning the "glove-fitting," steel-clasped corset, the heavy, dragging skirts, the bands engirding the body, and the pinching, distorting boot. These will account for much of the feebleness of women and girls; for they exhaust energy, make freedom of movement a painful impossibility, and frequently shipwreck our young daughters before they get out of port.

We begin very early to injure the health of our girls by means of their dress. Riding over the New York Central Railroad from Albany to Buffalo in a drawing-room car, I observed a lady occupying one of the compartments with her two little children, a girl and a boy, accompanied by a nurse. The little boy, rosy and happy, made frequent visits to the saloon of the car, where all welcomed him; for he had a gay temper, and overflowed with good-nature and sociability. As he went back to his sister with an orange, an apple, a picture, a pencil, or a bit of paper, she would essay to accompany him on his next excursion among us. We would barely catch a gleam of the child's shining face and delicate raiment, when the watchful nurse would swoop down upon her, and bear her back within the close, stuffy compartment. What was the matter?

The little boy was sensibly dressed in dark stuff, suitable for traveling, with a white collar about the neck. But his sister wore an immaculate white Marseilles dress, then the fashion for children, ruffled, tucked, shirred, embroidered, and be-furbelowed generally. The dress was tied back with a pink sash of most delicate shade. Her lisle-thread stockings, reaching above the knee, were of the same delicate hue. Her dainty boots were of very light kid. Her hair, soft and shining, like spun gold, was braided and curled, and tied back with ribbons of the same exquisite pink. She wore pink shoulder-knots, held in place by little pins of gold, and was further adorned with bracelets, finger-rings, and a gold neck-chain with a locket attached. This was the remonstrance made to this overdressed little creature: "You'll spoil your dress out there, and ruin your pretty stockings, and get your hair all out of curl. You know you want to look nice when you get to Auntie's, so you must sit here, and be a lady."

Now before that ride was ended, the child had learned a lesson which she will never forget,—that clothes are of small moment to boys, while to girls they are of vast importance, so that enjoyment, comfort, and play must be subordinated to them. This "gospel of good clothes" is continually dinned into the ears of the girl, as she is growing into young womanhood, till she is dominated by it. Is she invited to a picnic, excursion, lawn-party, wedding, or funeral, the first question asked is, "What shall I wear?" Not so with her brother. He knows what he will wear,—the suit out of which he jumped on Sunday night as he bounced into bed, and which, for aught he knows, lies where he doffed it. He will wear that, for he has no other, and he wants no other.

Years roll away, and the little girl reaches womanhood. She has promised her hand to the one man whom she has learned to love. Parents and friends approve of the lover, and she begins her preparations for the future home, which her imagination invests with every charm. In what do these preparations consist?—In the manufacture of clothing of every conceivable fashion, to be worn on every supposable occasion, in quantities that are absolutely wasteful. She will sew to the very verge of exhaustion, and go to her new home with trunks packed with everything to wear of which you have ever heard, as well as with garments of whose existence you have never dreamed; and, if you did not know to the contrary, you might infer that a partnership in marriage includes a partnership in business, and that the newly wedded pair proposed to open a store for the sale of ready-made clothing for women; or that it is the custom of the country for the bride to provide herself with all the clothing needed during her life, the husband

being expected to furnish her only such garments as may be necessary at death, —a shroud or grave-gown.

We do even worse than this; for we have a theory, generally accepted in civilized society, which we never formulate in speech, but to which we are very loyal in practical life. This theory, put in plain language, is this: "God knows how to make boys; and when he sends a boy into the world, it is safe to allow him to grow to manhood as God has made him. He may be too tall or too short, too stout or too thin, too light or too dark. Nevertheless, it is right; for God understands how to make boys. But when God sends a girl into the world, it is not safe to allow her to grow up to womanhood as he has made her. Some one must take her, and improve her figure, and give her the shape in which it is proper for her to grow."

If an artist, with a commission to cut in immortal marble a statue of the Goddess of Liberty, of Justice, or Peace, an Aurora, the Muses, or Graces, should copy the figure of the fashionable woman made over by the *modiste* and the corsets, he would lose caste, not alone with artists, but with the civilized world. His statue would be received everywhere with laughter and derision. He would seek, instead, as a model, one of the matchless living forms on which no corset has begun its deforming work, and then add another to "those glorious statues which we pretend to admire, but refuse to imitate."

While it is undoubtedly true that the practice of tight lacing is regarded with growing disfavor to-day, it is also true that the corsets in vogue at present are more objectionable than those worn even half a century ago; for those were home-made, and while they could be very tightly laced, did not fit the figure well, and were free from the torture of whalebones and steel front pieces all stitched in, while broad straps passing over the shoulders supported them, and the clothing hung upon them. But the modern corset is so ingeniously woven that it presses in upon the body, the muscular walls, the floating ribs, the stomach, the hips, and the abdomen, compelling them to take the form the corset-maker has devised in lieu of that God has given. Stiff whalebones behind, and finely "tempered steel fronts" pressing into the stomach and curving over the abdomen, keep the figure of the girl erect and unbending, while nature has made the spine supple with joints.

Physicians have persistently condemned the corset for half a century, even when it was not so harmful an article of dress as it is to-day. The educated medical women, who are gaining in numbers, influence, and practice, denounce it unqualifiedly, and lay to its charge no small amount of the dire diseases on whose treatment gynecologists fatten, and declare that it enhances the perils of maternity, and inflicts upon the world inferior children.

It is a mistake on the part of our daughter that the corset will give her beauty of figure. The young American girl is usually lithe and slender, and requires no artificial intensifying of her slightness. The corset will give her only stiffness of appearance, and interfere with that grace of motion which is one of the charms of young girls. The basque under-waist, made as a substitute for the corset, and beginning to supersede it, fits the figure trimly, revealing its graceful contour, and is kept in place, not by bone, or slips of steel, or thickly stitched-in stiff cords, but by the weight of the skirts buttoned on the lower part. Over this under-waist the outer dress can be fitted, and its waist will be smooth and unwrinkled,—a desideratum to most women.

The stout woman who wears a corset to diminish her proportions, only distorts her figure; for her pinched waist causes her broad shoulders and hips to look broader by contrast; while the pressure upon the heart and blood-vessels gives to her face that permanent blowzy flush that suggests apoplexy. "Who can forgive the unhealthy cheek and red nose induced by such a practice?" says Mrs. Haweis in her "Art of Beauty," "and who can forget the disease which has come or is coming?"

TYROTOXICON, CHEESE POISON.

ABSTRACT OF A PAPER BY PROF. V. C. VAUGHAN, M. D., PH. D.

At the meeting of the Michigan State Board of Health, July 14, 1885, Dr. Vaughan presented a report of his investigations on poisonous cheese. It is well known that cases of severe illness follow the eating of some cheese. Such instances are of frequent occurrence in the North German countries and in the United States. In England they are less frequently observed; while in France,

where much cheese is made and eaten, these cases are said to occur very rarely. A few years ago the reputation of a large cheese factory in northern Ohio was destroyed by the great number of cases of alarming illness arising from eating its cheese. Dairy-men know this cheese as "sick" cheese.

A German author says: "The numerous kinds of soft cheese prepared in small families, or on small farms, are generally the cause of the symptoms; while it is quite exceptional to hear of symptoms arising from the use of cheese prepared in large quantities." Some two years ago, a family in Alpena, Mich., was poisoned by eating cottage cheese; but the cheese which poisoned so many in this State last year was made at one of the largest factories in the State, and by a thoroughly experienced cheese-maker. The old, foul-smelling cheese, such as Limburger and Schweitzer, have never been known to be poisonous.

The symptoms produced by "sick" cheese, as reported by German and American physicians, agree quite closely, and are as follows: Dryness of the mouth and throat, with a sense of constriction, nausea, vomiting, diarrhea, headache, sometimes double vision, and marked by nervous prostration. In rare instances the sufferer dies from collapse. As a rule, recovery occurs in a few hours, or at most, after a few days. The symptoms of cheese poisoning, and those of sausage, canned meat, and fish poisoning are very similar, though death results more frequently from the others mentioned than from cheese poisoning.

The samples of cheese examined had no peculiarities of appearance, odor, or taste by which it could be distinguished from good cheese. It is true that if two pieces of cheese—one poisonous and the other wholesome—were offered to a dog or a cat, the animal would select the good piece; but this was probably due to an acuteness of the sense of smell possessed by the animal and not belonging to man. Indeed, if a person tasted a cheese knowing that it was poisonous, he might detect a sharpness of taste which would not ordinarily be noticed.

There is no certain means aside from a chemical examination, by which a poisonous cheese can be distinguished from a wholesome one. The most reliable ready method is probably that proposed by Dr. Vaughan a year ago, which is as follows: Press a small strip of blue litmus paper (which can be obtained at any drug store) against a freshly cut surface of the cheese; if the paper is reddened instantly and intensely, the cheese may be regarded with suspicion. When treated in this way, any green cheese will redden the litmus paper, but ordinarily the reddening will be produced slowly, and will be slight. If the piece of cheese be dry, a small bit should be rubbed up with an equal volume of water, and the paper should then be dipped in the water. Dr. Vaughan does not regard the above test as free from error, but as the most reliable ready means now known. Every grocery-man should apply this test to each fresh cheese which he cuts. The depth of the reddening of the paper may be compared with that produced by cheese which is known to be wholesome.

Dogs and cats, at least, are not affected by eating poisonous cheese. This is probably due to the fact that they do not get enough of the poison from the amount of cheese which they eat. The pure, isolated poison in sufficient doses would undoubtedly produce upon the lower animals effects similar to those produced on man.

Dr. Vaughan has succeeded in isolating the poison, to which he has given the name "tyrotoxicon" (from two Greek words which mean cheese and poison). It is a product of slight putrefaction in the cheese, which probably occurs in the vat, as the curd has been known to poison a person. By this slight putrefaction, or excessive fermentation, as it may be called, a large amount of buteric acid is formed, and this, in the presence of the caseine of the cheese, is capable of developing a poison. Different samples of poisonous cheese contain different amounts of the poison. The same weight of cheese from one cake furnished three times as much poison as that from another cake. The poison was obtained in long, needle-shaped crystals, which were freely soluble in water, chloroform, alcohol, and ether. The smallest visible fragments of a crystal placed upon the end of the tongue cause a sharp stinging pain at the point of application, and in a few minutes, dryness and constriction of the throat. A slightly larger amount produces nausea, vomiting, and diarrhea.

—A change of air is of less value than a change of scene; unless it be a change from an impure to a pure air. The air is changed every time the direction of the wind is changed.—*Dr. Hamilton.*

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Conducted by Mrs. E. E. KELLOGG, A. M., Superintendent of Hygiene of the National W. C. T. U.

THANKSGIVING ODE.

ONCE more the liberal year laughs out
O'er richer stores than gems or gold;
Once more with harvest-song and shout
Is nature's bloodless triumph told.

Our common mother rests and sings,
Like Ruth, among her garnered sheaves;
Her lap is full of goodly things,
Her brow is bright with autumn leaves.

O favors every year made new!
O gifts with rain and sunshine sent!
The bounty overruns our due;
The fulness shames our discontent.

We shut our eyes, and flowers bloom on;
We murmur, but the corn-ears fill;
We choose the shadow, but the sun
That casts it shines behind us still.

God gives us with our rugged soil
The power to make it Eden-fair,
And richer fruits to crown our toil
Than summer-wedded islands bear.

Who murmurs at his lot to-day?
Who scorns his native fruit and bloom?
Or sighs for dainties far away,
Beside the bounteous board of home?

Thank Heaven, instead, that Freedom's arm
Can change a rocky soil to gold;
That brave and generous lives can warm
A clime with Northern ices cold.

And let these altars, wreathed with flowers
And piled with fruits, awake again
Thanksgivings for the golden hours,
The early and the latter rain!

— *Whittier.*

SHAKEN.

ALLOW me the pleasure of introducing to you Mrs. Given. She is the picture of forlornness; so is her room at their luxurious city home; so must every one be who comes into her room and looks at her; if not she will moan:—

"Do n't! I can't bear it!"

The family physician could n't cure her, so they had another. He called it "dyspepsia," prescribed oats and exercise, and was told he need n't call again. The next doctor gave seven doses a day, and three a night, and allowed turtle soup, salmon and lobster salad, roast pig and ducks, boiled fruit, pudding and pastry, ice-cream, confectionery, and nuts, "and any other little thing, nourishing and nice, she fancied, for dinner at six P. M." She liked the doctor, but was n't as well, and they dismissed him. Her doctors are legion. We omit the rest.

Mr. Given was rather a noble man, decidedly a loving husband; also, he was rich, and he did n't spare anything to cure her. She was rather a noble woman, decidedly a loving wife, and not insensible to her mercies; for she often said the heart of her trouble was that she had every thing to enjoy, and could n't enjoy anything.

Nothing worked right that was tried for her benefit. Riding hurt her back. Walking was n't to be thought of. Light hurt her eyes. Music made her weep, and weeping gave her the headache. Reading put her to sleep by day, and kept her awake at night.

One sunny day she sent for the pastor of the church of which she was a worthy member, who left a sermon he was writing on, "Rejoice in the Lord always," to hear her confession, that she had been wishing she was dead, but knew she was not fit to die, and desired his prayers and the church's that she might have grace to endure.

"What is it that you endure?" asked her pastor. "It would seem you possess everything to make life desirable."

"That is the worst of it, sir," said she with asperity. "I have everything to enjoy, and can't enjoy it."

The minister did n't carry her case to the church, but saw the husband, and advised him to see a physician. Soon after these consultations, Mr. Given rushed into his wife's room one day, exclaiming:—

"I am ruined! I'm worse than a beggar! Oh, that we should ever come to this!" And he tore his hair, and tried to rend his garment; but the coat, being a first-class custom-made article, kept its integrity.

"What is it? What is the matter? Don't act so strange, Walter!" cried the wife, with unprecedented animation, getting up from the lounge, caressing and arranging the disheveled hair.

"If you were well, I might get over it. We'd give everything else up, and go to live in the old cottage, till I had time to re—"

"We'll go to-day, Walter. I can't see you in despair. Who knows but change of air will cure me?"

"Who knows, indeed?" said the husband in a dazed way, which deepened his wife's concern, and led her to ask which of all their doctors he preferred; for have a doctor he must.

"No doctor! Doctors can't help me. Well, if I must have a doctor to please you, call Dr. Oats. Got common sense, has Dr. Oats!"

He came, and after being closeted with the husband, said to Mrs Given:—

"His trouble has shaken him. Be cheerful and happy and helpful. Move out to the cottage, and don't mention business. Cook simple, nourishing food for him, with your own hands, eat it with him, having plenty of ripe fruit, with merry talk, sunshine, open air, rides, and walks. Brace up and do it, madam, and you'll save him."

"I'm dreadfully shaken myself, but I will do as you say, Doctor, I will, or die in the attempt."

"You'll live in the attempt," he replied, and departed.

It was a cozy, breezy nest of a cottage out of town, with a fruitful, flowery garden, and a smooth, shady, yet sunny lawn.

"How happy I could be, if I only had my old strength and health," thought Mrs. Given, when she found herself one morning at the cottage with her trunks, one inexperienced servant, and the fact that her husband would be there at supper.

She threw herself upon the lounge to rest and reflect. It was hard. Her ails and aches had not been imaginary. Her eyes were weak, so was her back, everything. Her muscles and nerves were all like loose fiddle strings. But the pains of fatigue, unlike those of inaction, were salutary. She soon rose, a little strengthened, and in the midst of unpacking and arranging, was surprised by a new sensation.

"I declare, I'm hungry!" she admitted. "I didn't know I ever could be hungry again." She got some ripe berries from the garden, and some cold, rare beef and a light loaf, which by some one's kind providence had accompanied them. She ate, and wondered that things tasted so good.

She was lying down that evening, from genuine fatigue, when she heard his step, and jumped up to meet her husband, who didn't look hilarious.

"'Tis beautiful out here," she cried, "and you'll forget your troubles, and we'll enjoy our tea, with strawberries and cream, out on the lawn, won't we?"

"Ye-e-s, dear, perhaps I can, if you're really able to enjoy it; but I fear you—"

"Never fear for me. I shall be well if you are. Why, the change has really made me hungry."

"Truly? That makes me glad I sent out some oysters in the shell. Let's light the oil stove, and roast them out in the arbor." They did, and she forgot she was weary, so glad was she that he laughed aloud at what she thought but a stale joke of hers, hinging upon stupidity and bivalves.

* * * * *

"Dr. Oats," she said, "its been six months, and I've never mentioned business to him, nor he to me. He seems perfectly cheerful, and reconciled to his losses, and I'm quite well, and both of us so happy; will it do any hurt, now, for me to ask him about his troubles? You know I'm full of curiosity."

"Not a bit of hurt," replied the doctor. So she said to her husband: "About the misfortunes, Walter; wouldn't you like to tell me, now, what it was you had lost, and how you lost it?"

"Yes; I had lost my wife by prosperity, and felt myself a beggar indeed."

"Was that all?"

"Yes."

Of course she was angry,—righteously,—and called him a deceiver, as he was; and he had to be humble, and beg her pardon. However, supper was waiting, and they were both hungry, so they made it up speedily, and have lived happily ever since.—*Household.*

—John Milton said: "Reformers look small in the eyes of the world, they are so far in advance, but large in the eyes of God, they are so much nearer him; for all real reform is Godward."

TEACH THE GIRLS TO WORK.

THOUGH you live in an elegant residence, and fare sumptuously every day, let your daughters feel it is a disgrace to them not to know how to work. I denounce the idea prevalent in society, that, though our young women may embroider slippers, and crochet, and make mats for lamps to stand on, without disgrace, the idea of doing anything for a livelihood is dishonorable. It is a shame for a young woman belonging to a large family, to be inefficient when the father toils his life away for her support. It is a shame for a daughter to be idle while her mother toils at the wash-tub. It is as honorable to sweep the house, make beds, and trim hats, as it is to twist a watch-chain. A popular notion, as far as I can understand the line of respectability, lies between that which is useful and that which is useless. If women do that which is of no value, their work is honorable. If they do practical work, it is dishonorable. That our young women may escape the censure of doing dishonorable work, I shall particularize. You may knit a tidy for the back of an arm-chair, but by no means make the money wherewith to buy the chair. You may, with a delicate brush, beautify a mantel ornament, but die rather than earn money enough to buy a marble mantel. You may learn artistic music until you can squall Italian, but never sing "Ortonville" or "Old Hundred." Do nothing practical if you would in the eyes of refined society preserve your respectability. I scout these finical notions. I tell you a woman has no more right than a man to occupy a place in this world unless she pays rent for it.—*Talmage.*

THE EDUCATION OF GIRLS.

How shall the girls be educated? is a question upon which much has been written. A very popular verdict is that they should be taught everything except what is useful. Latin, Greek, painting, music, drawing, embroidery, dancing,—in short, everything except that which is calculated to prepare them for the sphere which they will most likely occupy, namely, that of a home-keeper, or as it is termed, housekeeper. Of a practical knowledge of housekeeping a young lady is not unfrequently allowed to remain in entire ignorance all through girlhood.

Boys are reared very differently. After a general education, they are given special training for the vocation which they are expected to follow in life, whether a trade or a profession.

What father would think of setting his son up in business without giving him some practical knowledge of it? But the daughter, in many cases, is allowed to enter upon her life work without the least preparation. Remaining in school until about eighteen or nineteen, her education is considered finished, after which comes a few years' whirl in society, and then marriage. This is the usual order of events. Then rush upon her all the varied duties of this new life, not one of which she is prepared to meet, and yet on her satisfactorily performing these duties depends, in a great measure, her future happiness as well as that of those committed to her care. Now is this just?

It is wonderful, considering the circumstances, that she succeeds as well as she does; for housekeeping is one of the most difficult of trades; it is a combination of many trades in one, each of which, for success, must be well understood. Circumstances may be such that a lady is not compelled to work, but even then ignorance places her at a disadvantage with her domestics; for knowledge is power, even in household matters. But in the varied changes of fortune's wheels it is not impossible that where there is no necessity to-day, there may be to-morrow.

It is a mistaken idea that manual labor is not honorable, yet this is an almost universal feeling, especially in regard to girls. A young man who would choose to be a mechanic instead of a merchant, would doubtless lose caste with some, and yet he could hold his position in society; but let a girl prefer housework for an occupation, and what would be her social status? Why, she simply would n't have any. Polite society for her would be out of the question. Yet there is no reason why a girl who can cook a good dinner, or make a dress well, does not deserve as much credit as one who can play the piano or paint a picture; she is certainly more useful. But on account of this foolish notion many with no genius or talent must dream away so many hours each day, or inflict on their friends daubs of paintings, showing neither taste or skill, but simply expressing so much waste time. Not every girl can make a good musician or an artist, but any one can become a good housekeeper, and in being such she performs a sacred duty, and is entitled to dignity and respect; for there is no more honorable calling.

The housekeepers are the world's keepers. Happy homes are the safeguards of any people, but they cannot be happy or pleasant without the intricate domestic machinery running smoothly, and this requires intelligent, careful management. Surely, some little training for duties so varied and arduous should be given before the entire responsibility of a home falls upon a young woman.

Do not misunderstand us; we would not have a young girl made a drudge and kept in the kitchen, or spend any great part of her time there, unless circumstances demand it; and we are not saying a word against her liberal education. Let her study all the languages, dead or modern, for which she may have inclination. Let her take a regular college course with her brothers, and add music and painting if she has talent for them. Let her study what she will and all she will; but let her also have some practical knowledge of household duties; for if she has not this, she has not a liberal education.—*Ida Hinman, in the Christian Woman.*

THE STORY OF THE SHOES.

EVERYBODY in the world was barefooted. There were no new shoes in the shops, no old ones in the attics. There were none at all in the whole wide world, and probably no stores or attics either. In these good old times, when all feet were bare, a man could step on his neighbor's toes without bringing on spasms of agony; for bunions were unknown. "Stubbed toes" were common, but on land or sea not a single corn existed.

Finally somebody—whether man or woman nobody knows—made a pair of shoes, not of calf-skin, with high heels, foxed toes, and polished uppers, but flat and rough "foot-mats" of woven reeds. These, when tied on with leather thongs, kept the feet from the burning sands.

More and more people wore the queer "foot-mats," till there were hundreds and thousands, and hundreds of thousands of pairs in use. For every-day use they were light and strong. Some were gayly colored, and bound with fancy thongs, and those of the soldiers were iron-bound, with strong nails in the heels, and often whole soles of copper. In the days when all the shoes were new, and before people had begun to pinch their feet, they were used for queer purposes. If a man purchased a piece of land, he threw a shoe over it as a sign of ownership; if he entered a house, he removed his shoes as a sign of respect.

There is an old story of a shoemaker of Rome, long years ago, who thought he must become a preacher. Taking his son, he started out to tell the heathen of France and Britain about the Christ. They were very poor, so they paid their way by making shoes. Very nice ones they made, and found plenty of custom. For a long time they followed these two trades, till at last, in savage Britain, they were martyred. And to this day the 25th of October, the day on which Crispin was killed, is called St. Crispin's Day; and every shoe-maker in the world is called a son of St. Crispin.

For hundreds and thousands of years people have been wearing shoes of all kinds—of leather, wood, and reeds; brass-bound, iron-bound, gold-bound; with wide, blunt toes; with narrrow, pointed toes, a foot long. But the right shoe and the left of each foot were exactly the same same in shape, till about the year 1800, when a man invented "rights and lefts," which was a step in the right direction. Eighteen years later a man named Joseph Walker invented the shoe-peg. Before this, all the shoes had been sewed by hand,—a long, slow process; but now they are pegged. So popular did shoe-pegs become that thirty great manufactories were devoted to making them in Massachusetts alone; and so many were made that some speculators bought up many bushels, and tried to sell them for oats.

Inventors now began to construct all kinds of curious machines for making shoes. Great buildings were erected, machinery put in, and thousands of pairs turned out every day, millions every year. If one had sharp enough ears, and could listen, and hear the clatter of the millions of wooden shoes in China, Japan, France, and Holland, the softer thud of the leather shoes in our country, in England, and other parts of Europe, the click of the sandals in the sleepy lands of the East, the swish of the snow-shoe over the Canada snow-crust, or the ring of the fourteen-foot shoe of the Jemptland winter hunter, what would these sounds tell? Would these footfalls say to the listener, These busy feet are all bound on errands of mercy; over the hill, through the valley, in steep and dangerous places, these shoes do not slip or falter, or tarry to do wrong; they belong to earth's warriors, who are shod with the prepara-

tion of the gospel of peace? Would this be the answer for them all?—Alas, no! In the broad way are many, many feet hurrying on to death. Clogged and heavy, weary with sin, they stumble on, blind, reckless, lost.

Little shoes, strong, willing, eager to do right, beware of the first step out of the narrow way. There are mountains to climb, deserts to cross, rivers to ford; but, little shoes, little feet, if you listen to the gentle voice that said "Follow Me," you may one day tread the streets of gold in the heavenly city.—*Sel.*

WE REAP WHAT WE SOW.

For pleasure or pain, for weal or for woe,
'Tis the law of our being,—we reap what we sow.

We may try to evade them—may do what we will;
But our acts, like our shadows, will follow us still.

The world is a wonderful chemist, be sure,
And detects in a moment the base or the pure.

We may boast of our claims to genius or birth,
But the world takes a man for just what he's worth.

WEARY WOMEN.

Nothing is more thoroughly mistaken than the idea that a woman fulfills her duty by doing an amount of work that is far beyond her strength. She not only does not fulfill her duty, but she most signally fails in it; and the failure is truly deplorable. There can be no sadder sight than that of a broken-down, overworked wife and mother,—a woman who is tired all her life through. If the work of the household cannot be accomplished by order, system, and moderate work, without the necessity of wearing, heart-breaking toil, without making life a tread-mill of labor, then for the sake of humanity, let the work go. Better to live in the midst of disorder than that order should be purchased at so high a price—the cost of health, strength, happiness, and all that makes existence endurable.

The woman who spends her life in unnecessary labor is by this very labor unfitted for the higher duties of home. She should be the haven of rest to which both children and husband turn for peace and refreshment. She should be the careful, intelligent adviser and guide of the one, and the tender confidant and helpmeet of the other. How is it possible for a woman exhausted in body, and, as a natural consequence, in mind also, to perform either of these offices? It is not possible. The constant strain is too great. Nature gives way beneath it. She loses health and spirits and hopefulness, and more than all, her *youth*, the last thing that a woman should allow to slip from her; for, no matter how old she is in years, she should be young in heart and feeling, for the youth of age is sometimes more attractive than youth itself.

To the overworked woman this green old age is out of the question. Her disposition is often ruined, her temper soured, her very nature changed by the burden which, too heavy to carry, is only dragged along. Even her affections are blunted, and she becomes merely a machine,—a woman without the time to be womanly, a mother without the time to train and guide her children, a wife without the time to sympathize with and cheer her husband, a woman so overworked during the day that when night comes her sole thought and most intense longing are for the rest and sleep that probably will not come, and even if they should, that she is too tired to enjoy. Better by far let everything go unfinished, and live as best she can, then entail on herself and family the curse of overwork.—*Sanitary Magazine.*

TOBACCO AND SCHOLARSHIP.

One of the professors of the Polytechnic School of Paris inquired into the habits of the one hundred and sixty students there, and then made a comparison between their devotions to study and to smoke. He found that one hundred and two were smokers, and fifty-eight never used, or said they never used, the noxious weed. He then found that in each grade of the school the students who did not smoke out-ranked those who did smoke, and that the scholarship of the smokers steadily deteriorated as the smoking continued.

On account of several trust-worthy reports of such a nature, the minister of public instruction in France issued a circular to the directors of colleges and schools forbidding tobacco to students, as injurious to physical and intellectual development. The *Catholic Guardian* is authority for the statement that the youth of Catholic colleges are not allowed to use tobacco in any way; and to this fact is attributed much of their proficiency in mathematics and the other branches which wear more particularly on the intellect than some others.—*Christian Union.*

"Tobacco's the curse of the land."

Popular Science.

—A new cannon has been invented capable of firing explosive gelatine. A charge of one hundred pounds was carried a mile and a half.

—A Frenchman has invented a new form of horseshoe. It is made of sheep's horns, and has the advantage that it does not slip on the pavement.

—America has over seven hundred million acres of land not yet surveyed; and more than this amount which has been surveyed and not yet taken up.

—A woman recently jumped from the bridge over the Avon River, in England, going down a distance of 245 feet, and landing in the mud bank of the river. Strange enough, she escaped without serious injury.

—"English society," says a London journal, "is showing a strange interest in spiritism. The subject has for many years been confined to a very small section of enthusiastic believers. Of late, however, it has derived new vigor and a large body of recruits from the support accorded to it by her Majesty, Queen Victoria, and her family."

Enormous Crystals.—Crystals have been found in a Dakota mine thirty-six feet in length, and from one to three feet in thickness.

Some Old Trees.—The palm is rated at 700 years. The olive-tree, at the same age; the plane-tree, at 720; cedar, 800; oak, 1,500; yew, 2,880; baobab-tree, 5,000. An orange-tree at Versailles, France, is 473 years old.

Intelligence of Turtles.—A French scientist tells of a turtle that lived in his garden, and would respond to its name when called, running toward the speaker as rapidly as possible. Another scientist tells of a turtle that followed him about like a dog.

Outstripping the World.—A cannon-ball may travel as rapidly as 1,626 feet per second, or a mile in $3\frac{1}{5}$ seconds. The earth revolves on its axis at the rate of one mile in $3\frac{3}{5}$ seconds; so that a cannon-ball fired in the same direction would outtraverse the earth at the rate of $\frac{2}{5}$ of a second per mile.

The Electric Light and Plants.—Recent experiments made with the electric light and plants, show that while it sufficiently resembles sunshine to allow the plants to grow, it contains some properties which are likely to interfere with vegetation, though these may be kept back when the plants are inclosed in glass.

Electro-Plating the Human Body.—A Polish scientist has presented a new method of preserving the body after death. The surface of the body is covered with plumbago. It is then placed in a coffee-plating bath, and a plate of coffee deposited over the whole surface of the body, by means of which decomposition is prevented.

—There are two hundred and fifty species of plants cultivated for use, not including the various greenhouse plants, out of the one hundred and thirty thousand known to science. Among some of the common plants, the turnip, carrot, cabbage, raspberries, etc., originated in Central Europe. Cherries, plums, and apples are from Western Asia and Southern Europe; and grapes and almonds from the Mediterranean country. Olives are from Syria. Citrons, cucumbers, peas, rice, and cotton are from India. China furnishes the sugar-cane and the sweet orange. Wheat and barley are from Western Asia. The Jerusalem artichoke originated in Northern Asia, and never saw Jerusalem; and besides, it is not an artichoke. The tomato and turnip are from South America. Wheat and rice are among the oldest grains. For these and other interesting facts we are indebted to Dr. Candolle.

A New Life-Preserver.—Dr. Sylvester, of London, originator of the artificial method of respiration known by his name, suggests that a person may convert the upper part of his body into a life-preserver by puncturing a hole in the mucous membrane of his mouth at the junction of the gums and cheek, and inflating himself with air. It has long been known that a puncture in this part of the body would enable a person to blow air into the tissues; but no suggestion for utilizing this fact in the particular way suggested by Dr. Sylvester, has ever appeared before, and it is now a question whether there are not some practical objections to the use of this method. The time stated by Dr. Sylvester as necessary for the inflation of the head and neck in this way is three minutes. The Doctor does not tell us how a person who has fallen overboard is to support himself amid the waves while puncturing the mucous membrane according to his directions, and blowing himself up.

A Chemical Lesson.—A celebrated Parisian belle, who had acquired the habit of whitewashing herself, so to speak, from the soles of her feet to the roots of her hair with chemically prepared cosmetics, one day took a medicated bath; and, on emerging from it, she was horrified to find herself as black as an Ethiopian. The transformation was complete; not a vestige of the "supreme Caucasian race" was left. Her physician was sent for in alarm and haste. On his arrival he laughed immoderately, and said: "Madam, you are not ill; you are a chemical product You are no longer a woman, but a *sulphide*. It is not now a question of medicinal treatment, but of simple chemical reaction. I shall subject you to a bath of sulphuric acid diluted with water. The acid will have the honor of combining with you; it will take up the sulphur, the metal will produce a *sulphate*, and we shall find as a *precipitate* a very pretty woman." The good-natured physician went through with his reaction, and the belle was restored to her membership with the white race. Young ladies who are ambitious of snowy complexions, should remember this, and be careful what powders and cosmetics they use—if they use any at all.—*Popular Science News.*

GOOD HEALTH.

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

BOYS' RIGHTS.

EVERY boy has a right, first of all, to be well born. Of the few things which may be inherited from parents or ancestors, a good constitution and vigorous health and a well-balanced body may be reckoned as most valuable of all. It is as impossible to make a strong, energetic, healthy man out of a puny, weakly boy baby, as to make a strong ox out of a puny, sickly calf. It is true that in very rare cases unpromising infants do afterward develop into strong and healthy persons; but in these instances the constitution must have been unusually vigorous to have enabled the person to surmount the obstacles presented by a feeble infancy and childhood, and develop the robust health of later years.

Thousands of boys are cheated out of the life and vigor and physical stamina to which they are lawfully entitled, by the spendthrift habits, as regards vitality, of their parents. The wealthy man who squanders his property regardless of the future welfare of his children, spending his money recklessly and foolishly, is no more blame-worthy than the man who squanders his capital of strength in the same manner. Many a lad might truthfully rise up in condemnation of his parents, and say, "My father ruined my constitution by bad eating or drinking, by excessive labor in the mad race for fame or riches, and by selfish gratification in the use of alcoholic liquors or tobacco." Or he might say, "My mother robbed me of the health to which I was entitled, by dressing regardless of the requirements of health, by fashionable dissipation of every sort, and by neglect of the bodily culture necessary to develop and maintain good physical health."

As an acute thinker has said, "The greatest of all human felicities is to be well born,"—a blessing which the greater proportion of human beings are not permitted to enjoy.

Being well born, a boy has a right to be well reared, to be carefully nurtured, like the rare and tender plant which the gardener carefully protects from injury from every possible source, and faithfully supplies with all the conditions needed to develop in the very best possible manner and to the highest degree of perfection its symmetry and beauty. If one-half the amount of attention were given to children that is bestowed upon the raising of blooded horses, cows, sheep, or even sporting dogs and pet canaries, there would be a far less number of human beings who might be truthfully labeled, "human failures," numerous examples of which at present may be found in every community.

Parents who take it upon themselves to bring children into the world, should consider that in so doing they assume the grave responsibility of bringing them up in such a way as will make them capable of enjoying life, and making it a success for themselves and for their fellow-men. The rearing of a child comprises much more than simply supplying it with food and clothing and a place in which to live.

—No man can ride a spirited horse and calculate logarithms.

FOOD, HEALTH, AND MORALS.

Of physical habits, some of the most important relate to eating. As these habits are formed at a very early age, and have most important relations to health and happiness in later years, they are particularly worthy of attention. A child, even at a tender age, often acquires the habit of eating for the simple purpose of gratifying the palate, and very early acquires those tendencies which, when fully developed, end in a complete enslavery of the individual to appetite, or gluttony. At a very early age, the child should be taught that the appetite is to be controlled, that its palate must not be the sole judge respecting its food, but that reason must wield the controlling influence; that it should eat what is best for it, rather than what it likes best. Of course, it is understood that the food should be palatable, and calculated to satisfy a healthy taste; but children very soon acquire a fondness for highly flavored substances, such as sweetmeats, tidbits of every sort, and stimulating foods; and if the appetite is gratified, it soon demands continual satisfaction, to the exclusion of those simple and less highly flavored substances which constitute the natural food of children, and which satisfy a healthy and unperverted taste. The aim should be to preserve natural simplicity of taste, unexaggerated by morbid excitation of the bodily appetites.

Quite extended opportunities for observation have convinced us that the common custom of supplying children with liberal quantities of meat, is a practice which tends to the excitement of morbid and unwholesome tendencies, and is very often productive of disease. Nature furnishes, in the easily digestible grains, fruits, and milk, foods which are perfectly adapted to the digestive organs of a child; and if the dietary is restricted to the use of these articles, most of the derangements of the digestive organs to which children are so often subject, could be avoided. The use of spices, pepper, mustard, vinegar, cloves, etc., is wholly uncalled-for by a healthy taste, and may operate in the strongest possible manner to create an artificial craving which demands an excess of food, and produces, at an early age, conditions which ultimately result in dyspepsia and various physical disorders of a serious character.

The habit of eating between meals, so common among little boys, cannot be too strongly condemned. Such irregularities are not the result of a healthy appetite, but of a morbid craving, which frequently arises from a disordered stomach, and which requires attention, but not gratification.

American boys undoubtedly suffer far more than those of any other land from the disregard of these facts. The peasant boy of Italy, Germany, France, or even England, is satisfied with the very simplest, and often the most meager fare. The Scotch boy eats his bowl of *brose*, or oatmeal gruel, with a far keener relish than the American boy finds in the highly seasoned viands, the rich cakes, savory pies, and tempting tidbits which his mother, in her mistaken fondness, prepares for him. The Italian boy finds vastly more satisfaction from his meal of boiled or roasted chestnuts, than the American boy obtains from the rich and savory dishes so common on American tables.

How often do we hear little boys say, when food is offered them, "I don't like this," or, "I can't eat that"! Such remarks are a pretty sure indication that bad habits in eating are already formed, and that such a child may be benefited by going without food until he obtains a relish for wholesome and simple fare.

—Three thousand horses die every week in London, and a great share of these are cut up into small bits, and peddled out to the owners of cats and dogs, to which the meat is fed, though it is estimated that a smaller portion finds its way into the hands of bologna sausage manufacturers.

"Black Vaults" and Cholera.—According to our excellent contemporary, the *Sanitary News*, one of the cities in Spain which suffered most terribly from the cholera, was Sargossa, each house being furnished with two vaults, one for receiving the rain-water from the house, and the other for receiving the sewage. The former is called the white vault and the latter the black vault. These vaults are not made water tight, in fact no artificial attention is required, as the contents are gradually soaked away into the soil. A correspondent of the *News* writes: "I heard of a house where for fifteen years it had not been necessary to empty either of the vaults, so complete and rapid had been the absorption of the liquids. Imagine the condition of the soil on which the city stands, having from the time of Augustus Cæsar received into itself the contents of the black vaults."

How many of these black vaults there are to be found in every unsewaged village it would be difficult to tell. If cholera once obtained a foot-hold in this country, it is probable that thousands of our smaller towns and country villages would suffer as has Sargossa. When in Switzerland a few years ago, we learned of a custom which had facilitated the propagation of cholera even more effectually than the black vault. Each house is provided with a great vault, connected with a compartment familiarly known in the French as "*numero cent.*" This compartment is in more or less instances utilized as a pantry, containing particularly the food supplies for the table. It would hardly be supposed that any danger from customs of this sort exists in this country; but vastly greater danger lies in the close association of wells and black vaults, not only on the same premises, but often within a few feet of each other.

—According to the *Temperance Record*, the use of coffee is rapidly declining in England, there having been a falling off of eight thousand tons in three years.

Beef Tea as a Stimulant.—It is reported that New York saloon-keepers are selling hot beef tea instead of whisky to working men, and report that their trade in this beverage is rapidly increasing. The working men claim that its exhilarating properties are superior to those of whisky in more than one respect. This is certainly a hopeful omen for the temperance cause; but the fact also offers material for serious thought as regards the character of the substance which is recognized as so powerfully stimulating. Liebig, the great German chemist, recognized the stimulating properties of beef tea many years ago, and clearly stated that its value as a food was practically nothing, and that its almost universal use as a means of feeding sick people ought to be discountenanced.

The Effects of Salt-Eating upon the Teeth.—In a discussion of this question before the Odontological Society of New York, Dr. E. Parmley Brown remarked as follows: "I will venture the assertion that the excessive use of common salt is one of the main factors in the destruction of human teeth to-day. I am now engaged in collecting some statistics on this point, from which I hope in time to demonstrate what seems to me to be the fact, that common salt excessively used is a great solvent of the human teeth. If it will injure the human teeth through the chemistry of our systems in some way or other that I will not try to explain to night, why might it not also have the effect of preventing a good development of the teeth when taken into the system in excess? I have lately procured some statistics from the Sandwich Islands, from a gentleman who has been there, covering a period of over forty years, that are very suggestive and interesting. Within that period the teeth of the Sandwich Islanders have decayed rapidly; and since they have begun to decay it has been noticed that the natives are in the habit of biting off great chunks of salt, and eating it with

their food. According to all accounts, the teeth of the Sandwich Islanders were formerly the most free from decay of any people on the face of the earth, if I remember rightly. You will find that people who eat a great deal of salt and a great deal of sugar are often entirely toothless. I know several instances of candy storekeepers where three generations are entirely toothless. People who eat an excessive amount of salt are tempted to eat large quantities of candy, pickles, and vinegar. There seems to be a craving for those substances after the excessive use of salt."

Water-Supply and Cholera.—The experience of Spanish cities during the present epidemic of cholera is a very interesting commentary on the recognized relation between impure water-supply and this formidable malady. According to the London *Lancet*, there are only three Spanish cities which have anything like a pure water-supply. These are Madrid, Barcelona, and Seville. There is, in these cities, a corresponding limitation of the prevalence of cholera, the disease having made little headway in Madrid, scarcely any progress in Barcelona, and has not appeared at all in Seville, which is the only city of the three that has what could be called a perfect water-supply. This city was one of the centers of the old Moorish civilization, and has for more than three hundred years enjoyed the advantages of a pure water-supply, which was given to it by its Moorish rulers during their possession of the country. Last year great improvements were made by an enterprising English company, and the result is that the disease which has devastated whole provinces of Spain and Italy, has passed by this fortunate city.

The inference to be drawn from these facts is clearly this, that any city which wishes to protect itself from the ravages of this dread disease, has only to provide itself with pure water, and its protection will be complete. This fact is further emphasized by the impunity with which the various scientific expeditions visited Egypt and other countries where the disease was prevalent last year. The members of these expeditions simply took care to see that their food and drink was free from contamination, and they did not contract the malady, although they were constantly employed in handling and experimenting with the discharges of cholera patients, and other infected material.

We do not regard it as probable that cholera will ever obtain a very strong foot-hold in this country; but the possibility that it may make us a visit sometime in the near future should lead every city and every householder to look to the water-supply, and take such steps as are needed to secure its purity. This will necessitate, in cities at least, the abandonment of the use of well-water, and the substitution of water brought from sources sufficiently remote from human habitations to make contamination from vaults and other sources of decomposing organic matter of a dangerous character, impossible. It is unquestionably the duty of health authorities in cities to order the filling up of old privy vaults, and to prohibit the making of new ones.

Mind-Cure Prescription for a Cold-Sore.—We quote from a contemporary the following paragraph, which was written by one of the most successful mind physicians:—

"In the case of a cold-sore on the lip, one must separate the natural thought from the spiritual, not necessarily in these words, but in some way to make the distinction marked between the real and the unreal, the free and universal mind and that which is trammeled and entangled in the yoke of bondage. The natural mind will bring the thought of throbbing and beating that inflammation asserts itself with; the cause will come also as cold. The spiritual mind will bring the thought, 'What is there in my

lip to have inflammation?' One must realize there is nothing there but life. All life flows from the infinite fountain of life, is perfect, and not subject to atmospheric changes; therefore the lip cannot have inflammation. One must realize that it cannot exist if not nourished. Now, being a free agent by one's will, he chooses the free, real, perfect mind, and says to the other thought, 'I have no sympathy with you, I do not desire you, you cannot assert yourself to my mind; for I am the recipient of infinite intelligence, and know you are only an appearance, have no reality in you; for if you were real, you would be eternal, and never disappear.' You become separated from it, and mind, which is infinite, controls all things."

Brain Tissue.—The Springfield *Republican* has taken it into its head to ridicule the popular fallacy respecting phosphorus as a brain food after the following fashion:—

There is a party, fat and stout
As any Turk on Bosporus,
Who at our dinner-table sits,
And ne'er his babble intermits,
But prates of mush and wheaten grits
And "mean amount of phosphorus."

He always airs his favorite theme,
Nor cares a penny's toss for us;
But rails at beef with "Pooh!" and "Pish!"
And calls for cod and other fish,
Hoping to gain—his dearest wish—
The "mean amount of phosphorus."

Oh that he'd change his boarding-place!
'Twould surely be no loss for us;
But there's one consolation yet,
His star, ascendant, soon will set;
Sometime he'll die, and then he'll get
His "mean amount of phosphorus."

Dr. Richardson on Vegetarianism.—This eminent medical scientist, whose championship of the temperance cause has added greatly to the facts learned by scientific research, speaks thus concerning vegetarianism, which is growing into prominence as one of the leading scientific questions of the day: "We have not to consider how to avoid living on such a purely animal and natural food as milk; for example, we are not to consider how to learn to live on vegetables which contain more water than the seventy-five per cent present in legs of mutton and similar animal foods.

"We ought to consider the question of utilizing, on a large scale, all vegetables which, in nutrient value, stand above animal products. We have also to learn, as a first truth, that the oftener we go to the vegetable world for our food, the oftener we also go to the first, and, therefore, the cheapest sort of supply. The commonly accepted notion that when we eat animal flesh we are eating food at its prime source, cannot be too speedily dissipated, or too soon replaced by the knowledge that there is no primitive form of food—albuminous, starchy, osseous—in the animal world itself, and that all the processes of catching an inferior animal, of breeding it, rearing it, killing it, dressing it, and selling it, mean no more and no less than entirely additional expenditure throughout for bringing it into what we have been taught to consider an acceptable form of food, the veritable food which the animal itself found, without any such preparation, in the vegetable world.

"With the light of these natural facts filling the national mind, the tendency of all advanced scholars in thrift should unquestionably be to find out plans for feeding all the community, as far as possible, direct from the lap of earth; to endeavor to discover how the fruits of the earth may be immediately utilized as food; and to impress science into our service, so that she, in her laboratories, may prepare the choicest viands, minus the necessity of making a lower animal the living laboratory for the sake of what is just a little higher than cannibal propensities."

—It is reported that a health association has recently been formed in Tokio, Japan, for the purpose of studying the subject, and extending a knowledge, of public and domestic hygiene.

Effects of Tea and Coffee on Digestion. —Prof. W. Roberts, an eminent English physiologist, has been making an extensive series of experiments for the purpose of determining the effects of wine, tea, and coffee on the digestion of foods. He reports his results to the *British Medical Journal* at some length. The following is a brief summary of some of the leading particulars of the conclusions to which he has arrived:—

Tea, even in minute quantities, paralyzes completely the action of the salivary secretion upon the food. Tea also retards stomachal digestion when the infusion amounts to one-fifth of the entire contents of the stomach.

Coffee and cocoa have very little effect upon salivary digestion, but interfere with the digestion of food in the stomach to as great an extent as does tea.

The effect of wine is highly injurious to salivary digestion, and retards digestion in the stomach in a very marked manner.

From this it appears that the popular notion that these much-used beverages aid digestion, is a gross error, and there is no ground for the high esteem in which they are held, except the acquired taste for them. Let every parent consider these facts before allowing the children of the household to acquire a fondness for these deleterious beverages; and when it has been decided that they are unwholesome for the little ones, and not to be permitted for them to use, then let the parents consider whether it is not best that they should set a good example by themselves abstaining from the use of these fascinating but harmful drinks.

Some devotee of the cup that cheers, but not inebriates will ask, What shall we drink? We answer, One who eats proper food in a proper manner, needs to drink very little with the meal; but if some fluid must be taken, let it be a small quantity of water, or, what is better for most persons, milk, either hot or cold. The popular notion that milk is a cause of biliousness, has in our opinion very little foundation. In fact, when milk does not agree with an individual, the difficulty is not that it renders the liver torpid, as is so commonly believed, but that it is not well digested, which is due, not to the inability of the stomach to digest milk, but to its inability to digest the mixture of milk with half a dozen other viands with which this most nutritious and digestible of foods does not harmonize. The difficulty is wholly the fault of the combination. Those who will regard this fact, will have little if any trouble in making milk a staple article of diet. In most cases, milk is digested more easily when taken hot than if eaten cold.

Cigarette Smoking.—An actress of considerable renown recently died in Bellevue Hospital as the result of a burn received a few days previous. While reclining on a bed smoking a cigarette, she fell asleep. The burning cigarette set fire to her clothing, and she was horribly burned before the flame could be extinguished.

Danger in Canned Fruit.—A correspondent of the Brooklyn *Eagle* recently called attention to the danger of using canned fruit in consequence of the employment of chloride of zinc in soldering the cans instead of resin, as formerly employed. Those who buy canned goods should examine the soldered end for indications of resin. If no resin is found, the fruit should be rejected as unsafe for use as food.

—A correspondent writes of having passed a butcher shop heavily draped in mourning, which struck him as being quite appropriate, as he noticed quite a number of quadruped corpses lying about and hanging against the wall.

—French peas, cucumber pickles, and other "green" preserves are colored with sulphate of copper, and are poisonous.

DOMESTIC MEDICINE.

Hot-Water Drinking.—Drinking hot water, which has now become very common, is not so novel a practice as might be imagined. Dr. McLeans, ex-President of Princeton College, says that he has practiced hot-water drinking for more than fifty years, having taken hot water with a little milk instead of tea and coffee since 1829. He says respecting the use of hot water: "If exhausted by speaking in public or by mental effort, my usual resort is to a cup of boiling water, not only because it is a safer means of recruiting my impaired energy than the use of exhilarating drinks of any description, but for the further reason that it is also as effectual as any other, since by its heat and moisture it diffuses a pleasant warmth through the system, often removing the necessity of using a stronger stimulant and all desire for it. Some years ago I happened to mention to a friend, one of the leading physicians of Philadelphia, what was my customary drink, upon which he replied that if one was ailing and knew not what ailed him, he could not do a better thing than sip a cup of boiling water as hot as he could take it. And upon repeating his remark to an eminent surgeon of New York City, he gave me to understand that he was fully of the same mind."

A New Argument for Manual Training.—At a recent educational conference held at Baltimore, one of the papers presented contained a novel argument for manual training, drawn from one phase of the evolutionary theory, which we quote as follows, heartily approving the conclusion, without indorsing the premises: "Even after birth, the growth of the child's intelligence simulates the progress of the human race from the savage condition to that of civilization. It has been shown by Preyer, and others who have studied infant-development, that a faculty which has been acquired by the race at a late stage is late in making its appearance in the child. Now, reading and writing are arts of comparatively recent achievement. Savage man could reap and sow and weave, and build houses long before he could communicate his thoughts to a person at a distance by means of written speech. There is, then, reason to believe that a child's general intelligence would be best trained by making him skillful in many kinds of manual labor before beginning to torture him with letters; and the moral to be derived is that primary instruction should be instruction in manual dexterity, and that reading and writing could be learned with pleasure and with ease by a child who had been fitted for taking them up by the right kind of preparation." The argument is a novel one, and it certainly seems plausible.

Worcestershire Sauce.—"Medicus," writing to a contemporary, expresses our views of this stinging compound of condiments most excellently, and we are glad to quote his remarks as follows: "Worcestershire sauce is receiving from several papers in the country the censure it deserves. This so-called sauce is a delusion and a snare. It is all right for an old toper, who for ages has been cooking the mucous membrane of his fauces, pharynx, œsophagus, and stomach with whisky, brandy, and gin, to stimulate the semi-paralyzed nerves of his alimentary tract with such a decoction; but for one who lives as God intended he should, eating and drinking only those foods which are beneficial rather than detrimental,—why such a one, one who has a proper respect for himself, and especially for his digestive apparatus, should use anything so abominable, is beyond comprehension.

"It is composed, according to the 'Druggist's Circular,' of vinegar, allspice, cloves, black pepper, mustard, ginger, salt, shallots, sugar, tamarinds, sherry, curry powder, and cayenne in certain proportions.

"Mr. W. L. Alden, in 'The Cook,' says that the real design of the 'nobleman of the country' of Worcestershire, who invented the compound, which, under the false name of sauce, has obtained such world-wide notoriety, was to furnish a universal table disinfectant, by the use of which objectionable food might be rendered tolerable. For this purpose Worcestershire sauce is admirably adapted. It extinguishes the native flavor of every object to which it is applied, and reduces all articles of food to a common level of taste. The prudent traveler who carries a bottle of Worcestershire with him can sustain life even in the most barbarous Penn-

sylvania inn. The coarse liver, the dried beefsteak, and the aged mutton, when plentifully sprinkled with Worcestershire, will lose their original taste, and will be indistinguishable from decent articles of food similarly treated with Worcestershire. Regarded as a table disinfectant, Worcestershire sauce is an inestimable blessing to the diner who is compelled to trust his palate and stomach to the mercies of country tavern-keepers. It is only among the ignorant that Worcestershire is mistaken for a true sauce, whereas it should properly rank with carbolic acid and chloride of lime as a powerful and beneficent disinfectant."

Clothing of Children.—The season of the year has arrived when every mother begins to experience a great addition to the trouble of caring for her children, in consequence of the frequent colds which are "caught" or acquired in some other way; and all sorts of cough syrups, balsams, etc., are brought into requisition. Most of these colds can be prevented by proper attention to clothing. The clothing at night should be sufficient, but not enough to produce sweating, and should be carefully adapted to the varying temperature of this season of the year. The day clothing should consist of warm woolen under garments and thick woolen outer clothing, re-enforced by an overcoat on going out-of-doors. Children should not be allowed to run out-of-doors bare-headed, or without proper protection. They should be taught to keep their feet warm and dry, and if their feet become wet by accident, to dry them and change wet shoes and stocking for dry ones. A little attention to these matters will save much serious illness, and the contraction of many chronic ailments of the nose, throat, and lungs

Cool Baths and Pneumonia.—According to the Philadelphia *Medical News*, a writer in the *Journal of Medicine*, of Paris, recommends cold baths for pneumonia. Relative to his experience in this employment, he makes the following assertions:—

1. Cold baths are never injurious in pneumonia, at whatever period they are employed.

2. They diminish the temperature, also the heart's action, lessen the difficulty in breathing, and aid in maintaining the patient's nutrition.

3. The bath should be given to adults every two or three hours.

There is a popular dread of the use of cold water in pneumonia, which is not based on scientific observation. It is employed in the form of cold compresses and ice bags over the affected lung, together with cool sponging, cool compresses over the body, cool packs, etc., with excellent results.

Migraine, or Nervous Headache.—This disorder is usually considered exceedingly difficult to cure, but under hygienic treatment it proves very manageable. Usually the patient is suffering with slow digestion; the bowels are likely to be stopped, tongue coated, and patient's appetite capricious. When an attack is threatened, the patient should take from three to six glasses of hot water every one or two hours, and apply hot sponging to the spine and head, resting quietly in bed until the threatening symptoms disappear.

Ice to the Bowels in Typhoid Fever.—An eminent Philadelphia doctor has just discovered that ice compresses applied to the bowels in typhoid fever, is a most excellent means of reducing temperature, and is frequently successful, when large doses of quinine have no effect. Dr. Bacosta is probably not aware that this method of treatment has been employed by hydropathists in this country, and by regulars as well as water-cure doctors in Germany, for many years.

Advice to Singers.—Clara Louise Kellogg, one of the most noted *prima-donnas* of modern times, is scrupulously careful of her vocal organs, and yet, as she stated to the writer a few years ago, she is not nearly so particular as some. She considers sweets, highly spiced foods, and ice-water as the worst of all things for the throat, stating that ice-water taken just before singing, leaves a soreness of the throat as though a severe cold had been taken.

Ancient Quacks.—A scientific journal has recently discovered that patent medicines are not modern inventions. It seems that the priestesses of Ephesus sold the earth of Lemnos in bowls, to which was fixed a trade-mark. This was about the time of the siege of Troy.

—Every twelfth person in Brazil is inhabited by blood-worms, a species of *filaria*, which people the blood in great numbers, as many as a hundred thousand sometimes being present in a single case. The worm is about three inches in length, and is carried from one person to another by means of mosquitoes.

Question Box.

Goiter.—I. M. H., of Pennsylvania, inquires for a cure of goiter, or enlargement of the neck.

Ans.—There are several varieties of disease causing the enlargement of the neck commonly known as goiter, the most common forms being hypertrophy, or enlargement of the thyroid gland, and cystic degeneration of the gland. The latter form of the disease is sometimes cured by puncture and injection of the cysts. The first-named variety, which is far the most common, is curable only in the early stages of the disease, while the enlargement is still soft. After the gland becomes greatly enlarged, or hard and indurated, no remedy will effect a cure. In the early stages of the disease, we have employed the following measures with success: Alternate hot and cold applications applied morning and night; continued cold applications by means of an ice bag worn over the gland; the application of a strongly interrupted Faradic current, which consists in applying Faradic electricity with a sponge, one pole at the back of the neck, the other over the enlargement, making the current as strong as possible, and interrupting by removing and replacing the sponge every five or ten seconds.

Sore Throat—Hives.—A. G. C., of W. T., describes his symptoms as follows, and desires a prescription:—

Throat red and inflamed; tonsils ulcerated and enlarged; hard, white, cheesy lumps coming from the throat; discharging ears; itching eruption, like hives, attended by distressing burning sensations. Has suffered for more than a year.

Ans.—The patient is evidently suffering with chronic pharyngitis. The cheesy lumps are produced by the hypertrophied follicles of the tonsils. The ear disease is probably the result of the extension of the throat disease to the ears, from the eustachian tubes. The irritation, which is probably chronic urticaria, or nettle-rash, is very likely the result of indigestion or disorder of the liver. It most frequently depends upon this condition.

If the tonsils are much enlarged, they should be removed by treating with the galvano-cautery. The condition may be somewhat improved by the application of astringent remedies by means of a swab. Half a dram of tannin or alum dissolved in an ounce of glycerine, constitutes a very good remedy in these cases. The remedy should be applied morning and night. Gargling hot water in the throat twice a day, using half a pint of water at each time, is also useful. Wet packs should be placed about the throat at night, covered with dry flannel. In the morning the throat should be rubbed vigorously with the hand dipped in cold water, afterward anointing with olive or cocoanut oil. The ears should be cleansed daily, then dried with cotton, and a little powdered boracic acid blown in with a tube. To relieve the hives, avoid condiments of all kinds, and stimulating foods, fats, and articles difficult of digestion. Make the diet simple, chiefly fruits, grains, and milk, and wholesome vegetables. Use meat sparingly, if at all. Keep the bowels regular by the abundant use of fruits. If symptoms of slow digestion are present, apply fomentations over the stomach daily, at night or about the middle of the forenoon, for fifteen or twenty minutes each time. Drink one or two glasses of hot water one hour before each meal, and half an hour before going to bed at night. For immediate relief, sponge the surface with hot salt water, a teaspoonful of salt to the pint of water. The application should be as hot as can be borne. Soda is sometimes more effective than salt in relieving the irritation.

Mouth Breathing.—A mother inquires what can be done to relieve small children from one to three years of age, who are unable to breathe through the nose in consequence of acute catarrh.

Ans.—Cleanse the nostrils by means of a spray from an atomizer, using a solution consisting of an even teaspoonful of common salt or soda to a pint of water. Afterward apply to the nostrils, by means of a bit of cotton wound about a tooth-pick, or with an atomizer giving a fine spray, a solution of tannin, one dram to the pint of water. Tannin and glycerine, half a dram to the ounce, is also useful, and should be applied with cotton in the manner stated. Sponging the face with hot water is a useful means of relieving nasal congestion, and thus removing the obstruction to breathing.

St. Vitus' Dance.—A reader of the journal inquires, What should be done for a child suffering with St. Vitus' dance?

Ans.—St. Vitus' dance usually occurs in children who have a naturally irritable, nervous system. Children of tea-drinking mothers and tobacco-using fathers are particularly prone to this disease. It is often the result of neglect of physical culture, sedentary habits, school cramming, bad diet, and much nervous excitement. In the treatment of cases of this sort, all the causes should of course be removed. The diet should be simple and nutritious. It is not often easy to manage the diet, as children of this class always have fickle appetites and depraved tastes. The child must be made to eat simply grain preparations, milk, and fruit. Fats, candies, pastries, etc., are unwholesome and indigestible articles, and should be avoided. Give the child a tepid sponge bath every morning, afterward rubbing with cocoanut-oil. Apply to the spine daily, fomentations or hot sponging. Keep the bowels open by the use of the enema if necessary. This measure is usually not required if fruit is taken with the daily meals. The child should take an abundance of exercise in the open air. The irregular muscular action

frequently becomes a habit, to overcome which requires daily training and systematic gymnastic exercise. The movements should be regulated by counting or music.

Boiled Water.—A correspondent inquires if water is injured by boiling too much.

Ans.—The only effect of boiling water is to expel the air which it contains, and precipitate or dissolve some of the mineral or organic substances. Lime is less soluble in hot water than in cold. Thus when water is hot, a considerable amount of lime collects inside the vessel. This of course renders water softer. The length of time it boils does not increase the amount of lime precipitated, neither does it in any way affect the water, since the air is driven out before the boiling point is reached. The only objection to boiled water is the flat taste which some dislike, but which one can soon get accustomed to.

How to Cure Mouth Breathing.—A patient inquires: How can the habit of breathing through the mouth be cured?

Ans.—Mouth breathing is not always a habit. It is frequently a necessity, resulting from obstruction of the nostrils, which do not admit sufficient air to the lungs without voluntary effort. During sleep, the voluntary efforts to breathe being naturally suspended, the mouth falls open of itself to enable the lungs to secure the proper quantity of air. In cases of this sort, the proper remedy is cure of the catarrhal disease, which causes obstruction of the nose. In many cases, "hypertrophies," or nasal polypi, are present. These must be removed by the snare, or galvano-cautery, which requires the aid of a specialist. In cases in which the mouth breathing is a habit, it may be overcome by simply obstructing the mouth so as to compel breathing through the nose. This may be readily accomplished by means of a properly constructed bandage, or sort of night-cap with strips connected before or behind the ears. If the lips fall apart, even when the teeth are closed, the bandage should completely cover the mouth, and may be made to fit tightly by means of elastic webbing.

Kidney Disease—Pain in the Back—Boiled Cider.—A subscriber in the Golden State inquires as follows:—

1. Do the following symptoms indicate kidney disease, or liver trouble? and what is the best treatment? Pain and misery in the back, commencing under the short ribs and extending down the spine; sometimes a dull aching across the hips, changing from one side to the other; frequent urination both day and night; urine scanty and highly colored; bowels regular; appetite good; bitter taste in the mouth in the morning; dull headache.

2. Is pain in the back the symptom of chronic congestion of the kidneys?

3. Is sweet cider, boiled down to the consistency of syrup, a better food for children than butter or cane syrup?

Ans.—1. The symptoms enumerated are more nearly indicative of disorder of the liver than of the kidneys, though it is quite probable that some congestion of the kidneys exists, very likely as a secondary result of the imperfect action of the liver. For treatment, we would advise the adoption of a fruit, grain, and milk diet; copious hot-water drinking to the extent of eight to twelve glasses daily; a daily sponge bath, temperature of 80° to 90°; a good sweating bath once a week; and a daily fomentation over the loins and liver.

2. Congestion of the kidneys is sometimes attended by pain in the region of these organs, but pain in the back is by no means a positive symptom of disease of the kidneys, as is popularly supposed. In some of the worst forms of kidney disease, pain is never prominent as a symptom.

3. We do not think there is much to choose between concentrated apple juice and concentrated cane juice. In their relation to the digestive organs, the two are very much alike. Probably boiled cider is a little more difficult of digestion, though much, of course, depends upon the quantity taken. A small amount of butter would be preferable to a large quantity of boiled syrup.

Hæmaturia, or Bloody Urine.—F. O. P., of N. Y., inquires: Is there any hope for one who is bleeding profusely from the kidneys, the discharge sometimes appearing as a dark sediment, at other times as clots?

Ans.—The appearance of blood in the urine does not always indicate hemorrhage from the kidneys. The source of the bleeding may be determined by observing closely the manner in which the blood is mixed with the urine. If diffused uniformly throughout the urine, giving it the appearance of blood, with no clots, the bleeding is from the kidneys. If it appears in clots, the bleeding is from the bladder, or from some of the lower urinary passages. The treatment required depends somewhat upon the source of the hemorrhage. In the case mentioned, the hemorrhage is probably not from the kidneys, but from the bladder, or contiguous parts. The first indication for treatment is entire rest in a horizontal position. The diet must be free from condiments and stimulants of all kinds, and should be restricted to milk, grains, and fruits. An exclusive milk diet is advantageous in some cases. A patient suffering in this way should place himself under the care of a skillful physician.

—Cholera, and all other pestilential diseases, make their first visits to those who use, habitually, stimulating drinks.

SCIENCE IN THE HOUSEHOLD.

CONDUCTED BY MRS. E. E. KELLOGG.

OATMEAL.

Composition (According to Letheby),—

Nitrogenous matter,	12.6
Starch, etc.,	63.8
Fatty matter,	5.6
Mineral matter,	3.0
Water,	15.0

The grain varies somewhat in composition with age and exposure to the air.

Description.—The native country of the plant from which our common varieties of the oat are derived, is unknown. Oats have been found among the remains of the lake-dwellers in Switzerland, and it is probable they were cultivated by the prehistoric inhabitants of Central Europe.

The ancient Greeks and Romans used oats, ranking them next in value to barley, which they esteemed above all other cereals.

Although principally grown as food for horses, the oat, when divested of its husk and broken by a process of milling, is an exceedingly nutritious and valuable article of diet for human beings; and there is probably no food that has increased in general favor more rapidly in the last few years than oatmeal.

The Scotch have long been famed for their large consumption of oatmeal, which forms the staple article of diet for the peasantry, to which fact is generally attributed the fine physique and uniform health for which they, as a race, are particularly noted. It is related that Dr. Johnson, of dictionary fame, who never lost an opportunity to disparage the Scotch, de ned oats as "in Scotland, food for men; in England, food for horses." He was well answered by the indignant Scotchman who replied, "Yes; and where can you find such men as in Scotland, or such horses as in England?"

Oatmeal justly ranks high as an alimentary substance. It contains nearly as large a proportion of nitrogenous elements as wheat; and with the exception of maize, it is richer in fatty matter than any other of the cultivated cereals.

In general structure the oat resembles wheat. The grain is inclosed in a *palea*, or husk, beneath which is the seed composed of layers of cells similar to those of the wheat.

To prepare oats for food, the husk, which is of a wholly in digestible character, must be thoroughly removed. To accomplish this, the grain is first kiln-dried to loosen the husk, and afterward submitted to a process of milling to remove it. Denuded of its integument only, the nutritive part of the grain is termed *groats;* broken or crushed into finer particles it constitutes what is known as *oatmeal.*

Oatmeal varies also in degree of trituration, some kinds being ground much finer than others.

Oatmeal lacks the tenacity of wheaten flour, and cannot, without the addition of some other flour, be made into light bread. It is, however, largely consumed by the inhabitants of Scotland and the North of England in the form of oat-cakes, made by mixing oatmeal with water, and kneading it thoroughly, and rolling it into very thin cakes, which are baked on an iron plate or griddle suspended over a fire.

They are sometimes made with hot, sometimes with cold water, but are best mixed with cold water. Much, however, depends upon the kneading, so much, in fact, that it is said that the common inquiry before the engagement of a domestic servant in Scotland, is whether she is a good kneader of oat-cakes.

The most common use of oatmeal in this country is in the form of mush or porridge. For this the coarser grades of meal are preferable. For most people in health there is no more wholesome article of diet than oatmeal cooked as mush or porridge and eaten with milk. For growing children it is one of the best of foods, containing, as it does, a large proportion of the bone and muscle forming material, while to almost all persons who have become accustomed to its use, it is extremely palatable. The time required for its digestion is somewhat longer than that of wheaten meal prepared in the same manner. It is apt to disagree with some dyspeptics, having a tendency to produce acidity, though it is said to be serviceable as an article of diet in some forms of digestive disorders. The manner of its preparation for the table has very much to do with its digestibility, and wholesomeness. Oatmeal, simply because it is oatmeal, is not an especially meritorious article of diet; indeed, many objectionable dishes may be prepared from this material; one of these, called *brose*, is made by simply stirring oatmeal into some hot liquid, as beef broth, or the water in which some vegetable has been boiled. The result is a coarse, pasty mass of almost raw oatmeal, which would seem to be an extremely indigestible compound. *Brose* and another preparation called *sowens*, or *flummery*, made by macerating the husks of the oats, to which the starchy particles adhere, in water from twenty-four to thirty-six hours, until it ferments, when it is skimmed and boiled down to the consistency of gruel, from popular articles of food among some of the Scotch and Welsh. The latter preparation boiled down still more,

so it will form, when cold, a firm jelly, is called *budrum*.

Perhaps we might have said respecting *brose* that could the participants of such a dish afford the time and patience to follow the rule of England's noted premier, to chew each mouthful of food some thirty-odd times or more before swallowing (substituting "particle" for "mouthful"), the grain might undergo such a preliminary preparation as to render it quite easily digested, since it is claimed by those who have experimented with a "natural diet," that the uncooked grain, when *thoroughly masticated*, is exceedingly palatable, and not difficult of digestion. For ordinary use, however, it would seem far more convenient to do a part of the preliminary work of preparation by means of cooking, though of course this will in no wise do away entirely with a need of mastication. Like all substances containing much starch, it must be well masticated in order to be easily digested, since unless well salivated, the whole process of the digestion of the starch is thrown upon the pancreatic juice. For this reason, oatmeal cooked in some form of a thick mush, is more likely to serve a better purpose than thinner preparations.

General Rules for Preparation.—Oatmeal requires much cooking in order to break its starch cells, and the coarser the meal, the longer it should be allowed to cook. A common fault to be found with oatmeal is that it is served in an underdone state, which makes a coarse, comparatively indigestible dish of what with more lengthy preparation, would be an agreeable and nutritious food. Like all the grains, it is best put into boiling soft water, and allowed to cook continuously and slowly. For mush, it is greatly injured by stirring, and is therefore preferably cooked for this purpose in some form of a double boiler. If it is necessary to use an ordinary kettle for cooking, place it on some part of the range where the contents will only simmer; or a hot brick may be placed under it to keep it from cooking too fast. It can be cooked the day previous, and warmed for use the same as wheat. The length of time required for cooking will depend upon the grade of meal used; but one hour may be considered the *least* approximate time, and a longer time is better.

Oatmeal Mush.—Wet one cup of coarse oatmeal with just water sufficient to moisten it, and pour over it a quart of boiling water. Turn into the inner cup of a double boiler, and boil rapidly, stirring continuously until it sets; then place the cup in the outer boiler, and cook three hours or longer.

If the meal is of a fine grade, less water and less cooking will be required. It is important in making oatmeal mush to measure the material, so that a sufficient quantity may be taken at the outset, as to add meal from time to time will make the mush cook very unevenly, only part of the meal being perfectly boiled.

Oatmeal Porridge.—Stir a cupful of coarse oatmeal into a quart and a half of boiling water (a good way is to reserve a portion of the water to first moisten the oatmeal). Let it boil up vigorously for a half hour, and then cook more gently for an other hour, or more if time will allow.

Oatmeal Blanc-Mange.—Soak a cupful of coarse oatmeal over night in a pint and a half of water. In the morning beat the oatmeal well with a spoon, and afterward pass all the soluble portion through a fine strainer; add a little salt if desired. Place the liquid in the inner cup of a double boiler, and cook for half an hour. Turn into cold cups, cool fifteen or twenty minutes, and serve warm with cream and sugar or dressing of fruit juice.

Mixed Mush.—A cup and a half of crushed wheat, mixed with one-half cup of coarse oatmeal, and cooked the same as oatmeal, forms a mush considered by some preferable to oatmeal alone.

E. E. K.

To Preserve Grapes.—A correspondent in a Southern agricultural paper gives the following method for preserving grapes fresh for several months: Take a close barrel, from which one head has been removed, and place on the bottom a good layer of bran or fine saw-dust. On this put a layer of grapes, and continue filling the barrel with alternate layers of bran or saw-dust and grapes, until it is full. Then press down a good layer of the bran or dust, and put on the head of the barrel tight. Grapes packed in this way will keep a year. When wanted for use, cut off the end of the stalk, and place the bunch upright in water for an hour or so to restore their freshness. This is the way in which Malaga grapes are packed for export.

—An exchange says, "Whitewash for a barn or an outhouse may be made by mixing water-lime with skimmed milk to the proper consistency to put on with a brush. It will adhere to any surface, either rough or smooth, where oil has not been applied."

Literary Notices.

JOHNSTON'S JOURNAL: Published at 9 Murray Street, N. Y. Subscription price, $1.00 a year.

The issue of this journal for October 17 is bright, interesting, and instructive. It contains no fewer than six illustrated articles, all of a timely and informational nature. A vivid description is given of the Harmony Community of Economy, Pa. A biographical notice, with portrait, is given of Mr. William Cramp, the eminent ship-builder; while a fine portrait of Franklin accompanies a terse account of the new profession of electrical engineering. The first directory of New York City, prepared just a hundred years ago, is made the subject of a timely chat. In the way of travel, there is an illustrated description of Lake Como. The miscellaneous articles and the fiction are excellent, and the departments are all eminently readable.

Publisher's Page.

☞ The Sanitarium Training School for Nurses will begin the middle of November, and will continue eight months. Students will be received until December 1st. A few competent, able-bodied persons, who can give good recommendations as to character and ability, will be given an opportunity to meet their expenses in work. For particulars, address, SANITARIUM, Battle Creek, Mich.

☞ The present is the best season of the year for canvassers in either cities, villages, or country districts. Persons who are thoroughly interested in the cause of Hygienic Reform, do well canvassing for GOOD HEALTH. Outfits are sent free to any one who will agree to devote some time to introducing the journal among his friends and neighbors.

☞ The subscription list of this journal has been gradually climbing up during the year; indeed for two years past there has been a steady advance, and at the present time the number of subscribers is greater than at any time during several years past, which the publishers take to be evidence of a growing interest in the subject of hygiene, and the appreciation of GOOD HEALTH as an exponent of this important reform.

☞ Profitable employment can be furnished to several hundred competent persons in canvassing for the various health works issued by the Health Publishing Co. Several of these works have already attained sales which have been rarely equaled, and are growing in popularity. They evidently meet a want which becomes greater, the more it is gratified. It is probable that there has never been a time in the history of the world, when the interest in the subject of health culture has been so intense as now. People are hungry for knowledge on this most practical of subjects, and competent persons are wanted everywhere to carry to the doors of the people, the information which they are thirsting for. Persons who wish to engage in this interesting and humanitarian work, which to those competent affords a handsome income as well as unbounded satisfaction in the good accomplished, should address, for circulars and further information, Health Publishing Co., Battle Creek, Mich.

☞ The popularity of the Sanitarium the present season is quite unparalleled in the history of the institution. The present number is little less than two hundred, and the number arriving daily, exceeds the departures. The many improvements which have been made in the place during the last two years have rendered the Sanitarium one of the most attractive, as well as the largest and most thoroughly equipped, establishments of the kind in the world. The managers do not pretend to cure incurable people here, but have sought to devise methods and afford appliances for health culture superior to those found elsewhere.

☞ Ho! for the Sunny South! is just now the watch-word of thousands of valetudinarians, consumptives, and invalids of all sorts, who are preparing to make their annual migration to some southern clime to escape the cold and rigor of our northern winter While many are undoubtedly benefited by a change of this sort, partly from going away from home, taking more out-door exercise, and finding relief from the care and worry of business, as well as by the avoidance of the extreme cold weather, there are undoubtedly many who really derive no advantage from the change from a climate to which they are accustomed to a new one, even though it may be in some respects less severe. People suffer much less from bad climate, than from bad food, bad air, and bad habits. The mission of this journal is to tell how to keep well, without making an annual pilgrimage, requiring a great outlay of money, and great loss of time. The man who eats and drinks properly, dresses properly, and takes proper care of himself generally, may keep well in almost any climate. Keep your digestion good and the liver active, your skin healthy, and muscles vigorous, and you may defy "climate," and will "never mind the weather."

☞ The January number of GOOD HEALTH, 1886, will contain an article on climate, and the first of a series of articles on clothing.

☞ The managers of the Sanitarium are adding another to the numerous advantages offered for making that institution a winter home. Three of the large porches on the front of the building, and a long, covered veranda connecting them, are to be inclosed in glass, making a continuous veranda nearly 200 feet long, which will give the guests of the house chance for exercise in the sunshine without exposure to the cold.

☞ An electric light company is being formed for the purpose of lighting the city of Battle Creek by electricity, and the managers of the Sanitarium are making arrangements to have the establishment lighted with the famous Edison incandescent light, which is probably the most effective means of illumination ever devised. The incandescent light, as regards both health and safety, is beyond question.

☞ The next number will contain a bright Christmas story by Mrs. Ames, known to our readers under the *nom de plume* of "Eleanor Kirk." The publishers have also arranged for contributions from several practical and interesting writers for the journal during 1886, and expect the next volume to be the best ever published.

☞ If your neighbors eat pork, drink tea and coffee, live in unventilated rooms, and ignorantly violate most of the laws of health, consider whether it is not your duty to make them acquainted with GOOD HEALTH, and other health literature, so as to rescue them from the certain results of their transgression of the laws of their being.

☞ The small-pox epidemic at Montreal still prevails with unmitigated violence. Forty or fifty persons are dying daily, according to latest reports, and the disease is rapidly extending to various parts of the Dominion.

☞ Patients coming from Maine, New Hampshire, Vermont, and other points, the usual route from which is through Canada, may avoid risk of exposure to small-pox, now so prevalent in the vicinity of Montreal, by coming over other routes. We find on inquiry that tickets are obtainable over other routes, which though not quite so near, have the advantage of being perfectly safe. The danger of exposure on board cars is very small indeed, as the authorities are finally thoroughly awakened to the necessity of taking vigorous measures to prevent the extension of the disease. The epidemic has assumed its present proportions in consequence of the ignorance and prejudice of the French population of Montreal.

—There has been quite a revival of interest among the Health and Temperance clubs of this State through the labors of the active secretary of the Association, Mrs. E. S. Lane. The Monterey Club numbers sixty members, and reports five additions at the last meeting. These clubs may be made a means of very great usefulness if properly conducted, and we trust we may soon be able to report a large increase in the number of such organizations in every part of Michigan.