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STOMACHS.

AN eminent zoologist describes an animal as "a stomach with various organs attached." The definition is a very good one, and perhaps applies equally well to some men; but a human being ought to be something more than a stomach with organs attached. The business of the stomach is to supply the organs of the body with the needed material to renovate its tissues and its energies. As soon as the stomach fails to do its duty, the whole body begins to decline; every tissue begins to suffer from starvation; every bodily process flags. The muscles become flabby, the nerves become irritable, the brain becomes confused, and the mental powers languish. The stomach is to the body what the furnace is to the steam-engine. It receives the supplies of material out of which blood, brain, and muscles are formed, and which, through the wonderful chemistry of nature, are elaborated into thoughts, feelings, and actions.

The old German proverb, "As a man eateth, so is he," is an exact statement of a scientific fact. If a man eats gross food, his blood will be gross, his tissues will be gross, his brain will be gross, and he will have gross thoughts, and very likely will commit gross acts. The Concord philosopher says, "The man who lives chiefly upon hog is in danger of becoming pigified." The young lady who lives chiefly upon pancakes and bread and butter, with a liberal supply of mustard, washed down with strong tea or coffee, must be expected to have a temper as acrimonious as her diet. A man whose bill of fare consists chiefly of flesh food must be expected to find himself more nearly related

to the animal in his instincts, than the man who satisfies his palate with milk, fruits, and farinaceous seeds—the primitive diet of the human family. Byron refused to eat flesh because, as he said, "It makes me ferocious." Writing in his journal in 1814, he said "Meat I never touch. . . . The worst is, the Devil always comes with it until I starve him out; I will not be the slave of any appetite." No man knew better than Byron, a man of strong appetite and passions, the influence of diet upon both mind and body. Many have recognized the same truth which he expressed, but comparatively few have shown the same resolution in making a practical application of this truth. The man who wants to make the most of himself will take care that his body is built out of good material—in other words, will use some discretion as regards the sort of stuff he puts into his stomach. The Hebrews could make brick without straw much more successfully than the stomach can make good brains out of strong coffee, Saratoga chips, and fried sausage. The bustling business man sits down to a table in a down town restaurant, calls for a bill of fare, rattles off an order to the waiter, and presently finds himself surrounded with a dozen dishes containing as many varieties of abominable mixtures called "French cookery," which he supposed his stomach will convert into material for brains, with which he will be able to devise sharp schemes for money getting, which will again convert brains into dollars. But the transmutation does not take place according to his calculations. Half an hour after dinner his abdomen swells up like a bass drum, his cranium feels like a cabbage head, his heart pounds away like a fire-

engine, and he runs off to the doctor to get him to feel of his pulse, look into his eyes, and tell him if he isn't going to have a stroke of apoplexy, or if he isn't threatened with softening of the brain from too much mental work, and if he had n't better take a trip to Europe or visit some celebrated mineral spring, with a taste of sea water and a smell of perdition. If the doctor has the good sense and the bluntness of old Dr. Abernethy, he will say to him, "You are a fool and a glutton. Stop stuffing yourself with roast goose, and cranberry sauce, and fricasseed liver, pig's feet, and *pâté de foie gras*, and making a gormand of yourself. Treat your stomach decently, and your brain will be all right."

When one sits at a hotel table and observes what sort of stuff people are trying to make bones, muscles, and brains out of, he is constrained to think that a human stomach must be made of cast-iron, or that there is a day of trouble and retribution coming. If you ask any of those people if they ever suffer with indigestion, they will invariably reply, with indignation in their tones, "Never." Watch the same people after dinner for half an hour, and you will see them gulping up offensive gases out of their stomachs, drinking noxious draughts of alkaline mineral waters at the drug store, or swallowing big doses of a neutralizing cordial, never once thinking that the indigestible stuff which they bolted at the dinner table has anything to do with the horrible state of affairs under their jackets. Some years ago an itinerant clergyman, traveling through a Western state, spent a night with a farmer in comfortable circumstances, and in the morning sat down with the rest around the breakfast table, to prepare for the long horseback journey which lay before him. The host invited him to ask a blessing upon the food about to be eaten. The reverend gentleman glanced over the table, taking a mental inventory of the food prepared for the dozen hungry mouths awaiting it. There were hot biscuits steaming from the oven, semi-transparent with lard, and yellow with saleratus; there were savory mince-pies, rich preserves, pickles green as grass, coffee black as ink, fried pork, fried eggs, fried potatoes, and a generous supply of fried cakes on the sideboard. Pausing a moment after his survey of the indigestible viands, the clergyman said with a solemn voice, "Friends, this breakfast is not

worth a blessing," and concluding that a breakfast not worth a blessing was not worth eating, he went on his journey without it. The farmer doubtless considered the blunt preacher a very ungrateful guest, and it is doubtful whether the lesson was of any practical value to him; but certain it is that a great share of the breakfasts and dinners eaten are not fit to be blessed or swallowed.

Food, to be worth eating, must consist of such material as will properly nourish the body, and in such form as will be easily digested. It is also necessary, for the welfare of the body, that the food should consist of different nutritive elements in proper proportion. A man who undertakes to live upon sugar, or fat, or starch, or albumen, exclusively, will die almost as soon as a man who eats nothing at all, although a mixture containing each of these elements in proper proportion, is capable of sustaining life indefinitely.

Given proper food, properly prepared, one of the first questions which arises is, How much must a person eat to sustain life, and keep himself in good working order? Everybody knows the story of Cornaro, the dissipated Italian, who found himself a wreck at thirty, but by adopting a vegetarian diet consisting of ten ounces per day, was able to prolong his life to a full century, and found himself when an octogenarian more active and vigorous than when a youth of twenty. A Frenchman lived for many years, working hard and preserving good health, on fourteen ounces per day. On the other hand, a Roman emperor ate as many pounds of meat *per diem*, and an Esquimau has been known to eat as much at a single meal. The amount of food required varies with each individual, with weather changes, and with the kind and amount of labor performed. The only proper guide to the quantity of food is a healthy appetite, and when the palate is not tickled with savory comestibles, and the appetite stimulated by irritating condiments, nature will invariably say, "Enough," when a full allowance has been taken, by substituting a sense of satiety for the keen relish of hunger. A person when no longer feeling a real demand for food should stop eating.

As regards the influence of weather and occupation upon eating, we will say, briefly, that we need to consume more food in cold weather than during the warm season; for the simple reason that the most important use for food is to make fuel to keep us warm. In cold weather, the consump-

tion of fuel in our bodies, as well as in our stoves and furnaces, is necessarily greater than in the warm season, and hence we need a larger supply of food. Hard muscular labor, accompanied by active mental occupation, consumes the greatest amount of tissue in a given time, and produces a demand for a larger amount of food than either purely physical or purely mental occupation. The hard mental worker really requires as much food as the muscle worker, but should remember that he can indulge in excess with much less impunity. The woodsman, whose monotonous occupation makes of him practically a mere chopping machine, consumes without apparent harm several pounds daily of coarse and indigestible food; but a surplus of bodily energy enables him to digest what would be absolute poison to a brain worker of sedentary habits, who can take with safety only just so much as his system actually requires, which for the average man probably varies not far from one and one-half pounds of dry food, or its equivalent of other foods.

There is vastly more danger of eating too much than too little. The mother who fears her child may starve to death before morning, if sent to bed without its supper, would undoubtedly find it hard to believe that Dr. Tanner could live forty days without tasting food, a period which has been in other instances of fasting considerably exceeded. The manner of taking food is a matter of quite as great consequence as the quantity eaten. The very best food, hastily bolted, after the fashion of the average American, may be digested less perfectly than food naturally difficult of digestion which has been deliberately and thoroughly masticated. It is reported of Mr. Gladstone that he requires his children to make forty movements of the jaws for each mouthful of meat before swallowing; and if the prime minister himself follows the same rule, this may possibly be one of the secrets of that remarkable strength of mind and body which enable him to do more work at the advanced age of four score years than most of his countrymen are able to do at half that age. The tendency to hasty eating may be greatly lessened by the avoidance of liquids at meals. The free use of drinks at meals is also objectionable, as it dilutes the contents of the stomach to such a degree as to tax those organs, and delay the digestive process. Persons who are troubled with thirst at

meals may avoid the necessity of drinking by taking a glass or two of water an hour or two before the usual time for eating.

The symptoms which result from hasty eating and overeating are very similar. Indeed, the two processes are very likely to be combined, as one who eats too fast is pretty certain to eat too much. The most common sensations after excess, or abuse of the digestive organs in this way, are a sense of fullness at the stomach, and drowsiness after eating, which are pretty certain to be followed an hour or two later by eruptions of gas, with heart-burn or sour stomach, the result of fermentation of the food. After a time, the digestive organs may become so weakened that even a small quantity, though properly eaten, will be very imperfectly digested, and the whole system suffers in consequence. Indigestion is something more than simply an inconvenience. A body which is served with food by a dyspeptic stomach, receives very poor material by which to rebuild its tissues. None of the food is perfectly digested, and hence the quality of all the tissues is deteriorated. Besides this, the formative changes which take place in the stomach and bowels, produce various poisonous substances which are absorbed along with the food, and which poison and irritate the brain and nerves, and produce various disorders and discomforts which are oftentimes attributed to other causes. Even the imperfectly digested food is treated by the system as waste or poisonous material, and instead of being used to repair the wastes of the body, is excreted, or thrown off, by the liver and kidneys, with the waste elements of the system.

The stomach sometimes holds up wonderfully under the heavy burdens laid upon it, and digests a much larger amount of food than is necessary to supply the want of the body. In such cases, the excessive amount of nutriment received is either at once excreted, or accumulates in the tissues, clogging the various organs and interfering with their proper activity. Accumulations of this sort are the chief cause of gout, rheumatism, biliousness, and numerous other disorders which are usually attributed to other causes.

Eating when tired, and engaging in active mental or physical exercise immediately after a hearty meal, is one of the most common sins against the dietetic rectitude of our modern civilization. An old medical writer tells us that a hundred

years ago, it was the custom among the merchants of Edinburgh to take two hours' nooning for dinner in the middle of day, during which time the shops were closed, and all business suspended. It is quite hopeless to attempt a resurrection of this good, old-fashioned custom in these fast times, and the best thing that we can suggest is that no hearty meal should be eaten during the active business hours of the day, unless at least an hour or two can be allowed after the meal has been taken, to give the stomach opportunity to get the digestive process well under way. The plan which our personal experience leads us to prefer is to defer the hearty meal, as did the old Romans, until the latter part of the day,—say four o'clock in the afternoon,—taking if necessary an apple or a bunch of grapes or an orange or two, or some equally simple food at midday, to appease the clamoring of the stomach until it has become accustomed to the lengthened interval between the first and second meals. Two meals a day is in every way preferable to a larger number. The ancient Greeks and Romans took but one meal *per diem*. During the Republican era, the Roman custom was to eat twice a day, breakfast being simply a light repast of fruit and bread. At the present time, the two-meal-a-day plan prevails quite extensively in France and Spain, and especially among the better classes. The inmates of the hospitals in Paris are supplied with but two meals a day. The same is true respecting the soldiers of the French army.—*J. H. Kellogg, M. D., in "Man, the Masterpiece."*

HYGIENE VS. INTEMPERANCE.

[ABSTRACT of an address given by Mrs. E. E. Kellogg, National Superintendent of the Department of Hygiene of the W. C. T. U., at the Normal of Hygiene at Greensboro, N. C.]

The history of all time records no grander, nobler contest than the steady warfare, which, for the last decade, the white-ribboned host, has been waging against the evils and influences of intemperance. The immortal Spartans fought not more valorously than does this army of noble, philanthropic women in their efforts to dethrone King Alcohol. That much has been accomplished, and many a glorious victory won, we proudly note; but there are mighty battles yet to fight and win, and in the coming conflict, we who fight for "God and home and native

land" have need that every vantage ground be taken from the enemy. At this particular time, when the sun of prohibition gives cheering promise of spreading its effulgent rays over our broad land in the not far distant future, we are oftentimes too apt to look upon the liquor traffic as the one only stronghold of the enemy, and its overthrow as the end which, once secured, will insure for us complete victory. But our enemy has many another citadel of strength, and we must sweep a wider circle still, and lay more firmly the foundations of temperance principles, else the generations of women who shall succeed us will be obliged to cope with the same evils that we contend against to-day. Intemperance has many causes, and calls for many remedies. To close the dram-shops, and thus remove temptation from the pathway of mankind is a great thing, a glorious thing, but it seems to me it is but *half* the battle. What if our fellow mortal must still bear through life the torments of craving appetites? What if the youths of future generations have in them a morbidness of taste continually calling for gratification. Appetites cannot be held in abeyance by statutory enactments. We may withhold food from a starving man, but that will neither satisfy nor quench his appetite? We cannot reasonably expect to destroy the use of intoxicating drinks unless we destroy the many conditions that lead to their use. We must cease making drunkards, cease cultivating and fostering the appetite, cease supplying conditions that demand intoxicants, ere we can hope to eradicate the evil. True temperance does not consist alone in refraining from the use of intoxicating drinks, but in a condition of the system so clean and healthful that there is no desire for stimulation, no thirst for drink, but is readily satisfied with a draught of that sparkling beverage which nature provides so abundantly and freely. Such a condition we can attain only through better hygiene and a better and purer heritage. We must raise humanity to a higher standard of physical as well as moral excellence, by cultivating correct physical habits, and making ourselves and those around us more nearly what God designed us to be,—fit temples for the indwelling of his Holy Spirit,—ere we can hope for a successful temperance reform.

The appetite for intoxicants is not a natural one; and if we will but stop to consider and trace the connection between

drunkenness and its various direct and indirect causes, I think we shall find that in the majority of cases the appetite, when not hereditary, has its starting point in the violation of some one of the laws of hygiene.

Perhaps the first step was taken when, having transgressed these very laws till nature rebelled with a penalty of pain and suffering, a glass of wine or a dose of brandy was prescribed as a tonic or an anodyne.

Perhaps it was when the student or the politician, the minister or the professional man, with limited time, and stirred with ambition to outdo his fellows, having already used brain and nerve till weary nature loudly called for rest, had recourse to stimulants to goad his flagging energies to further efforts.

The marvelously delicate machinery of the human body cannot run without wear, but infinite wisdom has so wonderfully adapted means to ends that when the system has done all it is capable of doing with safety, nature admonishes us through a sense of fatigue that rest is needed for repairs. If the warning voice is unheeded, or hushed through the agency of stimulants, the result is a borrowing from the forces reserved for future use, thus incurring a loan to be paid with interest on some other occasion. But the man who is too hurried to-day to take the needed rest, and resorts to stimulants to compel nature to go beyond her own defined limits, will be likely to be too busy to-morrow to meet a double payment, and the temporary loan will become a permanent debt; and the stimulant, the means whereby its payment can be postponed, will be regarded as a necessity. The continual endeavor of mankind in this fast age to thus force nature to adapt herself to their conveniences and tastes, so often in direct violation to her own wise laws, is a most prolific source of intemperance.

Indeed, there are hundreds of points in the path of physical transgression where the drink tempter assails mankind, from feeble infancy, when the wailing cries are hushed with doses of opiates and soothing syrups, the use of which, no doubt, has a tendency to awaken a love for narcotics in after years, to the school girls and boys, whose ambitious parents and thoughtless teachers allow their crammed brains to outgrow their feeble bodies, till, when on the threshold of manhood and womanhood, they stand tottering on the brink of invalidism, with shattered minds, and

bodies too weak to resist temptation when it comes, and ready to fall an easy prey to the tempter. There are thousands of young men and women of this class who are only prevented from becoming intemperate by the accident of never having tasted alcohol, or of never having been surrounded by influences that ensnare. Offspring of the nervous susceptibility of the present state of society, stimulated with improper nourishment, and largely deprived of the wholesome advantages of vigorous exercise, have their muscles weak and flabby, their nutrition poorly maintained, while their nervous systems are abnormally and excessively developed, thus furnishing just the physical conditions likely to succumb at the first approach of the enemy.

All violations of Hygeia's laws are in some measure obstacles to temperance. Did it never occur to you that the depressing physical condition resulting from a night's sleep in a close, ill-ventilated room might be an incentive for indulgence in a morning potion to offset the dullness and languor thus occasioned? Or that the poor bread, leathery steak, and other indigestible, badly-cooked viands that so often grace, or rather disgrace, our daily boards, are directly calculated to produce such physical disturbances as will beget a morbid craving for something stupefying to drown the pain and ill feeling thus created?

To be sure, in all such cases, much must be looked for and hoped for through will power and a love of virtue; but *all* diseased conditions lessen in a greater or less degree the power of reason and self-control, and thus increase the susceptibility to yield to temptation. It seems little wonder to me that the morbid, melancholy dyspeptic, with his weak mind and lack of self-control, the results of a diseased body, falls an easy prey to temptation; nor does it appear strange that the nerve-worn, pain-racked, neuralgic invalid has too little will power to resist the tempter that offers temporary relief in a stimulant or narcotic. We are so human that we are apt to avail ourselves of anything to relieve pain and suffering.

The extension of intemperance among women is fearfully increasing. Last year out of 29,000 cases of drunkenness brought before the magistrates of London, 13,000 were women. The report of the Board of Corrections and Charities for New York, a short time since announced the astounding fact that there had been arrested for

drunkenness in that city, during the year, more women than men. Various reasons have been assigned for this terrible augmentation of the drink habit among women; but it seems to me a most prominent cause lies in the fact that so large a proportion of the women of to-day are feeble, nervous, or wholly invalid. Worn with their domestic duties, the strain of social dissipation, or other fatigue, and, being desirous of keeping up for some special occasion where pleasure or necessity demands their presence, with their bodies in a condition of neurasthenia or nerve fatigue, they crave and partake of a stimulant to support their waning strength, which ought rather to be replenished by proper rest and well digested food. It may not be a pure stimulant; it is quite as likely to be some preparation containing only a certain percentage of alcohol. It is a fact that thousands of bottles of some form of popular bitters, as Vinegar Bitters, Hostetter's Stomach Bitters, or even the so-called Temperance Bitters, all of which contain alcohol in no small quantity, are consumed for this purpose. Others still partake of various tinctures and tonics and nervines largely composed of the same destroying element. In matters of this kind, one step almost unconsciously leads to another; and the peculiar satisfaction with which a tired, unstrung nervous system receives the stimulation, almost invariably leads to its further use, and, when the system no longer responds to its power, to the use of something still stronger; while the oftener it is relied upon, the more frequently it is required.

A person with sound mental and physical health finds no craving for stimulants, and is not likely to become a drunkard; and it is only through the exemplification of the principles of true hygiene, which is the preservation of health in its broadest sense, physical, mental, and moral, that we can hope for sound minds and sound bodies either for this or the next generation.

Were the principles of health studied and practiced, there would be little need of resorting to those mediums through which the drink tempter so often enters our homes. We should then understand that sickness and suffering are more frequently than otherwise the result of inattention to those laws which a wise and beneficent Creator has laid down for the maintenance of health; we should then know that carelessness, neglect, and ex-

posure deliberately invite disease and death; that foul air breeds headache and fevers; that neuralgia, the bane of so many lives, is but the cry of tired, impoverished nerves for rest and better food. We should perhaps realize that it is no less suicidal to cut life short by a series of violations of the laws and conditions upon which that life depends, than to destroy it by one single, deliberate act. There is no duty which we owe to ourselves, our families, and our heavenly Father, more surely than that of preserving, as far as lies within our power, the health whereby it is possible for us to make the most of the talents God has given us. The voice of the apostle Paul, sounding down through the ages, says, "Know ye not that your body is the temple of the Holy Ghost, which ye have of God and ye are not your own?" We are under obligations to our Creator to care for these earthly temples and fit them for use in his service, and we have no right to cripple or abbreviate their usefulness in any way.

The field of hygiene is a broad one; it includes a knowledge of the functions and proper care of the body, treats of foods and their preparation, of clothing, exercise, prevention of disease, personal habits, and of everything that will assist us to glorify God with our bodies, those masterpieces of creative power so wonderfully made in his own divine image; and there is not a branch of the whole subject but bears the closest relation to the temperance reform.

Cleanliness is one of the first principles of hygiene. It is no new idea that filth and drunkenness go hand in hand; we should scarce expect to find clean hearts without clean hands, or a pure mind in a filthy body. Mr. Edwin Chadwick, an eminent English gentleman, in writing of the causes of drunkenness in London says, "I have found that, to a large extent, the habits of drunkenness among the London poor, are due to the conditions of filth in which they are kept by default of the public service." Is it to be doubted that this may be one of the gigantic causes of this wide-spread evil elsewhere, when we think of the wretchedness and squalor in which many of the inhabitants of tenements in the crowded portions of our large cities are forced to dwell?

Unhealthful clothing, too, helps swell the list of aids to the great evil, inasmuch as it is often the prime factor in bringing women into that enfeebled state of health where stimulants present a tempting

supplement to their waning strength.

But among all the branches of hygiene, there is, perhaps, none that bears a closer relation to the temperance question than the subject of foods. It is coming to be a well recognized fact that the appetite for strong drink is often created at home, both through stimulating foods and an impoverished dietary. It is a common observation that persons addicted to the use of strong drinks are, as a rule, fond of stimulating and highly seasoned foods; and although the converse is not always true, it is apparent to every thoughtful person that a diet of this character, which is in a high degree irritating to the stomach, institutes the conditions necessary for the acquirement of the habit of using intoxicating liquors. The false appetite aroused by the use of food that burns and stings, is likely to crave something less insipid than pure cold water to keep up the fever the food has excited. The fact that stimulating foods, like stimulating drinks, need continual increase in quantity or their effect becomes diminished, is sufficient to condemn them and their use; and unquestionably renders them a strong auxiliary to the use of intoxicants.

A recent writer in the *Journal of Inebriety* goes still farther, and asserts that parents may transmit to their children a tendency to demand stimulation, just as surely from the eating of stimulating foods as by drinking stimulating drinks. A stimulant is a substance containing in its constituent elements properties which, taken into the stomach, have the effect to unduly excite the nervous system. Nature in her great organic processes cares nothing about the particular substance whereby the whole system is thus excited, nor the medium through which it is introduced. It is sufficient that through drink, food, medicine, or some other means, the excitement is created and constantly kept up.

Many a case of dissipation and drunkenness undoubtedly has its origin in an impoverished dietary. Does it seem unreasonable to say that the doting mother who rears her children largely on a diet composed of luxuries and delicacies which lack the proper bone, nerve, and muscle-forming material, is fostering a morbidness of appetite and a condition of the system that will crave a stimulant by and by? Our strength is furnished by the food we eat, and whatever impairs natural strength creates a demand for artificial strength.

The constant gratification of the palate, too, is a dangerous shoal upon which many a fair bark has been wrecked; for the quantity as well as the quality of food may become a stumbling-block. Over-indulgence of a natural appetite soon leads to the creation and indulgence of wholly unnatural desires. None need be told that gluttony and intemperance are twin evils and go hand in hand together, but it may not have occurred to the mother who pampers her child's appetite with tidbits and dainties at all hours of the day, in season and out of season, that she is cultivating a love of appetite which will bring her sorrow in years to come. Does she think it is not love of appetite, let her put the child to a test; if it is hunger, any food, even a crust of bread, will be accepted and eagerly partaken. Far more probable than otherwise, she will find it is not a need of food, but a desire for "something good." Many a well-meaning mother, who would as soon think of giving her child a scorpion as a taste of wine, may thus, in ignorance of the laws which govern its being, foster and develop a dangerous love of appetite, which gratified in one direction, will be hard to restrain in others. Verily, the wives and mothers of our land are responsible for much of the ruin wrought in their own households. This may be a startling assertion, but if so, it is because we have not yet studied the subject in all its breadth and depth.

In its broadest sense, true temperance and hygiene are synonymous terms; and could we conceive of a race of beings who were so sensible as to recognize and follow the laws of health in all particulars, we should find them dwelling in that Arcadia where rum and its fiends never enter, where prohibition is not needed, where brotherly love and sisterly charity prevail. And this condition of things would be permanent; for the "habits of ancestors would form the heritage of posterity."

—Large armies have always suffered more from a deficient supply of proper food than from a deficient supply of medicines; and General Scott used to say that "beans have killed more than bullets."

—Light gives a bronzed, or "tan" color to the skin; but where it uproots the lily, it plants the rose.

MENTAL HYGIENE.

BY DR. W. E. FORD.

CONCLUDED.

FAILURE, complete or in part, to control the emotions, must suggest to us that our bodies are not right, that the brain is in some way being interfered with in its action. In this case, having set our livers in order, and having coaxed the digestion back to duty, and having secured sleep and food, if we then fail to maintain our control, after an honest effort, we may seriously apprehend the approach of disease.

One man may have a more excitable temper than another, may be generally more emotional, but if he cannot (mind, I do not say will not) control himself,—if he is at the mercy of his emotions,—then he is either imbecile, delirious, or crazy. He ought to be properly cared for, either as an imbecile who does not know enough, or as a sick man who cannot exercise the powers God gave him.

Narcotics, which disturb the action of the brain, and stimulants, which pervert its action, are potent causes, not only of bodily disease, but also, through their direct effect on the brain, of abnormal sensations and feelings, and then of excited emotions.

A friend of mine, the embodiment of goodness, became a dyspeptic, and still he would dine out every Sunday afternoon at the house of a friend, the result being that every Monday he had to be avoided; for his temper bore an exact ratio to his digestion.

I am often besought to repair frail bodies with the remark, "I am getting so cross no one can live with me." All this goes to show that excited, uncontrolled emotions mean bad hygienic conditions, and it is our duty to look sharp that the body is in perfect health, and then to pay proper attention to the acquirement of a habit of self-control. Persons who are not trained to this habit in youth suffer incalculably because, when young, they are unstable, unmindful of other's feelings, and are therefore troublesome and are avoided; while later in life, unless through the blessing of some bitter experience they are made to feel the necessity of training themselves, they fail to attain the places their other mental faculties entitle them to.

A curious law regarding the emotions is this: They have a regular period of rise, of climax, and of subsidence. At the climax our volition and will seem to be in abeyance; hence our success in preventing

this disaster must largely depend upon our alertness in putting on the brakes early. We may justly be blamed if we fail to do this.

Of this question of the emotions there is no difficulty in making a practical application to our needs as a civilized race in respect to our health.

I have emphasized the dependency of the mind upon a healthy brain, a generally sound body; but I am sure we may, with stronger emphasis, declare that the body has an equal dependency upon the mind.

Take the commonest examples of the result of mental energy upon physical power and endurance. The determination to succeed, or the fear of punishment, will compel the most ordinary body to feats of strength that no one supposed possible. The tender love of the mother stimulates her will to endure fatigue, loss of sleep, and pain that would seem incredible.

Or take examples of the direct effect of the emotions upon bodily functions. How does a great mental shock or sudden fear blanch the face, and cause the perspiration to ooze from every pore, and even cause the blood to recede from the brain till we faint into unconsciousness! How do the tears flow at a pathetic sight or tale, or how does mere nervousness affect the kidneys! How does worry or almost any mental emotion interfere with the digestion, and if persisted in, induce the habit of dyspepsia! So, also, the thought of a good dinner makes the hungry boy's mouth water, and the thought of her lover sends a glow of warmth to the cheek of the maiden. It is not difficult to so concentrate your thoughts upon an object that you will be wholly unconscious of considerable muscular effort, as in table-turning tricks and in planchette. You may imagine you are about to suffer pain in a given member, and think of it till pain actually comes. Very few medical students go through their course of study without experiencing the symptoms of the disease they read about. Every physician expects to examine the heart of his medical student, and sometimes to find it irregular in its beat and actually giving symptoms of disease, because the attention has been so long fixed upon this organ. Expectant attention may so obliterate, not only our special senses, but also our volition, that we become automatic, and subject to another's command, as is seen in mesmerism. Grief, anxiety, fear, and even hate, not only transform our coun-

tenances and change our demeanor, but also interfere with bodily function so as to prevent nutrition and induce disease.

Predominating intellectual work and continued nervous excitement so alter bodily conditions as even to change the type of a race, and modify the diseases it is subject to. It has been observed by physicians for years past, that many new and some hitherto rare diseases of the nervous system have become very common, and that the type of many of the common disorders of the body has materially changed, so that diseases that were known by our forefathers and accurately described by them, have a totally different aspect as to symptoms, cause, and requirements in the matter of management. The old saying, "Feed a cold and starve a fever," is a fair indication of the practice common in earlier times of treating people with fevers and inflammations, by a low diet and generally depleting management, a course which to-day would kill nine patients out of ten. We get but slightly better results in the treatment of the commoner affections of the body, such as fevers, inflammations, and consumption, than did our forefathers with all their crude ideas, and with all their accumulated knowledge and scientific attainments. The reason for this is found in the changed conditions of the human body brought about by an overdeveloped and preponderating nervous organization.

The many inventions which man has sought out, the ingenious and marvelous devices which almost annihilate space, tend to develop, not particularly his body, which becomes ever less vigorous under artificial conditions, but the brain; and the nerves are kept in such a state of tension that but slight bodily disturbances cause mental and nervous phenomena unheard of in olden times.

The cause of much of the formation, decay, and nervous exhaustion, is in the many inventions of man whereby he keeps his nervous system in a perpetual state of tension, and robs it of necessary repose. Nature seems to exact time for rest and for repair of wasted energy after mental work, as well as after bodily labor. I do not refer to sleep alone, but to a change of occupation and interest which shall bring into play a new set of faculties.

The laborer rests while he reads or studies; the banker rests and keeps his mental powers at their best by devoting certain hours to literature or to science; while the preacher does more effective

work if he mingles in the practical affairs of life with business men. The better class of public entertainments has its place, not only as a matter of education, but as a means of breaking in upon minds that are kept in a single channel of thought until the brain is weary from over-tension. Indeed, the whole subject of amusements comes in here for consideration, and I am confident if more attention could be paid to it, there would be far less of what is now known as the new disease, American nervousness.

It is a singular fact that country doctors, as a class, outlive every other class of men. And yet no life is so exciting, so full of peril, of anxiety, and responsibility, and upon which the demands are so exacting, except, perhaps, that of the soldier in time of war. He meets, single-handed and alone, the enemy; he calculates his chances of success or failure with the feeling of responsibility which can only be felt where human life is at stake. He is daily confronted by emergencies which call for his best efforts, and for all his steadiness of nerve and coolness of judgment. He knows that sometimes the disease is fatal, and that he will be blamed, even though he has done his full duty, and that often his best achievements will not be appreciated.

What, then, is the explanation of this well-known immunity from contagion and his long life? It is that he combines bodily exercise with mental work, that he is much in the open air, and that he finds relief and relaxation in considering the lesser and insignificant ailments, while carrying the responsibility of graver conditions, and that thus there is relaxation of the mental tension.

Many a useful life is hastened to premature ending by the constantly overstrained and exhausted condition of nerve force caused by continuous weeks of business with hasty meals, by telegrams and telephones that interrupt hours that ought to be set aside for repose, the needless noises of the city, and by nights of imperfect sleep, often disturbed by noisy brawlers and hideous sounds. How much resisting power can there be in men living under such conditions when an epidemic comes, and there are the germs of cholera or malaria in the air they breathe?

We know that perfectly healthy tissues and rich blood do not furnish the best conditions for the growth and reproduction of disease germs, even in life, if the germs lodge within the body. The blood,

being a vitalized fluid, has the power of appropriating its own nutrition, and of throwing off waste and deleterious matter. If, however, from any nerve enervation, caused by fear, by anxiety, or by exhaustion, the secretions are perverted and unhealthy, and the membranes relaxed, then the lodgment of the germ of pestilence is followed by the rapid development of disease. A well-poised nervous system is the best security against dyspepsia. Abundant and healthy gastric juice is never secreted during great nervous strain or emotional excitement. Both Koch and Klein have lately shown that even the comma bacillus, the infectious element of cholera, cannot live in perfectly healthy gastric juice. If this is true concerning the much-dreaded germ of cholera, it is certainly true of less noxious germs. In a time of prevailing sickness of any kind, but especially in epidemics dependent upon disease germs, the timid, the nervously exhausted and overtaxed, fall first, while men with healthy digestions and stable nerves go about with comparative impunity. Despite all our recently acquired knowledge of spores in the air, fungi, bacilli, and other microscopic organisms in the water we drink and the food we eat, it is still true that some of us continue to live, though we cannot escape their contact, and the explanation is that we have the nervous energy to supply our tissues with the power of resistance.

Obviously, then, the preparation we should make to resist an epidemic such as cholera, is not only proper sanitary arrangements, but also, and I may say chiefly, that attention to mental hygiene which alone can secure immunity. It is a significant fact that nearly all forms of mental disturbance, and even mental trouble, are accompanied by symptoms of dyspepsia, and the sufferers attribute their nervousness to bad digestion oftener than to all other causes. The truth is, the indigestion is the result, not the cause; and if these persons leave their cares, their anxieties, and all the harassments of civilization, and go into the woods and camp out, they will be able in less than a week to eat with zest, and to digest without trouble almost anything at hand.—*American Journal of Insanity.*

—It is no proof because a man grows fat, and his face becomes red under the use of stimulants, that he is improving in health.

DIET IN RELATION TO AGE AND ACTIVITY.

BY SIR HENRY THOMPSON.

CONTINUED.

WE are thus led to the next important consideration, namely, that although broad rules or principles of diet may be enunciated as applicable to different classes of people in general, no accurate adaptation to the individual is possible without a knowledge of his daily habits of life, as well as, to some extent, his personal peculiarities. No man, for example, can tell another what he can or ought to eat, without knowing what are the habits of life and work—mental and bodily—of the person to be advised; yet notwithstanding this, no kind of counsel is more frequently tendered in common conversation by one stranger with another, than that which concerns the choice of food and drink. The adviser feels himself warranted by the experience that some particular combination of nourishment suits his own stomach, to infer without hesitation that this dish will be therefore acceptable to the stomachs of all his neighbors. Surely the intelligence of such a man is as slender as his audacity and presumption are large. It would not be more preposterous if, having with infinite pains obtained a last representing precisely the size and the peculiarities in form of his own foot, he forthwith solemnly adjured all other persons to adopt boots made on that model and no other! besides there is probably more difference between stomachs and their needs among different individuals, than among the inferior extremities referred to for the purpose of illustration. Thus, in regard to expenditure of food, how great is the difference between that of a man who spends ten or twelve hours of the day at the work of a navvy, as an agricultural laborer in harvest-time, or in draining or trenching land, or as a sawyer, a railway porter, or a brick-layer's laborer, or, let me add, that of an ardent sportsman, as compared with the expenditure of a clerk who is seated at the desk, of individuals engaged in literary and artistic pursuits, demanding a life mostly sedentary and spent in-doors, with no exercise but that which such persons voluntarily take as a homage to hygienic duty, and for a short period borrowed at some cost from engagements which claim most of their time and nearly all their energies.

While the manual laborers rarely consume more food than they expend, and are, if not injured by drink or by undue expos-

ure to the weather, mostly hale and hearty in consequence, the latter are often martyrs to continued minor ailments, which gradually increase, and make work difficult, and life dreary. Few people will believe how easy it is, in most instances, to meet the difficulty by adopting appropriate food, and that such brain-workers can really enjoy a fair degree of health and comfort by living on light food, which does not require much force to digest, or much muscular activity to assimilate,—a diet, moreover, which is important to some of these from another point of view, the financial one, inasmuch as it is at least less costly by one-half than the conventional meals, which habit or custom prescribes alike to large classes of men in varied conditions of life. But there is another and more important economic gain yet to be named, as realizable through the use of a light and simple dietary. It is manifested by the fact that a greater expenditure of nerve power is demanded for the digestion of heavy meat meals than for the lighter repasts which are suitable to the sedentary, from which fact it results, of course, that this precious power is reserved for more useful and more delightful pursuits than that of mere digestion, especially when this is none too well performed.

But those who have little time for exercise, and are compelled to live chiefly within doors, must endeavor to secure, or should have secured for them, as far as possible, by employers, by way of compensation, a regular supply of fresh air without draughts, an atmosphere as free from dust and other impurities as can be obtained, with a good supply of light, and some artificial warmth when needed. These necessities granted, cereal foods, such as well-made bread in variety, and vegetable produce, including fruits, should form a great part of the diet consumed, with a fair addition of eggs and milk if no meat is taken, and little of other animal food than fish. On such a dietary, and without alcoholic stimulants, thousands of such workers as I have briefly indicated may enjoy, with very little exercise, far better health and more strength than at present they experience on meat and heavy puddings, beer, baker's bread, and cheese. Of course there are workers who belong to neither of the two extreme classes indicated, and whose habits cannot be described as sedentary, but who occupy a middle place between the two. For such, some corresponding modification of the di-

etary is naturally appropriate. But it is a vulgar error to regard meat in any form as necessary to life; if for any it is necessary, it is for the hard-working out-door laborers above referred to, and for these a certain proportion is no doubt desirable. Animal flesh is useful also as a concentrated form of nutriment, valuable for its portability and for the small space it occupies in the stomach, being in certain circumstances unrivaled. Like every other description of food, it is highly useful in its place, but is by no means necessary for a large proportion of the population. To many it has become partially desirable only by the force of habit, and because their digestive organs have thus been trained to deal with it, and at first resent a change. But this being gradually made, adaptation takes place, and the individual who has consumed two or three meat meals daily with some little discomfort, chiefly from being often indisposed to make active exertions, becomes, after sufficient time has elapsed, stronger, lighter, and happier, as well as better tempered, and manifestly healthier, on the more delicate dietary sketched. People in general have very inadequate ideas of the great power of habit alone in forming what they believe to be innate personal peculiarities, or in creating conditions which are apparently part of a constitutional necessity—laws of their nature, and essential to their existence. Many of these peculiarities are solely due to habit, that is, to long continuance in a routine of action, adopted, it may be, without motive or design; and people are apt to forget that if a routine of a precisely opposite character had been adopted, precisely opposite conditions would have been established, and opposite peculiarities would have become dominant, as their contraries are now. Alterations in the dietary, especially of elderly persons, should be made gradually and with caution. This condition fulfilled, a considerable change may be effected with satisfactory result, when circumstances render it necessary. To revert once more to the question of flesh-eating: It should be remarked that it appears to be by no means a natural taste with the young. Few children like that part of the meal which consists of meat, but prefer the pudding, the fruit, and the vegetables, if well dressed, which unhappily is not often the case. Many children manifest great repugnance to meat at first, and are coaxed, and even scolded, by anxious mothers until the habit of eating it is

acquired. Adopting the insular creed, which regards beef and mutton as necessary to health and strength, the mother often suffers from groundless forebodings about the future of a child who rejects flesh, and manifests what is regarded an unfortunate partiality for bread and butter and pudding. Nevertheless I am satisfied if the children followed their own instinct in that matter, the result would be a gain in more ways than one. Certainly if meat did not appear in the nursery until the children sent for it, it would be rarely seen there, and they would, as a rule, thrive better on milk and eggs, with the varied produce of the vegetable kingdom.

A brief allusion must be made to the well-known and obvious fact that the surrounding temperature influences the demand for food, which, therefore, should be determined as regards quantity or kind, according to the climate inhabited, or the season of the year as it affects each climate. In hot weather the dietary should be lighter, in the understood sense of the term, than in cold weather. The sultry period of our summer, although comparatively slight and of short duration, is nevertheless felt by some persons to be extremely oppressive; but this is mainly due to the practice of eating much animal food or fatty matters, conjoined as it often is with the habit of drinking freely of fluids containing a small quantity of alcohol. Living on cereals, vegetables, and fruit, with some proportion of fish, and abstaining from alcoholic drinks, the same person would probably enjoy the high temperature, and be free from the thirst which is the natural result of consuming needlessly substantial and heating food.—*Nineteenth Century*.

TO BE CONTINUED.

CONSUMPTION IN CATTLE.*

CONCLUDED.

REASONS for suspecting that tuberculosis of the bovine species may be transmitted to man have been suggested from time to time, but especially since the demonstration of the infectious origin of tuberculosis by Villemin in 1865. The first ground of our suspicion or alarm is that tubercle, or, as it is called, pearl-disease or consumption, is quite common in the bovine species of animals to which we trust so

implicitly—one might almost say blindly—for a large part of our food; and as the production of tuberculosis is shown, by the recent discovery of Koch, to be dependent upon the presence of distinctive bacilli, which bacilli are found to exist in abundance in the pearl-nodules, as they appear in the pearly distemper of bovine animals, the identification of tuberculosis with the pearl-disease is thus clearly established. How prevalent the disease is among the cattle of Tennessee cannot at this time be stated with any approach to accuracy, as after an extensive inquiry among the dairymen and farmers in different localities throughout the State, we have failed to elicit any information which would justify our attempting even an approximation.

"Those who know nothing of tuberculosis," says a distinguished writer upon veterinary medicine, "may question its claim to a place among what may be called the four bovine scourges; viz., pleuro-pneumonia, eczema epizootica (foot-and-mouth disease), cattle-plague (rinderpest), and tuberculosis (pearl-disease, or consumption); but, as will be seen on studying it, it is more insidious (and equally deadly) to the stock owner than either of the other three diseases."

Tuberculosis is an inherited and chronic disease which may be present for years in the body of an animal, and give rise to no symptoms. The distinctive formations of the serous membranes,—the pearl-nodules of the disease,—we are informed, "are sometimes found in animals that have been slaughtered in perfect condition." But the disease in its worst form, or so far advanced as to give rise to signs and symptoms during life, "is mostly met with in milch cows, and more especially in old cows."

"The cow-houses," it is stated, "in or near large towns, contained the largest proportion of diseased animals suffering from tuberculosis." The close confinement, the artificial food, the want of pure air, pure water, and sunlight to which they are here subjected, all tend to develop the disease. The cows are milked as long as it is profitable to milk them, and then they are sold, out of the herd, probably, to the butchers.

Prof. Thomas Walley, of Edinburgh, says: "The breed of animals which, in my experience, are most subject to tubercle, are Alderneys, Guernseys (the latter in a much less degree, however, than the former), and Short-horns among home

* A paper prepared by J. D. Plunket, M. D., of Nashville, Tenn., member of the State Board of Health and its committee on this subject, here quoted from the second annual report of the Tennessee State Board of Health.

cattle; and among foreign cattle, the Danish. It must not, however, be assumed from this remark that all Short-horns are equally predisposed; it is only in particular districts and with particular strains that this holds good. Neither would I have it assumed that all pure and highly-cultured strains are contaminated; but I do, with confidence, assert this, that quite half, if not more than half, of the well-known strains are tainted with the leprosy of scrofula. With regard to the majority of our pure breeds I can only speak positively of those with which I am practically acquainted. In Highland cattle I have never seen tubercle, though it is very possible that those who have opportunities of seeing autopsies of old cows may have done so. In some districts, Herefords are peculiarly exempt from the disease; while in others, as in some parts of North Wales, I have seen scrofula frequently developed. The old smoky-faced Montgomeryshire cattle, few though they were, I seldom saw affected during my residence among them, and the same remark holds good with reference to the old Staffordshire Long-horns. The Ayrshires in certain districts are somewhat prone to tubercle, while in others they are free from it; but under the influence of change of climate, they become particularly predisposed. The polled Aberdeenshires seem to be particularly exempt; at least, I have never seen tubercle in them, and I have it from Mr. McCombie, that he has never seen it in any cattle of the polled breed, however closely bred."

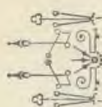
Virchow places the average of the disease to be found in the cattle of Prussia at from fifteen to twenty per cent, but the amount of disease is generally put at a higher figure than that. Without adopting the most alarming estimate of the prevalence of the pearl-disease, or consumption, in the bovine species, there need be no hesitation in concluding that the milk of cows in a more or less advanced state of the tubercular disease, is constantly being consumed by infants and adults; that, in fact, the species of domestic animals which is so much in our confidence that we can even drink of one of its secretions and eat of its flesh, and sometimes even of its viscera, is a species that is widely tainted with tubercular disease. That alone is fact enough to cause uneasiness. Add to that the sort of evidence that has been obtained by experiments on animals, and we seem to have the best grounds for believing that tuber-

cle may come to the human species from the cow. Some pathologists have proceeded by inoculating the tuberculous matter from the cow under the skin of the rabbit, or other animal, or by injecting it into their veins; while others have experimented by feeding certain of the common domestic animals with the milk of tuberculous cows, or with the actual tubercle-nodules. If all the experiments have not succeeded, a sufficient number of them have, to prove that animals may be made tuberculous, either by inoculation with tuberculous matter from the cow, or by feeding with the tuberculous substance, and even with the milk of the diseased animal.

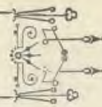
That tuberculosis, as it exists in cattle, says Dr. Cornelius B. Fox, of South Essex, "can be conveyed to calves, rabbits, guinea-pigs, etc., by the milk of an animal suffering from the disease, has been proven over and over again by Chaureau, Klebs, Gerlach, Leisering, Zurn, Bollinger and others." Klebs asserts that when milk has been deprived of its solid particles, the tubercular virus is still found in the fluid portion, that it is not destroyed by cooking, and that it is all the more active as the disease has reached to an advanced stage. He is of opinion that the disease may be developed in children through the medium of the milk. That such milk is liable to excite diarrhea and debility in children has been recognized.

Such, then, are the established facts which create a presumption that the enormous consumption of cow's milk by infants particularly, and by adults, as well as the use of inferior kinds of meat,—especially as is bought by the poor,—is not unattended with risk, but on the contrary, and gives special significance to the fact, as shown by Fox and others recently, that but twenty-five per cent of the cases of consumption in man are due to hereditary transmission; while the other seventy-five per cent are caused by unsanitary influences, among which should be placed prominently unwholesome food, of which infectious milk and meat will be found, we have no doubt, to be most prolific.

The subject demands, therefore, the immediate attention of our public authorities, State and municipal, and should receive a candid consideration, and the deliberation of our most enlightened minds and professional experts in the devising and enforcing of such sanitary measures as will protect our tables, control the traffic, and stamp out the disease.



TEMPERANCE AND MISCELLANY.



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

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

CONSIDER

Do we ever stop to consider

How little a kind word may cost,
And if once the hasty word's spoken,
One chance in our life we have lost ?

Do we ever stop to consider

All the sorrow one little word
May bring to the heart that is yearning
For the tones of love seldom heard ?

Do we ever stop to consider

How much sunshine is thrown away,
When we close fast the door where kindness
Knocks anew to come in each day ?

Do we ever stop to consider

When everything seems to go wrong,
That the fault we think is another's
Has been our own all the day long ?

Now a simple rule to consider,

And one I am sure we will find,
Is to see what is the motive
For saying a word that's unkind.

And if we take time to consider,

The motive, perchance, will grow small;
And I think in the end we may find
That there is no motive at all.

—Josephine Canning.

DAYS IN THE TROPICS.

BY MRS. E. E. KELLOGG.

A VISIT TO A SUGAR PLANTATION.

CANE growing and sugar manufacturing are among the chief industries of the Island of Cuba; and as there are no sugar plantations near Havana, we arranged to spend one day farther inland, at Mariano, visiting an *ingenio*, as a sugar plantation is termed. The day for our excursion, like all the days we spent on the island, was beautifully bright and fair; soft, fleecy clouds floated over a serene sky, and the face of nature everywhere presented the appearance of a perpetual summer time.

Our way to the railway station led us through a business portion of the city hitherto unvisited, with streets so narrow as to seem more like spaces between the houses than public thoroughfares, and with awnings stretched across the top from house to house, giving to them the semblance of long, narrow tents, under the grateful shade of which we rode in perfect comfort, though outside the shelter, the heat was like that of a midday in August.

Every shop, even the most humble, has its title, some pretty, fanciful name, that of a flower, a gem, a star, or some alluring quality, but nowhere does the name of the proprietor appear. Immersing

from the narrow, covered streets we passed beyond the confines of the older city out upon the *Pasco de Tacon*, a broad boulevard with two carriage drives and two foot paths, with double rows of trees between. Beautiful villas with parks and gardens, embellished with statuary and fountains, and filled with rare trees and shrubs, line the avenue its whole length of nearly three miles, and make it one of rare beauty, unsurpassed, it is said, in any other city on this side of the Atlantic.

About one mile out upon the avenue, we reach the railway station, and have just time to get on board the outgoing train. The cars are all after the American model for narrow gauge tracks, and graded into three classes, first, second, and third, though what is termed first class is much plainer in appearance than the common passenger coach upon our Northern railways. No brakeman with sonorous voice announces the approaching station, but the one official, or guard, who examines the tickets, turns a mechanical device (somewhat similar to an adjustable calendar) in either corner of the car, and displays in large letters of black on white the name of the "*proxima estacion*," or next station at which the train will stop.

Our only fellow passengers were two dark-browed swarthy-looking men and one lady, all native Cubans we judged, though from their dress we could not tell, as there are no costumes worn by the Cubans, no Spanish hats and cloaks, knee breeches and waistcoats, such as are deemed so picturesque in other Spanish countries. Ladies wear no hats, simply a scarf of lace thrown over the head, while the opposite sex go to the other extreme, and wear heavy wool hats in the hot sun. One peculiarity we observed in their jewelry. The teeth which their near friends or deceased relatives have had extracted, are mounted in gold and worn with as much pride as the rarest of gems.

Our route to Mariano lay over a gently undulating country with here and there a picturesque little village of high one-story houses with tiled roofs and long, barred, open windows, surrounded by yards of grass and trees, among which are almost always to be found the characteristic palms, mango, cocoa, and banana trees. Thickets of shrubs and wild flowers of varied forms and richest hues abound. Occasionally a tall tree with immense trunk and wide-spreading branches stands alone, like some majestic monarch, keeping guard over broad acres of verdant fields, and which as our guide tells us is a *ceiba*, the largest tree upon the island.

At Mariano the railway terminates, and we take a cab for the *ingenio*, which is yet some little distance into the country. On our way we pass the town residence of the owner of the estate, a large and most elegant mansion, approached by broad avenues, and surrounded by spacious grounds beautifully laid out, and adorned with fountains, shrubs, and flowers.

In the distance are to be seen acres upon acres of the sugar-cane, looking like fields of overgrown broom-corn, and soon we come upon a group of white, one-story buildings, and a mill with one high furnace chimney. This is the sugar plantation. Our arrival was during the midday rest hour, and we had an excellent opportunity to become acquainted with the mechanism employed in the sugar-making process, before the afternoon labor began. Promptly at one o'clock the engine is started, the machinery set in motion, and active operations begin.

The process by which the cane juice is converted into sugar can be easily described, but it would be extremely difficult to picture the scene of labor and activity which characterizes a Cuban *ingenio* during the height of the sugar-making season. The cane is cut fresh as needed, by companies of negro men and women working together, who move about the field like reapers, in even lines and at stated distances. They use for this purpose a *machete* or long sword-like knife, with two blows of which they slash off all the leaves, and with a third sever the stalk near the ground. Another company of men and women, with large two-wheeled carts to each of which are attached two yoke of oxen, pass over the field to gather up the long bare stalks of cane, and carry them to the mill. The oxen are worked after the Spanish fashion; the yoke, instead of being hung about the neck, is strapped upon the head close to the horns, and the animals are guided by ropes attached to a ring put through the nostrils, thus necessitating a driver for each pair of oxen. Over five hundred head of oxen and hundreds of negroes were employed in cutting and drawing the cane from the field. To view the vast sea of waving cane, the hundreds of busy reapers, the active operation of gathering and loading the stalks, and the long procession of huge, loaded carts, each with its four oxen and two drivers (which were quite as frequently women as men) winding slowly along toward the mill, was the most fascinating and picturesque scene imaginable.

At the mill the cane is thrown from each cart into large piles near a platform, from which it is carefully and evenly placed by hand in a long trough with a bottom made of slats. This trough, which is moved by the action of an endless chain, pours the cane thus spread upon it slowly and evenly between two heavy horizontal, cylindrical rollers. These crush out every drop of the juice, which falls into a receiver beneath; while the crushed stalks pass into another trough, and are carried along by it and gathered into baskets by the negroes, who carry it out and spread it upon fields, where it is carefully watched and turned till thoroughly dried, and is then gathered and used to feed the fires. This crushed cane, or *bagazo*, as it is called, serves a most important purpose in the sugar-making system, since as wood is very scarce it is the main dependence for fuel.

The manufactory which we visited was supplied with the most approved machinery. Instead of the open vats in which the cane juice was formerly boiled, large cylinders were employed in which the juice is pumped from the tanks, into which it flows from the crushing cylinders. In these it is evaporated at a low temperature by the aid of vacuum pumps, which exhaust the air, and cause the liquid to boil at a temperature much lower than boiling heat. From this it is pumped into other cylinders in which it is further condensed for a time, carefully skimmed, and finally transferred to a rapidly revolving "centrifugal" machine, by which the molasses

or uncrystallized portion is separated from the crystallized sugar.

The scene on a sugar plantation is emphatically a busy one. Everybody is employed, even the children, who feed the standing oxen with green stalks and blades of cane as they wait for the carts to be unladen. And as the cane only ripens once a year, and remains in suitable condition for use but a few months, it is necessary that the furnace fires burn night and day, and the work go on without cessation to the end of the sugar-making season.

We carried back with us to Havana, by the afternoon train, many specimens of the sugar in cane and crystals, and a picture—which can never be effaced from memory—of the busy scene of industry on a Cuban *ingenio*.

A CUP OF TEA.

BY ELEANOR KIRK.

"I BELIEVE that all this talk about the injurious effects of tea is stuff and nonsense. Now look at me," and Mrs. Cannister, a tall, spare lady somewhere in the thirties, with a pair of snapping black eyes and a resolute mouth, struck an attitude which was a trifle defiant and calculated to be impressive. "I drink tea," she added after a pregnant pause, "whenever I feel the need of it, and instead of hurting me, it always rests and stimulates me."

"You certainly seem in good health," Mrs. Cannister's companion replied, with a smiling serenity that told of comfortable nerve centers and unimpaired digestion.

"I not only *seem* but *am*," the first speaker remarked with an irritable accentuation of the inoffensive verb. "I am never ill. I am never idle. I do not sleep over six hours in any twenty-four. But I must have my cup of tea."

"I should think you would need something to refresh you," said Mrs. Simplex tentatively. "If I were in your place, I might not confine myself to tea. There are such things as beer and chloral you know, and I'm not sure that I should stop short of hasheesh."

"Your temperament is lymphatic, and mine is nervous, sanguine," said Mrs. Cannister with conscious superiority. "I always rise to the situation, while you—"

"Decline it with thanks," Mrs. Simplex interrupted with her soft laugh.

"But I do think you might be a little more social," said Mrs. Cannister. "Outside of your regular reception days, you really don't do anything. It seems exactly as if you said to yourself: It would be unwise to drop all of my friends, but they really bore me very much, and I'll see just as little of them as possible." There was a twinkle in the listener's eyes which did not escape the notice of her companion. "I have hit the nail somewhat squarely it seems," this lady added.

"I can't say that you have bungled," Mrs. Simplex replied. "I am very fond of individuals, but I dislike people. Your life of fashionable routine would kill me in a month."

"Not if you made the proper effort," said Mrs. Cannister.

"When it comes to an effort I am just as incorrigible as poor Mrs. Dombey," was the laughing response. "You sleep six hours," the lady went on. "I would prefer ten, and always have eight. When you are rolling off to your parties, balls, and receptions, I am curled up on my Turkish lounge with a shaded light, and a table full of books. That is bliss. Then I like to walk miles and miles alone. I don't want my choicest friends with me on those occasions."

"Well, I don't think so much of my own society as that," said Mrs. Cannister. "I sometimes think that my principal object in life is to get rid of my own individuality." At this point a servant entered with a delicate Sevres tea service, and a plate of cake. Mrs. Cannister's face lighted up instantly. "I knew the time had arrived for my cup of tea by the feeling," she added.

"What is the feeling?" Mrs. Simplex inquired.

"Well, 'goneness' expresses it better than any other word," her companion answered, sipping the strong decoction with a keen relish.

"It is an emptiness, a caving in—"

"Something like 'Grandfather's Clock' just before its last tick, perhaps," Mrs. Simplex suggested as she played with her teaspoon.

"Yes; but this cup of tea will make a new woman of me. It will keep me going, and going well, until five o'clock. Then I shall take another before going out this evening. But you are not even tasting my tea. What is your objection to it Mrs. Simplex?"

"To begin with, I do not need this stimulant or any other," the lady replied. "Your active temperament makes it necessary for you to exhaust your resources. I believe you call it a question of temperament. I am so lazy that my nerves seldom get tired. When I am tired, I go to sleep."

"Sleep? How can one afford to sleep in such a busy world as this?" queried Mrs. Cannister. "Why, I can find no time to sleep. I always have duties for every hour of the day, and dear me! I would so much rather wear out than rust out."

"The necessity is not laid upon me to do either," the visitor remarked. "And my chief cause of complaint with the way affairs are managed on this mundane sphere is, that so many women are obliged to wear out. I'd like to do a little resting for them if I could."

"Wouldn't it be better to help them more actively?" Mrs. Cannister was beautifully toned up now. Her eyes shone like stars, and she was quite ready for her favorite game of repartee. The second cup had not been palliated by the addition of either milk or sugar.

"There are very few overworked women whom one can help," Mrs. Simplex replied with a deepening smile, "at least with satisfaction to one's self. For instance, now, how could I help you? If it were possible for me to assume some of your duties, my doing so would only give you an opportunity to fill up the time with something else just as exhausting, and the upshot of the matter would be, that I should do

you no good, and should be exceedingly bored myself."

"And you seriously object to being bored?"

"Seriously."

"But you have n't even tasted of that lovely tea."

"Yes I have, and I do n't like it."

"Then you do not abstain from its use wholly on principle. Now I wish to ask you how anything can be harmful when it does one so much good? Why I am fit for anything now."

"And before you drank this tea, you were fit for nothing, I believe," said the visitor. "What would have been the consequence if you had not taken this inspiring draught?"

"I should have been miserable the rest of the day probably. I have said to you frankly that I must have my tea," Mrs. Cannister responded. "And my argument is that it cannot hurt me because it helps me."

"The man who is in the habit of drinking whisky or ale uses the very same argument," said Mrs. Simplex.

"But tea does not intoxicate," the hostess persisted. "I think there is a shade of difference between drinking whisky and drinking tea."

"So do I," the visitor responded, "but the same principle is involved. There is no nutritive property in tea. The refreshment comes entirely from the crystalline alkaloid which it contains, and this is simply a vegetable poison like strychnine, acting directly upon the nervous system. Your strength is exhausted, and instead of resting and so building up worn-out tissue, you drink a cup of strong tea, and whip the tired nerves into active service again. This treatment will seem to do for a while, but the day of reckoning will come. It must come as a logical and physiological sequence."

"And you think I should have gone to bed this morning instead of drinking tea?" the hostess inquired. "How very convenient and how very pleasant it would be to say to one's guests: 'I find it necessary to manufacture some new tissue, and as that is best done by sleep, you will have to excuse me for an hour or two.'

"Leaders of society can scarcely be as utilitarian as all that," Mrs. Simplex responded after a hearty burst of laughter. "Still I am inclined to think that an example of cure-taking might not be amiss occasionally. I do not advocate any radical or idiosyncratic treatment of this very simple subject. Your horses are more humanely treated by you, Mrs. Cannister, than you treat yourself. You are particular that they shall not be driven beyond their strength. They are carefully and regularly fed. They must not take cold. They must have comfortable stalls in which to rebuild exhausted organic tissue. What would you think of a man who would administer a dose of some kind to a tired horse for the purpose of getting double work out of him? Would you not be able at once to satisfactorily dispose of any argument that could be adduced in favor of such inhumanity?"

"I am sure I never thought of it in that way," Mrs. Cannister remarked, with some appearance

of having seen the point, "but if you are correct, why am I not ill?"

"Any person who depends upon stimulants for strength to carry on the affairs of life, is ill to a greater or less extent. The irritability which I know you suffer from this very moment will increase tenfold, and end in protracted nervous prostration or something worse, and it is only a question of time. There," the lady added, rising as she spoke, "you sent for me, and I have come; you asked me, and I have told you. But every word is true, and the sooner you begin to pad and pet your rasped and shattered nerves, the better."

FOOD AND INTEMPERANCE.

In the conflicting theories of temperance agitators, and the hot disputes of prohibitionists and non-prohibitionists, essential facts at times slip out of sight. With an evil so enormous, there seems to be no remedy save in striking at the root—the root being taken to be always the existence of facilities for obtaining the stimulant. The desire for such stimulant is regarded by a large proportion of workers in this field as only another manifestation of that total depravity of mankind which can find no salvation in, first, the grace of God, and secondly, the abolition of the saloon.

For some of more ardent faith, the man who swears off, if honest and believing, is proof against even the saloon, conversion having rendered temptation innocuous; and now and then a case occurs which seems to bear out this theory. But for the most part it is understood that indulgence has created a craving, excited often to madness by the sight or smell of liquor, and that one of the first essentials in common-sense work is to remove temptation, and thus prevent the possibility of relapse.

This, and much more in the same line of thought, is all true, but it seems seldom to occur to even the most ardent worker that, though cure of an existing appetite is now the prime consideration, prevention might have taken its place. The appetite is there, and apparently an instinct; and for many this is the fact. Inheritance has given generation after generation the craving, and made perpetual battle the only safeguard against it. And so, in every home where the curse has found resting place, women are weeping and praying and planning—now indignant at the weakness and shameful fall of those for whom they pray; now melting into pity, and gathering all forces for a fresh fight and perhaps a fresh defeat. The proportion of drinkers increases, and with it the ever-increasing percentage of paupers, criminals, idiots, lunatics, made so by this liquor fiend which threatens every home, and, directly or indirectly, has power in every home. No blue ribbon bars the way so completely that admittance cannot be had; no prayer has power enough to stay the fall that may at any moment be the fate of the most earnest struggler.

For one who looks for other than surface reasons, it soon becomes apparent that there is some cause not yet reached, nor likely to be

reached, by present methods. A little investigation shows that the drinker of the more common stimulants—whisky, gin, or beer—is usually in the class fed on coarse food, improperly prepared. Exactly what connection this food has with a morbid thirst is not asked. There is a general feeling that the poor man in large cities must have better lodging, better air, and better food, before he can fight his propensity successfully; but better food is taken to mean, generally, not greater variety, but meat in one form or another, in larger amount, and at every meal. What the direct effect of a preponderance of animal food may be is never asked, and the one question of diet is considered only in Inebriate Homes or under special treatment. It is known that the stomach of the confirmed drinker is weakened, and rendered almost incapable of digestion, but the restoration of power is supposed to come with signing the pledge; and that long waiting and utmost care are necessary never occurs.

For the masses who must deal with intemperance there is but the smallest understanding, often none at all, of what part food plays in repressing or creating the dreaded appetite. And even the most ardent student of laws has small faith in any laws that govern the body. Unaccountable tendencies must be beyond our own control. They are simply mysterious dispensations of Providence, and intemperance is a part of the general perversity of mankind, never to be accounted for by any natural cause.

In the limits assigned, it is impossible to go into the history of food or of national dietaries and their effects. Yet it is certain that national food has created national tendencies ever since the story of food began. The speculative and mystical tendencies of all East Indian races are the direct result of an abstinence which leaves the brain unclouded by any fumes of food. In fact, there is not substance enough in the favorite food to give full body either to life or thought, for as the dietary enlarges, thought grows with it, a varied diet proving itself essential to complex and sustained thought. But whenever the blood is too strongly stimulating,—and this occurs whenever meat is used too freely,—there is felt at once, as the inevitable consequence, an abnormal and craving thirst.

The ambition of the day-laborer in our cities is to have plenty of meat, and this is preferred as steak fried to a crisp, and swimming in fat. For the South and much of the West, "hog and hominy" rule, the former as bacon, used three times a day, and also swimming in fat, the latter as pone, rank with saleratus. In each case there is far more heat-food than can possibly be assimilated. The result is an irritated stomach, overheated blood, and thus a drying of every tissue over which it passes, thirst being the natural consequence. True nourishment has not been given. The tissues are stimulated, but not fed. The stomach does its work as it can, sending on the half-digested mass, and ending, an hour after food has been taken, in a "goneness" and craving that only stimulant can satisfy.

Nothing appears to soothe and quiet such

cravings so well as alcohol in some form. For the Southern or Western man it is likely to be whisky, made from the corn that has already proved his enemy in one form, and now turns to a still more deadly one in another. For the city laborer there are many forms, lager beer appearing always the most innocent because so much is required to bring about any effect, the amount of alcohol in each glass being too small to afford much sense of stimulation. But the quantity taken must always increase. All natural craving for food ceases, a glass of something to whip up the stomach and incline it to work being the first thought of the morning. So the miserable course goes on, till constant thirst, impossible to quench or satisfy, is the self-induced state of every drinking man.

Whatever may be thought of stimulating the appetite of the exhausted brain-worker, for instance, by the use of a glass or so of light wine, in which there is but the smallest proportion of alcohol, it is certain that any cruder form in time destroys all susceptibility, and at last all power to work in natural ways. The effect of alcohol is shown in a passage from Dr. William Robert's lecture on "Digestion," in which he mentions certain facts in connection with the eating of raw oysters, a method preferable to any other, for reasons which he states as follows:—

"The fawn-colored mass, which is the delicious portion of the fish, is its liver, and is simply a mass of glycogen. Associated with the glycogen, but withheld from a tual contact with it during life, is its appropriate digestive ferment—the hepatic diastase. The mere crushing of the oyster between the teeth brings these two bodies together, and the glycogen is at once digested without any other help than the diastase. The raw, or merely warmed oyster is self-digestive. But the advantage of this provision is wholly lost by cooking; for the heat immediately destroys the associated ferment, and a cooked oyster has to be digested, like any other food, by the eater's own digestive powers.

"My dear sir, do you want to ruin your digestion?" asked Professor Houghton, of Trinity College, one day, of a friend who had ordered brandy and water with his oysters in a Dublin restaurant.

"Then he sent for a glass of brandy, and a glass of Guinness's XX, and put an oyster in each. In a very short time there lay in the bottom of the glass of brandy, a tough, leathery substance, resembling the finger of a kid glove, while in the porter there was hardly a trace of the oyster to be found."

This "kid glove" condition covers also the stomach steeped in alcohol, which responds more and more feebly to any demand upon its powers. Larger and larger doses become a necessity, and thus the evil effects are cumulative, and each glass a stronger reason for another.

Is the pledge any sufficient guarantee against the inevitable working out of natural laws? and can any ribbon hold power enough to quiet a craving increased at every meal, and which, unless there be a struggle horrible to all who

must witness it, proves master in the end? Yet it is certain that in right food is the solution of the difficulty, and that for those in whom there is inherited tendency, this is the only method of suppressing the insistent desire.—*Helen Campbell, in Christian Union.*

Popular Science.

—A submarine war vessel is being constructed at Ft. Lafayette, which will be lighted by means of secondary batteries.

—The Pennsylvania Railroad Company are lighting the cars on part of their line, by means of electricity, using storage batteries for the purpose.

—Stanley is perfecting arrangements with English capitalists to found a "free state" in the central part of Africa, to be known as Congo Free State.

—In exploring for gas, a well has been sunk at Cleveland to a depth of 720 feet. Rock-salt and petroleum have been discovered, but thus far, no gas of any account.

—Discoveries among the ruins of the Aztec and Zuni cities, bring to light spindles and whirls almost identical to those employed at present by the Highlanders of Scotland.

—A Brooklyn cat has gone into the incubating business. She sets on eggs, like an old hen, until the chickens are hatched, and then cares for them as though they were kittens. She has hatched out several broods of chickens.

—Since August 10, astronomers have been watching with interest Tuttle's comet, which is this year making its regular visit, which occurs once in about thirteen years and nine months. Five new asteroids have been discovered this year.

—Some scientific experiments which have recently been made in France, show that hot water is as good for cows, as for human beings. Cows watered with water at a temperature of 113°, gave one-third more milk than those which were taking cold water.

—An English astronomer has discovered that by taking photographs of the sky, many stars register themselves on the photographic plate, which are not visible to the eye with a telescope. An exposure of about six minutes was found necessary to photograph invisible stars.

—A Frenchman has discovered that it takes a mosquito twice as long as some other kinds of insects, to digest human blood, the blood being found in its stomach twenty-four hours after it has been taken, while other insects digest blood in half the time. The discoverer seems to have taken much satisfaction in thinking that the

mosquito atones for the pain which he inflicts upon us, by having his ill-gotten meal "lie heavy on his stomach," as a dyspeptic would say.

Tin Mines.—Large deposits of tin ore have been discovered in West Virginia and adjacent portions of Ohio, which promise to prove a source of great wealth to these States.

Roman Warehouses.—Recent excavations in Rome have disclosed great warehouses, built two hundred years before the present era. Of those discovered, one was filled with elephants' tusks, and another with lentils. Both of these commodities were too far advanced in decomposition to be of any particular use.

The Telemetrograph.—This little instrument of French origin, consists of a combination of the telescope with the camera lucida. By looking through the instrument at a distant object, and tracing a drawing on paper with the camera lucida, it is possible to measure distances with sufficient accuracy for military operations of any sort.

Bees as Weather Prophets.—A German publication calls attention to the fact that an accurate forecast of the weather may be made by observing the habits, and particularly the temper, of bees. It is claimed that when a thunder storm is approaching, bees which are ordinarily quiet and easily managed, become irritable and much excited, often stinging even the keepers to whom they are accustomed.

Preserving Milk.—It is perhaps not generally known that milk may be preserved for a long time by canning in the same manner that fruit is canned. New cans and fresh milk should be used. The cans should be filled with the milk, and then placed in cool water, and the water gradually brought to a boiling point, thus raising the temperature of the milk. The cans should then be sealed up tightly. It will keep six months.

A Machine for Producing Rain.—Among the last inventions reported from Australia is a machine for producing rain-storms. It is intended to force a rain supply from the clouds during a period of drought. The apparatus is in the form of a balloon with a charge of dynamite attached underneath it. The balloon is to be sent into the clouds, and when there, the dynamite is to be fired by a wire connecting it with the earth. A trial of this novel contrivance is to be given upon the dry district of New South Wales, and the result is looked forward to with interest by some of the residents of that colony.

Measuring Trees.—*The Garden* publishes the following method of measuring the height of trees, which may frequently be put to convenient use:—

"Suppose I want to find the height of a tree which throws a shadow of 20 feet. In the first

place, I should cut a stick, say 3 feet long, stick it up opposite the required tree, and measure the shadow of it. We will suppose the stick throws a shadow of 2 feet; now all I have to do is just to make a simple proportion of it.

| | | | | |
|--------------------|---|-------------------|---|--------------------|
| Shadow of stick | : | Shadow of tree | : | Height of stick |
| 2 feet | : | 20 feet | : | 3 feet |
| | | 3 | | |
| | | — | | |
| | | 2)60 | | |
| | | — | | |
| | | 30 | | |

The height of the tree throwing a shadow of 20 feet would be 30 feet; because as 2 feet is to 3 feet, so is 20 feet to 30 feet. By this method you can measure any tree that the sun shines upon, provided there is nothing to hinder measuring its shadow."

Petrified Wood.—The petrified wood which is so abundant in the United States Territories of Arizona, Wyoming, and the Rocky Mountain regions, is rapidly becoming utilized by the practical American. In San Francisco there is now a factory for cutting and polishing these petrifications into mantel-pieces, tiles, tablets, and other architectural parts for which marble or slate is commonly used. Petrified wood is said to be susceptible of a finer polish than marble, or even onyx, the latter of which it is driving from the market. The raw material employed comes mostly from the forests of petrified wood along the line of the Atlantic and Pacific railway. Several other companies have also been formed to obtain concessions of different portions of these forests. Geologists will regret the destruction of such interesting primeval remains, and some steps ought to be taken to preserve certain tracts in their original state.—*Engineering.*

Protection Against Lightning.—Mr. Calladon, addressing the French Academy of Sciences recently, said that there was no truth in the popular supposition that a building with a metal roof, or with metal in its construction, is more likely to be struck by lightning than a building composed wholly of non-conducting materials, provided there is no means of electric communication between the metal and the earth. A house in Neufchâtel, Switzerland, had been struck by lightning and burned, and somebody suggested that a lot of old iron stored in the attic had attracted the electric fluid. It was this suggestion that brought Mr. Calladon to his feet. He said that the iron had had nothing to do with attracting the lightning, but had probably been a cause of the burning of the building after it had been struck. The explanation of this is that a combustible substance placed between two conducting surfaces (in this case the humid atmosphere and the pile of iron) is generally sure to take fire when an electric current is passed through it from one conducting surface to the other. "The lightning having struck the house," concludes the scientist, "it found its way to the metal within, and ignited whatever combustible material it passed."



GOOD HEALTH.

BATTLE CREEK, MICH., OCTOBER, 1885.

J. H. KELLOGG, M. D., EDITOR.

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THE CARNIVOROUS APPETITE.

WHEN the practice of meat-eating was introduced into the human family, history does not positively inform us, but certain it is that primitive man was not carnivorous in his habits. In this one thing, at least, Darwin agrees with Moses. Bible accounts represent man in his primitive innocence as subsisting wholly upon the fruits of the soil.

Darwin professes to trace back the origin of the human family to the megatherium, a four-handed beast which obtained its sustenance from the fruits and ground-nuts of the primeval forests through which it roamed. Pythagoras, one of the most renowned of Grecian philosophers, was a rigid vegetarian, as were all his followers. More than one modern philosopher has found himself unable to do his best work only when imitating the plan of Byron, who, during his stay in Venice, wrote to a friend, "I stick to Pythagoras." Plato and Seneca, two other celebrated philosophers, were vegetarians, as were also Shelly, and Lord Franklin during a portion of his life. The great Newton, while writing his most celebrated mathematical treatises, abstained wholly from animal food. Wendell Phillips, the "silver tongued orator," informed the writer a few years before his death, that for fifty years he had been a practical vegetarian, and rigidly so during a considerable portion of the time, though while traveling about the country he frequently tasted a little fish, when meagerly supplied with wholesome vegetable food. The author of "Little Women," as well as the little

women themselves, as we were informed by her father, the eminent Concord philosopher, were all vegetarians. The writer has been a vegetarian for more than twenty years, and from personal experience is convinced that the practice is in every way conducive to health and to the sustaining of physical and mental strength during the prosecution of most arduous labors, both physical and mental.

It must be allowed, however, that meat may be used in moderation, in connection with fruits and grains, without great apparent detriment, except when the flesh is obtained from a diseased animal, which, unfortunately, is an accident quite liable to occur, as trichinae, tape-worm, and various parasitic diseases, besides consumption, possibly scrofula, and some other constitutional maladies, are liable to be contracted by the use of the flesh of diseased animals. Certain it is that young persons may dispense with the use of flesh food with perfect safety. Milk is a perfect substitute for all the good qualities of flesh food; and it is not impossible, as has been suggested, that parents may often find cow's milk far better than cow's hide in the management of hot-headed and refractory sons.

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Diphtheria in Ice-Cream.—A death is reported from diphtheria as the result of eating ice-cream made by a workman who was suffering with this disease. Every person who ate of the cream made by this man suffered with a severe sore throat, though only one lady died of the disease, which was undoubtedly diphtheria.

PANCAKES.

A WRITER in the *Cook* condemns pancakes in the most vigorous terms, particularly buckwheat pancakes, which he considers chief of all dietetic abominations, because buckwheat is heating. We imagine that the principal injury arising from the use of buckwheat pancakes is the burnt grease with which they are covered, and the sour milk and soda with which they are raised, rather than the buckwheat. Nevertheless, we can heartily indorse the writer's criticisms of this most unwholesome of dietetic abominations, and shall take pleasure in giving our readers the benefit of his observations :—

“Pancakes are an evil peculiarly American. It is true that they are known in Germany, and to some extent in France, but German and French pancakes are so swiftly fatal that they are eaten only in small doses, and at rare intervals, and so do very little harm. American pancakes, being a slow poison, are eaten freely and in vast quantities, and the result is the physical and moral deterioration of the nation.

“There are three leading varieties of pancakes, the wheat, the rice, and the buckwheat. Of the fourth variety, known as Indian pancakes, it is unnecessary to speak, for they are comparatively infrequent, which is a fortunate thing; for the details of Indian pancakes are really unfit for publication. Wheat-cakes are made either with fresh or sour milk. In the former case they resemble leather, and in the latter case cotton. There is probably sufficient nourishment in either kind to sustain life for a limited period; but the attempt to digest them would in time wear out the coats of the stomach of a brass monkey. Rice-cakes, on the other hand, can be so made as to be both toothsome and nutritious, but never more than once in a lifetime can rice-cakes be made successfully. The cook may try a thousand times to make rice-cakes, but the result will be a thousand different varieties of inedible batter varying from sole-

leather to burned custard, and if once by happy accident perfect rice-cakes are made, the accident cannot be repeated.

“Buckwheat cakes are of all pancakes the most destructive. Their one merit, that of increasing the temperature of the consumer, is in nearly all cases an evil. Were a man residing at the North Pole, he might warm himself by eating buckwheat cakes; but in any decent latitudes, buckwheat injuriously overheats the blood. No one can tell to what extent the universal indulgence in buckwheat cakes brought about our civil war by heating the blood of the combatants. It is, however, undeniable that the introduction of buckwheat cakes into Paris a few years ago by an unprincipled *restaurateur* was followed by the overthrow of the empire and the bloody madness of the Commune.

“All the benefits of buckwheat cakes could be obtained by swallowing cotton while sitting on a moderately hot stove. At the same time, one of the evils of buckwheat—the blood-poisoning and cutaneous eruptions which mark the victim of buckwheat—could be avoided. And yet the men who daily breakfast, or lunch, or even dine, as they call it, on buckwheat cakes, fancy that they are taking food into their systems. The amount of buckwheat eaten in the form of pancakes in this country every year is something appalling, and to look for any real purification of our politics in such circumstances is idle. Men with their circulation stimulated and their stomachs and livers inflamed by buckwheat, are unfit to govern themselves, much less to conduct the affairs of a great nation.”

Intoxicating Candy.—Dr. Edson, of the N. Y. State Board of Health, recently seized a lot of candy, by eating some of which a number of children had been made intoxicated. The candy consisted chiefly of rock and rye drops, and chocolate bombs. The bombs were filled with a liquid, of which there was sufficient in a dozen to fill a wine-glass. Upon exam-

ination, it proved to be fusel-oil and alcohol; or in other words, the bombs were filled with bad whisky.

Chloroform Habit.—Within a few years we have met a number of cases of the chloroform habit, which, there is evidence to believe, is a fast-growing evil. Persons who have once been addicted to the opium habit, sometimes substitute this for the narcotic drug, and keep a supply always on hand, ready to resort to whenever slight pain makes its appearance, or the want of diversion renders life dull and tedious. The effects of the drug on the system are even worse than those which follow the use of alcohol. All the vital functions rapidly succumb to its use, and in a few years the sufferer goes down to the grave, a physical, mental, and moral wreck.

Paragraph for Smokers.—A New York gentleman has been investigating the cigar-making business, and gives a rather unpalatable picture of the way in which the weed is prepared for the consumer. From what we have seen of the cigar-making business in Key West and Cuba, we have no doubt the statements made are entirely correct. We have no particular interest, however, in improving the character of this popular means of suicide. We might as well, perhaps, undertake the improvement of the rattlesnake or the scorpion without extracting the fang of the one or the sting of the other. The most objectionable feature of even the Havana cigar is the nicotine which it contains, beside which the filth it might gather lying on the ground, is clean and insignificant; but let us hear what our contemporary has to say on the subject:—

“If the whole process of manufacturing were laid open to inspection, the enjoyment of the most fastidious smoker would assuredly be somewhat blunted. When you see the dirty negro working, and the uncleanness of many factories, where so much tobacco is lying on the ground and frequently coming in contact with the spit-

tle and naked feet of the workmen, then you feel, indeed, a strong desire to request the manufacturer that more care with regard to cleanliness be exercised by his employees. Compared with the extreme filthiness of all the cheaper grades of cigarettes, these cigars are very clean. So-called Russian cigarettes, made by the lowest classes, in filthy rooms, from all manner of waste tobacco, thrown away stumps and discarded chews picked from the gutters, with other practices too foul to be printed, are among the appetizing recommendations of the cigarettes smoked by boys and men.”

The Diet of a Great Naturalist.—One of the greatest of American naturalists, John James Audubon, was very abstemious in diet, which undoubtedly contributed very largely to the magnificent physical development which enabled him to accomplish such a world of work. He writes thus concerning himself in his early life:—

“I ate no butcher's meat, lived chiefly on fruits, vegetables, and fish, and never drank a glass of spirits until my wedding day. To this I attribute my continual good health, endurance, and an iron constitution. So strong was the habit, that I disliked going to dinner-parties, where people were expected to indulge in eating and drinking, and where often there was not a single dish to my taste. I cared nothing for sumptuous entertainments. All this while I was fair and rosy as a girl, strong as any one of my age and sex could be, and as active and agile as a buck. And why, I have often thought, should I not have kept to this delicious mode of living?”

Sanitary Honesty.—Some people who would not think of lying or stealing do not object to keeping the front yard in a very handsome condition, while the back yard is a perfect Golgotha. The inconsistency of such conduct was evident even to Sambo. A contemporary relates the following:—

“Sam, you are not honest. Why did

you put all the good peaches on the top of the measure, and the little ones below?" "Same reason, sah, dat makes de front of your house marble and the back gate chiefly slop bar'l, sah."

"*The Fowls of the Air.*"—An English Sunday-school teacher, after reading to her class the text containing the above words, inquired what were the fowls of the air. A pause occurred, after which a little girl volunteered the reply, "Please, Miss, it is the bad smells."

BIBLE READING ON HEALTH.

BIBLE readings have come to be one of the most popular methods of imparting religious instruction, and we see no reason why this same excellent means should not be employed in spreading the gospel of health. The Bible abounds with hints and precepts respecting health. We take pleasure in presenting the following excellent Bible reading on this subject, which has been prepared by Eld. S. N. Haskell, well known to many of our readers as a thorough hygienist, as well as a Bible student:—

1. Does God regard the health of his people? 3^d John 2.
2. Has eating and drinking anything to do with our religion? 1 Cor. 10 : 31.
3. How much of our person is affected by Bible religion? 1 Thess. 5 : 23; 1 Cor. 6 : 19, 20.
4. Will any be saved who knowingly defile the body in any way? 1 Cor. 3 : 16, 17.
5. Can the body be defiled with improper food? Dan. 1 : 8.
6. What did the Babylonian king eat, with which Daniel refused to defile himself?—Swine's flesh, and meats offered to idols, and also highly seasoned food.
7. What may be said of peppers and spices, commonly used in cooking?

ANS. 1. That they contain no food element whatever. 2. That they do not add to the delicate flavor of the fruits, grains, and vegetables, but destroy the natural sensitiveness of the taste, so that it is unable to detect the choice flavors given them by nature. 3. They do the entire system a positive injury by inflaming the delicate blood-vessels of the throat and stomach, and whipping up the often already overtaxed nerves to increased exhaustion, and heating up the blood through the entire system, thus making it more difficult to control the temper or any of the natural passions.

8. What kind of food did Daniel desire

should be furnished himself and companions Dan. 1 : 12.

9. What variety of food was included under the term "pulse"?—Pulse, "Seeds, herbs, greens, vegetables, *i. e.*, vegetable food."—*Genesis*. "The fair interpretation is to apply it to that which grows up from seeds; such probably as would be sown in a garden, or as we would now express it, 'vegetable diet.'"—*Barnes's Commentary on Daniel*.

10. Do not people now, as in Daniel's time, generally suppose that people will grow poor and feeble on a vegetable diet? Verse 10.

11. What was the result of the experiment in Daniel's case? Verse 15.

12. Upon what kinds of food do the strongest and most peaceable nations of the earth largely subsist, such nations as the Scotch, the laboring classes of the English, and others?—Vegetables and grains.

13. What do the Scriptures say of the habits of those who strive for the mastery? 1 Cor. 9 : 24, 25.

14. What statement is made by physicians attending persons who are being trained for the purpose of developing the most physical strength and nerve power, before entering upon a race, a prize fight, or a similar contest?

ANS. "As soon as the contest has been agreed upon, and the arrangements made, the training begins, and first, the diet is modified, and adapted to the production of the greatest amount of physical power and endurance. Away goes tobacco, tea, coffee, rum, beer, etc., in all their various forms, and all sensual indulgences of every description. Their living consists of plain, simple, nourishing food, such as bread, beef, fruits, and cold water."—*Everybody's own Physician; How to Acquire and Regain Strength*, by G. W. Gleason, M. D., Philadelphia, Pa. See also *Home Hand-Book of Domestic Hygiene and Rational Medicine*, by J. H. Kellogg, M. D., Medical and Surgical Sanitarium, Battle Creek, Mich.

15. Did the apostle Paul say that he took a similar course that he might be certain to win in the Christian race? 1 Cor. 9 : 26, 27.

16. If men are willing to so deny themselves to gain a small reward in this life, ought we not to be willing to deny self to gain *everlasting life*?

17. What did God originally create for man's diet? Gen. 1 : 29.

18. Then what was the original meat for man?

19. Will any ever teach otherwise? 1 Tim. 4 : 3.

20. How does the apostle describe that which is good? 1 Tim. 4 : 4, 5.

21. At how early a date did God recognize the distinction between clean and unclean animals? Gen. 7 : 2.

22. Did God ever permit man to eat of the clean animals? Lev. 11 : 1-3.

23. What shows that God did not design this for the general diet of man? Ex. 16 : 4.

24. What kind of food was this? Ps. 78 : 24, 25.

NOTE.—This was probably called "angels' food" for the simple reason that the angels *provided* it, and not because they subs't upon it.

25. What special promise did God make Israel prior to giving them this bread? Ex. 15 : 26.

26. What had been Israel's diet in Egypt? Ex. 16 : 3.

27. Were they satisfied with this bread from heaven? Num. 11 : 13.

28. How did they feel toward it? Num. 21 : 5.

29. What did they desire? Num. 11 : 4, 5.

30. How did they express themselves? Verse 6.

31. Did God supply them with flesh? Verse 31.

32. What was the physical effect of this meat? Verse 33.

33. How did it effect them spiritually? Ps. 106 : 14, 15.

34. Upon what principle did God sometimes grant men's desires, even when it was not best? Matt. 19 : 8.

35. What lesson would Paul have us learn from these particulars concerning Israel's lusting for flesh? 1 Cor. 10 : 6, 9.

36. When, and under what circumstances, did God first permit man to eat flesh meat? Gen. 9 : 1-3.

37. What did he say would be the effect of this change? Gen. 9 : 5.

38. How does he explain the expression, "Require the life of man"? Verse 6.

39. If the requiring of the life of man at the hand of man signifies the shortening of his life, what shall we understand by the expression, "At the hand of every beast will I require it"?

40. How many generations reached from Adam to Noah?—Ten.

41. What was man's average age during this time?—Over 900 years.

42. How many generations was it from Noah to Abraham?—Ten.

43. During this time to what age had man been reduced?—To less than 200 years.

44. What does David say about the age of man in his day? Ps. 90 : 10.

45. What is said to be the average age of man at the present day?—About 28 years.

46. Should we conclude, then, that diet had anything to do in shortening man's life?—It is a self-evident fact and a Bible truth.

47. Then what would we conclude to be the best food for man? Gen. 1 : 29.

48. What besides the Bible arguments already considered would have a tendency to lead men, at the present time, to discard the use of animal food?

ANS. 1. The diseased condition of all kinds of animals generally; 2. The inhuman treatment in transporting comparatively healthy animals, which results in creating such a feverish condition as to render them unfit for food; 3. The dangers arising from the various modes of packing, curing, and canning meats.

49. What kind of flesh did God forbid men to eat at all, or even touch? Deut. 14 : 8.

50. What was included under the term "unclean"?—That which was *physically* unclean, and that which was *ceremonially* unclean.

51. For what purpose was the hog created?

ANS. For a scavenger, being provided with an extra sewage in the fore limbs to enable him to dispose of a larger amount of waste matter than other animals, and not lose his life.

52. Is the hog, then, physically or ceremonially unclean?—Physically.

53. Was physical uncleanness recognized before the time of the Jews? Gen. 7 : 1, 2.

54. Was the vision given to the apostle Peter designed to inform him that there was any change in the physical unfitness of the various animals for food, or was it to teach him that he should make no distinction in men? Acts 10 : 28.

55. What does the Lord say of those who make a great profession of holiness, and yet pay no regard to their diet? Isa. 65 : 4, 5.

56. What is said of those who are professing to sanctify themselves in preparation for the great day of God, and yet continue to eat swine's flesh? Isa. 66 : 15-17.

57. What special object did the Lord have in changing the diet of his people Israel? Deut. 8 : 3.

58. May we not hope that carefulness in our diet may impress us with this same great truth, and thus make more sure our hope of the future?

59. Is it not also reasonable to suppose that the Lord will take this natural means of protecting his people during the time of the seven last plagues? Ps. 91 : 4-10.

60. Of what other dangers besides improper diet, does the Saviour warn us? Luke 21 : 34.

61. What is the meaning of surfeiting?—Overeating. See Webster.

62. What is true Bible temperance?—A total abstinence from all that is hurtful, and a moderate use of only that which is good.

63. Is it not reasonable to suppose that those who are preparing for the close of probation will heed the Saviour's warning, and will give proper attention to their habits of eating?

NOTE.—Dr. Adam Clarke, the distinguished Methodist commentator held and practiced substantially the views here advocated, as have also Newton, Franklin, and others.


 DOMESTIC MEDICINE.
 
CARE OF HELPLESS PATIENTS.

BY KATE LINDSAY, M. D.

PATIENTS frequently become so weakened by disease as to be unable to move themselves. In many cases it is unsafe for them to try to move themselves or to assume even a reclining position. This is especially true in cases of typhoid fever, where even slight exertion may cause laceration of the bowels at some point weakened by a perforating ulcer. In cases also of severe wounds, and where there is danger of severe hemorrhage from any internal organ, also where there is danger of failure of the heart from loss of blood or some blood poison, as diphtheria, caution and care must be used in changing the position of the patient. Frequent changing and airing of the bedding in such cases must not be neglected, and it requires skill and experience on the part of the nurse to do this properly without overexertion on the part of the patient.

If the patient is to be moved into another bed, before disturbing him get the fresh bed all ready, sheets, blankets, etc., aired and warmed, and bed made up nicely; then turn the head of the fresh bed in the same direction as the foot of the bed he is occupying, far enough away so that the nurse can easily turn around between them. If the patient is not too heavy, and can use his arms to assist himself, the nurse should put one arm well under the lower part of the shoulder blades, the other under the middle part of the thigh, and leaning well over, let the patient grasp her firmly around the neck; then gently raise, turn around, and place on the fresh bed. If the patient is heavy, completely helpless, or has an injured member to be cared for, three persons are needed to move him safely,—the two principal bearers to lift the body, and some one to care for the head or helpless member. Where the narrow iron cot bed frame is used, the principal bearers may place themselves, one on either side, and clasp one pair of hands underneath the shoulders, the other underneath the thighs, while the third cares for the head or injured member, then all move together and slip him feet first over the foot of the cot into the fresh one

which has been wheeled there for this purpose; or when a fourth person is at hand, he may be simply raised so that the cot can be wheeled out from under him and a fresh one wheeled in its place, on which he may be gently laid. Owing to the width of the bed frame and the high foot and head boards, it frequently happens that this method cannot be practiced. In such a case the principal bearers must arrange themselves side by side, the first placing one arm well under shoulders the other under the waist, the second placing one arm under the lower part of spine and the other under the knees, the third caring, as before, for the head or injured member; then all moving together, lift the patient, turn around, and change to the fresh bed which should occupy the position first mentioned.

When it is desirable to move the patient in a perfectly straight position, a blanket should be slipped under the lower sheet, and two poles rolled tightly into the selvages of both sheet and blanket. Four persons, one for each end of the poles, will be needed to move the patient.

Two methods may be employed in changing the bedding without moving the patient off the bed. In the first, beginning at the head of the bed, loosen and push down the under sheet and upper mattress, and having the clean sheet and mattress neatly rolled up crosswise, tuck the upper edge in snugly at the head of the bed; then with one hand gently raise the head, and with the other push down the soiled bedding and unroll the fresh to take its place until the foot is reached, when all can be smoothed out and snugly tucked in. Two persons can do this better than one. To change the upper sheet and blanket without exposing patients, roll up as before, and begin at the foot of the bed by neatly tucking in the lower edges of sheet and blanket; then raise the edge of the soiled bedding and unroll the other gently under it. When it is all unrolled, the patient will be covered without exposure, and the soiled may be removed.*

When the bed is wide, to change under bedding, roll the cotton mattress and under

sheet up lengthwise, and then draw the patient on the soiled bedding near the opposite side of the bed, and arrange him in a straight position; then turn on the side, and by slipping the arms well under the patient and drawing the opposite side toward her, the nurse may change the position without exertion on the part of the sick one. Tuck in one side of sheet and thin upper mattress or comfortable; then partially unroll and push close up to patient's back. Turn him gently on his back by raising the edge of the soiled clothing, and slip arms under him and turn on opposite side; then slip out the soiled bedding, replacing it by the fresh.

Bed sores are often very troublesome, sometimes may even endanger life when the patient is much reduced by disease, and so weak as to be unable to change his position himself, or from any cause is unable to assume but a few positions in bed. The parts most liable to become sore are points of shoulder-blades, spine, and hips. The cause of bed sores are death of the tissues from pressure causing stagnation of the blood, and want of proper care and cleanliness. In nine cases out of ten, they may be prevented by good nursing. Changing the position every two hours, alternate hot and cold sponging over the parts where there is the least symptom of redness or abrasion, and when the skin is intact and parts are not too sensitive, gentle massage, will nearly always prove effectual. The use of some astringent as alcohol and water, equal parts, or a saturated solution of alum water used several times a day will toughen the skin and render it less liable to become abraded. If the bed sores are already formed, or form despite all means of prevention, then other measures must be resorted to. The rubber air or water bed and air or water cushions will relieve the parts from pressure. Keep the sores clean by washing with disinfectant, a solution of carbolic acid, one part to one hundred of water. Dress with absorbent cotton wet in the same solution, and follow the doctor's orders closely. If the air or water beds and cushions cannot be had, a substitute may be made in the form of a circular cushion with a hole in the center corresponding to the bed sore. The cushions may be filled with chaff, cotton, oakum, hair, or any light material, and should be renewed frequently, as they become hard by use.

When the evacuations are involuntary,

great care must be exercised to keep bedding, clothing, and person clean and dry. This is often very difficult; but no false modesty should prevent the nurse from doing her duty in this respect. The bed should be protected by a square of oil-cloth or a rubber sheet under the hips; over this should be spread a pad made of cotton batting covered with soft, clean cloth, or even old newspapers will do in the absence of anything better. The pad should be changed whenever soiled. Those made with the batting may be washed, dried, and used again. Those made of paper may be ripped, the paper burned, and the covering washed and disinfected and used again.

Keep the patient's bed from wrinkles and all inequalities, also bread crumbs or anything likely to cause him discomfort.

Patients often cannot breathe easily when the head is low; and several pillows ranged one above another like tiers of brick are used to obviate the difficulty, but when arranged in this manner, they make a bad matter worse by flexing the head forward and depressing the chin on the thorax. They should be placed so as to form a support for the neck and shoulders in the form of an inclined plane.

It often rests a patient very much to be raised into a reclining position in bed. A pile of pillows does not make a compact, even support for the spine in such cases. If the patient is able to sit up straight, a chair inverted and covered with a comfortable or small pillow, answers very well; or a bolster may be made of straw, chaff, or hair; or excelsior bed rests made adjustable, and consisting of a frame covered with canvas or ducking, are useful in such cases, but are not always at hand. Pillows stuffed with hair or cotton are preferable to those made of feathers for the sick-bed.

To have the sick-bed clean and wholesome, requires care and painstaking on the part of the nurse, but the best welfare of the patient demands that it should not be neglected, and tact and care can secure the blessings of cleanliness under very adverse circumstances.

—A horse—one horse a day—taken regularly is both a preventive and a cure for nearly all human maladies. To some, advice must be given to ride slowly; but to others we may say in the language of the old polypharmaceutists: "When taken, to be well shaken."

Question Box.

Moles.—A subscriber inquires :—

1. What will prevent moles from coming upon the face ?

2. Is there anything which will remove them after they appear ?

Ans.—1. We know of no means by which moles can be prevented.

2. They can be removed by means of powerful caustics, by galvano-cautery, or may be cut out by a surgical operation. Such an operation would of course leave a scar.

Climate for Nasal Catarrh.—A subscriber asks : What is the best climate for a person suffering with nasal catarrh ?

Ans.—A person suffering with nasal catarrh requires a dry and uniform climate. Such a climate is to be found in some of the States and Territories of the Rocky Mountain region. The climate of most of these States, though somewhat changeable, is dry.

Cold Bathing.—Is a cold sponge bath, taken in the morning on rising, a good remedy for nervousness, and should the practice be employed in winter ?

Ans.—Cold bathing is one of the most powerful of stimulants. Every one who has taken a cold bath and felt the exhilaration accompanying the reaction which follows the bath, when properly taken, will testify to its enlivening effects. In some cases of general nervous debility and impaired nutrition, we have found a cool morning sponge bath a very efficient remedy. It is less useful in cases of nervous exhaustion from excessive mental work, from worry or anxiety, than in cases arising from defective assimilation, or general impairment of nutrition. It is not necessary to employ cold water. Few persons can stand very cold water for a very great length of time without injury, but the water should be cool, say 15 or 20 degrees below the temperature of the body, about 80° Fahrenheit. The bath should be taken quickly and in a warm room, so as to insure good reaction without prolonged chilliness.

The Proper Number of Meals.—Another dyspeptic inquires :—

1. Is a small meal more easily digested than a large one ?

2. If this is true, is it not better for a dyspeptic to take three small meals than two large ones ?

Ans.—1. A small meal is certainly more easily digested than a large one.

2. It would certainly be better for a dyspeptic or any other person to eat three small meals at proper intervals than to eat two large ones, but a dyspeptic should never eat large meals.

Large meals are not necessary. A person can take in two moderate meals all the food naturally required by the body, and all that can be properly utilized. Two meals a day are better for most dyspeptics than three, for the reason that a person who is dyspeptic has a slow digestion, and consequently requires a longer interval between meals than a person whose digestive organs are normally active. A healthy stomach will digest meals in four to six hours, while a dyspeptic stomach requires seven to nine hours. Hence the importance of having a long interval between meals. If the interval is of proper length, there is not opportunity for more than two meals in one day without bringing the last meal too near the hours of sleep. If, however, a person is suffering with stomachal disorder which renders it impossible for him to take more than a small quantity of very simple food, then it may be necessary to take food more frequently than twice a day. We frequently have patients take their food four or five times in twenty-four hours with benefit.

Melons.—A patient asks : Are water-melons healthful ?

Ans.—Thoroughly ripe melons are entirely healthful for most persons, if eaten at proper time and in a proper quantity. They furnish liquid food in a very agreeable and entirely wholesome form. Stale melons and unripe melons are very unwholesome. In eating melons, only the juice should be taken ; the pulp should be rejected.

Ice.—A correspondent inquires whether germs are destroyed by freezing, and whether or not it is prudent to use ice in commerce without knowing its origin ?

Ans.—Germs are not destroyed by freezing. They are able to withstand a temperature far below zero. Undoubtedly much disease is occasioned by the use of ice. Cases of typhoid fever have frequently been traced to the use of contaminated ice. Ice should never be used either for drinking purposes or the refrigerator unless known to be obtained from a pure source.

Tomatoes.—A dyspeptic correspondent inquires :—

1. Are tomatoes a healthful article of diet ?
2. Are they better cooked than raw.

Ans.—1. Yes.

2. Yes.

Compound Oxygen.—We are asked our opinion respecting the use of compound oxygen.

Ans.—This remedy possesses the merit of being harmless, which cannot be said of all nostrums. Its virtues, however, are only those of pure water used in the same way in which compound oxygen is employed. A chemical analysis shows it to contain nothing but a very small quantity of non-volatile and wholly worthless salts. The "oxygen aqua," which is sold with it as a remedy to be taken internally, is simply impure, distilled water.

Germ and Disease.—A patient asks: How do germs produce disease?

Ans.—The relation of germs to disease is not, in every case in which such a relation is supposed to exist, thoroughly understood, but the relation of a few diseases has been pretty thoroughly worked out. For example: In the case of diphtheria, a disease in which the relation of germs to morbid processes is perhaps as thoroughly established as in case of any disease, it is supposed that germs find an entrance to the tissues through abrasion of the mucous membrane, usually that of the throat, and multiplying, obstruct and irritate the tissues, causing them to throw out a fibrinous exudate, which produces the membrane. As these develop, the germs find their way deeper into the tissues, and finally gain access into the blood vessels, through which they are carried by the blood current into every part of the body. Getting into the nerve centers, they produce paralysis; in the kidneys, they produce obstruction of the secreting tubes. In many parts of the body, they accumulate in such numbers as to obstruct the circulation of the blood, and thus many kinds of mischief are occasioned. In similar ways, germs do their work of mischief in other diseases.

Hiccough.—A correspondent asks:—

1. What is the cause of hiccough?
2. How may it be relieved?

Ans.—1. Hiccough is occasioned by spasmodic contractions of the diaphragm, which is usually caused by pressure from accumulation of gas in the stomach, or irritation of the stomach from indigestion.

2. There are various remedies for hiccough. It is a spasmodic, rhythmic affection, the contractions occurring at regular intervals. If this regularity can be interrupted, the hiccough will cease. An interruption may be secured by holding the breath, or by the application of electricity in such a way as to hold the muscles vigorously contracted, until the regular time for the contraction is past. Drinking hot water and swallowing ice pills are also good remedies. In obstinate cases which will not yield to other remedies, ten or fifteen drops of chloroform may be administered in a little syrup or gum water.

Dandruff.—A correspondent inquires a remedy for dandruff.

Ans.—This very common disorder is a disease of the skin in which there is too rapid a shedding of the cellular covering of the body. The epithelium scales are produced too rapidly. Any part of the body may be subject to the disease, but it is less noticeable when it occurs upon other parts than when present upon the scalp, for the reason that the hair protects the scalp in such a way as to allow an accumulation of the bran-like scales, which, in most other parts of the body, would be rubbed off as fast as formed. A person who is troubled with this affection should wash the hair thoroughly with fine castile soap and rain-water three times a week, thoroughly removing all dandruff, brush-

ing the scalp gently with a fine brush; then apply a dressing consisting of equal parts of castor-oil and alcohol. We have found this remedy very efficient in a large number of cases.

Sleep.—A patient inquires: Why is it true that one hour's sleep before midnight is as good, or as refreshing, as two hours' after that time?

Ans.—The proposition is true only in a limited sense. The first few hours of sleep are more refreshing than the later hours, as it is more profound. Hence, if the person goes to bed before midnight, the proposition is true, but if he retires after, it is not true.

Two Meals a Day for Horses.—The question is asked: Do you recommend feeding horses but twice a day?

Ans.—We do not profess great profundity in wisdom about horses, but have been told by some persons who have tried the experiment that horses do quite as well on two meals a day as on three, provided they have plenty of water, and also provided that the meals are not too far apart. It would not be proper to feed a horse at five o'clock in the morning, and then work him all day and feed him nothing more till eight or nine o'clock at night. But we have no doubt but horses would do good work on two meals a day if taken at proper intervals. It should be recollected, however, that horses require a longer time to eat than human beings, as their food is coarse and requires much mastication.

Water as a Laxative.—An inquiry is made whether cold water or hot water is better for use as a laxative.

Ans.—A glass of cold water taken half an hour before breakfast is an excellent remedy for constipation of the bowels. In some cases, however, in which the digestion is slow, and the secreting power of the stomach deficient, a large quantity of cold water chills the stomach, and interferes with the digestive processes. Hot water is to be preferred in cases of extremely slow digestion.

Sleep.—An inquirer asks: What is the condition of the brain during sleep?

Ans.—Physiologists are not perfectly agreed as to the condition of the brain during sleep, but the general opinion is that during healthy sleep the brain contains less blood than when the individual is awake. It is unquestionably true, however, that persons often sleep when the brain is abnormally filled with blood. It is probable that sleep is occasioned by exhaustion of the brain, although there are instances in which, although there is great brain exhaustion, sleep is unobtainable.

Bad Breath.—The question is asked: What is the cause of bad breath?

Ans.—Bad breath is usually the result of dyspepsia, decayed teeth, or some form of nasal catarrh.

SCIENCE IN THE HOUSEHOLD.

CONDUCTED BY MRS. E. E. KELLOGG.

PARSNIPS.*Composition.*

| | |
|-----------------------------|------|
| Nitrogenous matter,..... | 1.1 |
| Starch, pectose, etc.,..... | 9.6 |
| Sugar, | 5.8 |
| Fat,..... | 0.5 |
| Mineral matter,..... | 1.0 |
| Water,..... | 82.0 |

Total nutritive value, 18 parts in 100.

History.—The common garden parsnip is derived by cultivation from the wild parsnip, indigenous to many parts of Europe and the north of Asia. It has been cultivated since Roman times. It is not only used for culinary purposes, but a wine, said to resemble malmsey, is made from it. In the north of Ireland a table beer is brewed, with the aid of hops, from its fermented product.

Structure and Digestibility.—As will be seen from the composition of this vegetable, it contains but a very small percentage of nutritive elements, so small, indeed, that one pound of parsnips would produce hardly one-fifth of an ounce of nitrogenous or muscle-forming material. The time required for its digestion varies from two and one-half to three and one-half hours.

General Rules for Preparation and Cooking.—Wash, and trim off any decayed portions, scrape well with a knife to remove the skins, and drop at once into cold water, to prevent discoloration. If, however, the parsnips are smooth-skinned, fresh, and too small to need dividing, they need only to be washed and scrubbed thoroughly before cooking, as the skins can be easily removed by rubbing with a clean towel.

In preparing them, reject any that are wilted, pithy, coarse, or stringy, as only fresh, healthy tubers are fit for food. Large parsnips should be divided, for if cooked whole, the outside is likely to become soft before the center is tender. They may be either split lengthwise, or sliced. Parsnips may be boiled, baked, or steamed, but like all other vegetables containing a large per cent of water, are preferable steamed or baked.

Time.—The appropriate length of time required for cooking young parsnips is about forty-five minutes; old parsnips require from one to two hours.

RECIPES FOR COOKING PARSNIPS.

Boiled Parsnips.—Clean, scrape, drop into boiling water, and cook until they can be easily

pierced with a fork. Only sufficient water to prevent burning should be used, and it should be all evaporated by the time the parsnips are tender. If any remains, drain the parsnips thoroughly, cut them in slices, and mash or serve with a white sauce, to which a little lemon juice may be added if desired.

Parsnips au Jus.—Wash, scrape, and divide the parsnips. Drop into boiling water, a little more than sufficient to cook them, and boil gently till thoroughly tender. There should be remaining of the liquor about one-half pint when the parsnips are done. Arrange the parsnips when tender on a pie plate or broad shallow pudding dish, not more than one layer deep; cover with the liquor, and bake in the oven, basting frequently with the liquor until it is all absorbed and the parsnips delicately browned. Serve at once.

Mashed Parsnips.—Wash and scrape the parsnips, dropping at once into cold water to prevent discoloration. Slice into thin pieces, and steam in a steamer over a kettle of boiling water, or bake whole in the oven, until perfectly tender. When done, mash until free from lumps, removing all hard or stringy portions, add salt to the taste and a few spoonfuls of sweet cream, and serve.

Stewed Parsnips with Celery.—Prepare, and steam or boil some nice parsnips until about half done. If boiled, drain thoroughly. Add salt if desired, and a tablespoonful of minced celery. Have some rich milk boiling hot, and turn over the parsnips; cover and stew fifteen or twenty minutes, or till perfectly tender.

Creamed Parsnips.—Bake or steam the parsnips until tender, slice, add salt if desired, and a cup of thin, sweet cream. Let them stew slowly until nearly dry, or if preferred just boil up once, and serve.

MOTHS.

THE destruction of moths is one of the greatest vexations which careful housekeepers have to contend with, and their depredations are not to be remedied after they have once made inroads. Houses heated by furnaces are especially predisposed to have moths, but every housekeeper must be on the watch for them, for from the time the windows begin to be left open in the spring the trouble begins. Heavy carpets sometimes do not require taking up every year, unless in constant use. Take out the

tacks from these, fold the carpets back, wash the floor in strong suds with a tablespoonful of borax dissolved in it. Sprinkle over with insect powder, or lay tobacco leaves along the edge, and retack. All moths can be kept away, and the eggs destroyed, by this means. Ingrain, or other carpets, after shaking, are brightened by sprinkling a pound of salt over the surface, and sweeping carefully and thoroughly. It is also an excellent plan to wipe off the carpet with borax water, using a thick flannel cloth, wrung tightly, taking care not to wet it, but only to dampen. Open the windows, and dry the carpet before replacing the furniture.

Other woollens, including blankets and wearing apparel, must be beaten and brushed and folded smoothly. Be careful to clean every spot with ammonia and water, not too strong, and a dark woolen cloth. Tie pieces of camphor gum into little bundles, and put one in each article. Wrap the article in newspaper, as printer's ink is a great preventive of moths, and sew them in strong sheeting bags, labeled, so that it will not be necessary to open them during the summer, except for use. This is a good way for those who do not possess cedar boxes, and the articles need have no other care, if every spot is treated as directed, and the garments are not left hanging in the closet too long before putting away for the season.—*Sel.*

Uses to Which Paper may be Put.—A layer of paper under a carpet is preferable to straw, which is sometimes used, and if the paper made for this purpose cannot be obtained, several layers of newspaper will do nearly as well. Papers spread between bed coverings will take the place of extra blankets. Dissolved in flour paste, newspapers make a useful filling for cracks in floors and elsewhere. Scraps of paper, wet and scattered over the floor when sweeping, will save the dust in the room as well as brighten the carpet. Bits of paper, with soap suds, are effectual in cleaning bottles, and are easily removed with the water. Greasy dishes and kettles if first rubbed with paper, wash much easier; the paper absorbs the grease, and is all the better for kindling the fire. A grease spot can often be taken out of a carpet or garment by placing two or three layers of paper over it, and putting a warm iron on the paper. The heat softens the grease, while the paper absorbs it, and by changing paper and iron occasionally all the grease will disappear. Soft newspaper or tissue paper is preferable to cloth for cleaning lamp chimneys, windows, mirrors, etc., as it leaves no lint; also for knives, spoons, and tinware after scouring; and a stove will not need blacking so often if now and then rubbed with paper. Paper in bread and cake tins, protects the loaf from burning, and insure its safe removal from the tin; by this help a tin with holes in it may be used. Cut in strips and curled with the scissors, writing paper makes a good filling for pillows, for hammocks, or the large pillows sometimes used to show off the elaborate "shams." Postal cards and thin pasteboard can be cut in strips for lamp lighters; newspapers for the same use are cut in strips and rolled.—*Anna Barrows, in Good Housekeeping.*

Canned Grape Juice.—Take grapes which are just right for eating. Wash the bunches in a colander, and when clean, strip the grapes from the stems, throwing out any that may be unripe or decayed. Put them into a granite-ware or porcelain kettle, allowing one part of water to three parts of fruit. No sugar is needed. When they boil, skim carefully; simmer slowly a few minutes, and strain. Re-heat to boiling, can immediately, and in the same manner as fruit. Be sure to fill the cans full, and remove all bubbles of air before sealing. Thus prepared, grape juice may be kept for almost any length of time, and makes a most refreshing beverage for the sick or well. If preferred, a large quantity of the grape juice prepared as above may be simmered very slowly for several hours, until it has become condensed to a syrup. The process should be slow, as rapid boiling will injure the flavor and color. When it has been reduced to about one-sixth its first bulk, it is thick enough, and may be bottled for future use. One tablespoonful of such syrup in a glass of cold water makes a delightful drink, and a good temperance substitute for wine.

To Wash Glass.—Cold water, in which a small quantity of soda has been dissolved, is the best preparation for washing tumblers, wine-glasses, etc. They should afterward be turned down to drain, and then polished with soft, dry cloth. The same applies to chandelier glasses. If the dust is much worked into ground glass, a soft nail-brush should be used, polishing afterward with a wash-leather. Potato parings, sometimes recommended, may scratch the glass. A wash-leather is the best thing for washing and drying looking-glasses.—*Sel.*

—When tins are blackened by fire, they should be scoured with soap, water, and fine sand.

—Spools sawn in two, and screwed on to the screen doors, make good handles for opening them.

—Soot falling on a carpet, if thickly covered with salt, may be brushed up without injury to the carpet.

—Nickel trimmings can be kept bright by rubbing them with a woolen cloth saturated with spirits of ammonia.

—Tar may be readily removed from the hands by rubbing with the outside of fresh orange or lemon peel, and wiping immediately. The volatile oils in the skins dissolve the tar, so that it can be wiped off.

—Tumblers, lamp chimneys, and other glass ware may be rendered much more durable and less liable to crack if subjected to the following simple process of annealing before using: Place such articles as it is desirable to preserve in this manner in a pot of cold water, add a small quantity of common salt, and allow the articles to boil well in this mixture for some time; then cool very slowly, the slower the cooling is the more

satisfactory will be the result. Glass treated in this way is said not to crack even if exposed to very sudden changes of temperature.

—To clean old lamp burners, wash and boil them in ashes and water, then rub them with oxalic acid, then dry and polish them with fine coal ashes, and they will be clean and bright. Wash and dry the wicks. Many times the burners are condemned when only the wicks are at fault.

—Says Mrs. Partington, "Many a fair home has been desiccated by poor cookin', and a man's table has been the rock ahead on which his happiness has split. A hard rock, too, sometimes, with bread and pastry you could throw through a stone wall and not hurt it. If a man's as pious as Beelzebub, his stomach can't stand eve ything."

—Do not allow scraps, sweepings, apple parings, bits of orange peel, nut shells, and various other odds and ends to accumulate in the kitchen wood box. The warmth of the air, together with the moisture given off by the wood, especially if it be wet, will serve to make of such garbage a fermenting decomposing mass, constantly sending forth the seeds of disease, and poisoning the surrounding air with germs that may develop with serious consequences. Wood boxes should be emptied and cleaned once a week.

Literary Notices.

HEADS AND FACES, HOW TO STUDY THEM: Published by the Fowler & Wells Co., 753 Broadway, New York. Price 40 cents.

This work is to be a manual for reading character as indicated by the appearance of the head and face. It will contain two hundred pages of reading matter, with two hundred illustrations.

THE BROOKLYN MAGAZINE, Brooklyn, N. Y. \$1.00 per annum, 10 cents per single copy.

With a notable September issue, *The Brooklyn Magazine* closes its second volume and its first year of publication. By a praiseworthy display of enterprise and literary excellence, it has achieved a deserved success. The range of subjects discussed is wide and liberal, while its list of contributors is as notable as those of many of its older contemporaries. The contents of the current number include a lengthy and excellent poem on "Niagara Falls" by Jasper Barnett Cowdin, and an excellent paper by Mr. Joseph C. Hendrix on "The Public Schools of Brooklyn." Mr. Hendrix writes forcibly and understandingly, and contributes views which every principal, teacher, and parent should read. Mr. Louis Zemansky closes his widely-read and enjoyable series of papers "Travels in Foreign Climes" by a graceful description of Naples, while Mrs. Henry Ward Beecher sustains the excellence of her "Home Department" by a strong advocacy of a closer attention on the part of

American housekeepers to the duties of servants, an article to be read with profit by every woman. The subjects of the Editor are the Grant memorial and Dr. Newman's funeral address.

THE PUGET SOUND SANITARIAN AND PROHIBITIONIST: Published at Seattle, W. T. Subscription price, \$1.00 per annum.

This is a live journal devoted to hygiene and temperance, and published monthly by the Woman's Christian Temperance Union. It is filled full of good things, and though especially designed for the temperance workers of W. T., is well worthy the perusal of all persons.

INEBRIISM, A PATHOLOGICAL AND PSYCHOLOGICAL STUDY, is the title of an excellent work recently published by Dr. T. L. Wright, member of the American Association for the Cure of Inebriates, the object of which, as the author states in his introductory, is to discover if possible the usual and most common causes of alcoholic inebriety, its pathological nature, and the laws which govern its inheritance.

For sale by the author. Bellefontaine, Ohio. Price \$1.25 post paid.

THE NORTH AMERICAN REVIEW, October issue, contains twenty-three articles by as many different contributors—among whom are an English Cardinal, an American Admiral, two American Major-Generals, two American ex-Ministers to European Courts, an American Artist, an N. Y. Assemblyman, an ex-United States Senator, the Mayor of New York, an ex-Governor of New York, two distinguished American Men of Letters, and a famous American Financier—Manning, Ammen, Ben. Butler, Fitz John Porter, Elihu B. Washburne, Wm. Waldorf Astor, (his first appearance in literature), J. B. Eustis, of Louisiana, Wm. R. Grace, of New York, Theodore Roosevelt, Horatio Seymour, E. P. Whipple, Charles T. Congdon, Dorman B. Eaton, and some others less known. There is also a very characteristic private letter from Gen. Grant to his father, written from Milliken's Bend, just two days before he started in the Vicksburgh Campaign. It is contributed by Col. Fred. Grant.

THE HOME HAND-BOOK OF DOMESTIC HYGIENE AND RATIONAL MEDICINE, written by J. H. Kellogg, M. D., 1624 pp., Health Pub. Co., Battle Creek, Mich.

The Farm and Fireside says of this work:—

Here is a complete medical library in one volume, written for the people, by one who has had abundant opportunity for observation and practice, and who has gathered and condensed into this work the latest investigations of our leading medical scientists. The whole book is exceedingly well written, and although we have seen numerous works of this kind, the one in hand is worth all the rest put together. It should be in every household in the land; for all parents owe it to their children that they teach them, along with other things, the laws of life and health which control their bodies, and which are so succinctly laid down in this book.

Publisher's Page.

The Sanitarium is enjoying a season of great prosperity. The glorious September weather with which we have been favored has contributed much to the pleasure and improvement of the recent patrons of the institution. The present number of patients is more than one-half greater than ever before at this season of the year, and is nearly as great as during the busiest portion of the summer season. Improvements are still in progress. The large new greenhouse is nearly completed, and a large supply of flowering and decorative plants, including a good assortment of tropical exotics, have been ordered from the East. The internal improvements of various sorts which have been in progress much of the time during the past year have been entirely completed, to the relief and satisfaction of both patrons and managers.

The editor had the pleasure of addressing an audience of about five hundred ladies at Jackson, Mich., a few days ago, on the subject of "Woman's Dress." The subject was illustrated by means of charts showing the correct form and the results of improper dress, together with a *papier-maché* manikin, showing the natural position of the various organs of the trunk. After the lecture, the following pledge was circulated, and was signed by quite a large proportion of the audience:—

"Recognizing the importance relative to health of proper dress, and the serious evils which arise from the wearing of such clothing as overburdens any portion of the body, which restricts its freedom of movement, or interferes with important vital functions, we hereby pledge ourselves to conform in our dress to the principles of health, and to discard such articles and modes of dress as by their superfluity, or their want of adaption to the wants of the body, are obnoxious to health. And we do also pledge ourselves to avoid extravagance, and to cultivate in ourselves, and encourage in others, Plainness, Economy, and Simplicity in Dress."

The lecture was phonographically reported, and an abstract will be printed in some future number of the journal.

There is now being issued from the office of this journal a series of three-page health tracts, which are issued at the very moderate sum of three thousand pages for \$1.00. This is the cheapest literature we have ever heard of. The price charged is scarcely more than sufficient to pay for the paper used, but the tracts are published at this low rate for the purpose of encouraging missionary effort in this direction. The tracts are not furnished in less than \$1.00 lots. Address, for sample copies, HEALTH PUBLISHING CO., Battle Creek, Mich.

The Annual Meeting of the "National Woman's Christian Temperance Union" will be held at Philadelphia, Oct. 20 to Nov. 2. This will undoubtedly be the largest meeting of the organization ever held.

The rapid growth of the W. C. T. U., and the work accomplished by it in laying the foundation for a thorough-going temperance reform, are among the marvels of the age. Indeed, this movement from its beginning in the Woman's Crusade to its present stage of development can scarcely be said to have had a parallel in any age. It is safe to say that the W. C. T. U. has accomplished more in temperance reform in the last ten years than all the other temperance organizations have accomplished in a generation; and the wonderful work of this army of indefatigable philanthropists is evidently still in its infancy. Its broad-minded leaders are reaching out into every department of society where reform is needed, offering a helping hand to those who wish to climb upward,

and endeavoring to incite ennobling aspirations in those whose instincts have become depraved. Embracing as it does workers of every creed and every phase of religious faith,—all who are willing to work, as their motto says, "For God, and Home, and Native Land," this is certainly one of the most noble philanthropies of modern times, and one which should have the thorough sympathy and support of all who love God and their fellowmen.

At a recent meeting of the MICHIGAN HEALTH AND TEMPERANCE SOCIETY, the secretary reported that seven new clubs had been organized during the year, and several clubs which were in an inactive condition had been revived. It is expected that during the year to come, a competent organizer will be constantly in the field, and that the interest in the work of this organization will be greatly increased.

Good Agents are wanted to introduce the "HOME HAND-BOOK OF DOMESTIC HYGIENE AND RATIONAL MEDICINE" in all parts of the United States. In its new form the work is a very attractive as well as useful volume, and in the hands of competent agents, especially those who are interested in hygiene, the work sells rapidly. One agent recently took thirty-nine orders in a single week. Agents are allowed good commissions. For circulars and further particulars, address HEALTH PUBLISHING CO., Battle Creek, Mich.

We would call the attention of our readers to the list of publications to be found on another page. The list includes works of great value to all who are interested in the study of hygiene in its different phases, and all of them ought to be in every library in the land. Any of them will be sent postpaid on receipt of price to any part of the United States or Canada. These publications can also be obtained at the following places: PACIFIC PRESS, Oakland, Cal.; INTERNATIONAL TRACT SOCIETY, South Lancaster, Mass.; INTERNATIONAL TRACT SOCIETY, 72 Henenge St., Great Grimsby, England; WM. ARNOLD, 46 Highett St., Richmond, Melbourne, Australia.

Agents Wanted.—One thousand agents are wanted to canvass for GOOD HEALTH during the next four months. The journal ought to be introduced into every community. A competent person can scarcely fail to meet with success in presenting this journal. Its popularity has long placed it in the foremost ranks of health journals in this country, and any one who will engage in its circulation is not only working in his own interest, but is doing a good work for humanity. A liberal commission is paid to agents for subscriptions, and with the valuable premium offered every new subscriber, success is certain to attend a persevering and well-directed effort.

The valuable book which goes as a premium with GOOD HEALTH, has been translated into both the Danish and Swedish languages. It has rapidly passed through four editions in each of these Scandinavian dialects.

WHAT TO WEAR FOR HEALTH.

THE most eminent physicians declare what every lady knows to be true, that at least nine-tenths of all the maladies peculiar to their sex may be fairly attributed to unhealthful dressing. In order to supply the growing demand for healthful clothing for women and children, we have made arrangements which enable us to furnish healthful and tasty clothing of every description, from a stocking-supporter to a full suit of underclothing, with patterns for healthful dresses. For illustrated circular,

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