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BIOGRAPHICAL HEALTH STUDIES.

BY F. L. OSWALD, M. D.,

Author of "Physical Education," "The Bible of Nature," etc.

22. Abraham Bernheim.

SINCE the day when John Howard, the "Angel of the Prisons," succumbed to the jail fever of a Russian bastile, few obituaries have been read with more sincere regret than that of Abraham Bernheim, the young philanthropist and social reformer, who for the last ten years had devoted his leisure and his fortune to historical studies and the promotion of projects for improving the condition of the poor. Like Baron Hirsch and Rabbi Adler, he was descended from a race that has preserved its "gift of longevity" through long centuries of tribulation. Health-destroying vices had no charm for a man whose chief luxury was the gratification of his instinct of benevolence — a penchant which in his case amounted almost to a passion. From personal experience he had never known the meaning of want, nevertheless, he died before the completion of his thirty-first year.

Had Providence forsaken its chosen agent? His last disease had no direct connection with the cause of Bernheim's death, though in pursuit of his mission, he visited the tenements of the New York slums with a heroic disregard of the risk of contagion, and in the East End of London even quizzed his companions on their scrupulous attention to fumigation and other precautionary measures.

"So Abe Bernheim's dead," mused a long-headed old Pittsburgh Hebrew of my acquaintance. "He was never very stout; but I can't help thinking he would have lived to a good old age like his uncles, if he had only stuck to business."

"You do not mean that indoor work could have kept him alive, do you?"

The old man shook his head, but his remark evidently implied a belief that the premature death of the plucky reformer had something to do with his departure from the routine-life of his ancestors. Strange analogies rise in one's memory in pondering the possible correctness of that explanation. Frogs that had remained imprisoned in the cleft of an old oak-tree till they developed a talent for dispensing with sunlight, soon perished on being exposed to the open air; and in 1809, when the French invaders liberated the prisoners of the Spanish Inquisition, few of their protégés survived the first year of their new-gained freedom. Their pious countrymen attributed their fate to the ill luck attached to all transactions of the sacrilegious foreigners, but there is really such a thing as a permanent perversion of the vital functions, and the testimony of commissioner Mc Gregor, of Singapore, seems to leave no doubt that a sudden change in the regulation granting prisoners a small allowance of opium led to the death of at least six of the subjects of the imprudent experiment. Opiates, of course, have no direct nutritive value, any more than coffee or alcohol, but the dependence upon their stimulating influence may become a second nature too powerful to resist without the aid of potent moral agencies, and combined with the despondency of a prejudiced patient, the reaction of the stimulant-fever may really prove as fatal as desperate homesickness. The military

surgeons of the Kamchatka border-forts have had prisoners die on their hands because the commanding officer had refused them a supply of *agaricus maculatus*, or fly toadstool.

A much better stimulant was the pursuit of wealth that consoled the medieval Hebrews for countless afflictions of their Pariah existence. They were penned up in filthy back alleys, often so narrow that even in summer no ray of sunlight reached the gutters before the noonday hour. After dark, these alleys were closed with a chain, and truants, caught outside of their ghettos in night-time, might be glad if they got off with the loss of an ear. Only a limited number of Hebrews were permitted to marry. In many communities they had to furnish a scapegoat to be thrashed in public on the principal holidays of the Christian church. On the bridge connecting the city of Frankfort with the hamlet of Sachsenhausen there was a picture of a female hog nursing a litter of hook-nosed youngsters, and once a year that masterpiece of refined art had to be revarnished at the expense of the local Israelites. Dissenters from the Trinitarian doctrine were refused admittance to State universities, they could not own grain farms or mines, they were denied the right to practice medicine or law or bear witness against a Christian fellow-citizen, but they were still permitted to traffic, and on that one chance of independence, consequently, concentrated their energies with almost invariable success. "There is no excuse for financial distress," says Voltaire, "if you have only means sufficient to invest a few stakes in profitable securities. Watch the fluctuations of the stock market; the most stupid of mankind gain there by paying intense attention to it."

Schopenhauer calls avarice the "love of life *in abstracto*." "Money," he says, "represents the possibility of numberless enjoyments, and when driven out of every other stronghold, the love of earthly happiness takes refuge in a stout coin-box, as in its last citadel. The hoarding instinct, as it were, is the quintessence of all other passions."

For nearly a thousand years the children of Israel fed the vital flame with that quintessence as with a Brown-Sequard elixir of life, and the vigor of their physical and moral organism became largely dependent upon the stimulus of financial success, or, more properly speaking, the *exciting pursuit* of wealth, as distinct from its secured possession. "Make Napoleon abdicate the crown of France," said a wag at the congress of Vienna, "and let him have half the Island of Corsica, where his countrymen will make allowance for his foibles."

"Yes, but why only half the island?"

"So he can divert himself conquering the other half."

The founder of the house of Rothschild enjoyed a patriarchal longevity, but the occupants of the finished edifice seem to hold their tenure on more and more precarious terms; they may emblazon a gate or double-gild a chandelier; but the exciting part of the job has been finished before their time. It is in vain that they try to supply the deficiency with other stimulants, hunting, art-culture, or amateur politics. A coffee-drinker may drop his tonic to become an opium-eater, but not *vice versa*. Chief Mammon declines to yield to minor imps.

In other words, Hebrews renouncing the exciting pursuit of treasure-hunting seem liable to forfeit their claims to longevity. Frederick Gerstaecker, the fearless traveler, died in his prime; Spinoza, the "God-intoxicated" recluse, attained an age of only forty-four years; the fervid patriot Boerne, like Moses Mendelssohn and the Orientalist Marcus, died when his talents had just begun to compel general recognition; Mendelssohn Bartholdy, the rival of Beethoven, did not live long enough to enjoy the preparations for the celebration of his fortieth birthday; Heinrich Heine, the wooer of the Muses, burnt out his oil of life in fifty-six years, while another Heine (the half-brother of the famous poet), who made literature a medium of financial speculations, pursued the race of wealth in that form nearly to the end of his eightieth year.

Abraham Bernheim's hobby was the amelioration of the physical and intellectual condition of the working classes, and his great wealth seemed to guarantee the success of his enterprises, but like Joseph the Second, he was more than once forced to acknowledge that "the most disheartening task on earth is the attempt to liberate captives who hug their chains," and his experience in the reform of the New York tenement system was graphically illustrated in one of poor Joe Keppler's last cartoons: On one side a row of pleasant garden-cottages, all vacant, and vainly displaying their rent tablets on the most liberal terms; on the other side, a pile of monstrous rookeries, crowded from cellar to attic, and surrounded by garbage-heaps, where troops of ragged youngsters play with broken beer bottles and dead cats.

Lecture on the perils of vitiated air, and you will run no risk from overcrowded halls; preach reform on the home-mission plan, and they will attribute your zeal to political trick purposes; expel the victims of pestiferous slums, and they will return

like sheep rushing back into a burning stable. "What shall we do to be saved?" is a hard question to answer, but less hard than the problem of saving others against their will.

A few years ago a London friend took the young American reformer to Toynbee Hall, where the children of the poor, and such of their parents as can be coaxed to attend, are educated by object lessons: free exhibitions of paintings and collections of miscellaneous curios. On his return, Bernheim determined to try a similar plan in New York City. His enthusiasm secured the cooperation of the "Educational Alliance" and the "University Settlement Society;" a large hall was rented on the lower East Side, and appeals addressed to a considerable number of American and foreign artists. Among the painters who reported were many who exacted a guarantee for the security of their contributions, and their list included such names as Claude Monet, Josef Israels, Detaille, Albert Bierstadt, Frederick Remington, and W. A. Rogers.

The exhibition was also extensively advertised; but after all that trouble the enterprise threatened to prove a dead failure. "The East Side labor leaders," says a New York press correspondent, "conceived the idea that the whole scheme was a cleverly disguised trick on the part of certain 'Mugwumps' to get a grip on the district in the ante-election months." Others there were who ascribed the exhibition to the seekers after notoriety, whose real sympathy with the poor could be gauged by their traditional view of the slums as a place where curious specimens of human depravity were to be found, each in its appropriate cell, ready for inspection by the university pathologist. And finally a prominent socialist, representative of his class, bluntly refused his cooperation and advised his friends to have nothing so do with the exhibitors. "The robbed and the robbers cannot sincerely sympathize," he said, "especially when the robber comes asking the robbed to accept as a favor a few crumbs from the feast which is the creation of the latter. The labor movement is a class movement and nothing should be done or permitted to weaken the class spirit."

It must be remembered that Abraham Bernheim was a "plutocrat" *i. e.*, guilty of the crime of owning railway stock and real estate. The circumstance of his habit to devote the larger part of his income to charitable purposes could only mitigate the heinousness of his offense. In order to prove the sincerity of his contrition to the satisfaction of Herr Most & Co., he ought to have helped them to pull the upper classes down, instead of persisting in his attempt to uplift the poorer. The results of the East Side Mission were heart-sickening in the literal physical sense, and a revision of the ward-pasha's verdict could be brought about only by Bernheim's plan to appeal to the gambling instinct of the masses. With the permission of the exhibitors it was announced that each visitor would be allowed a vote on the comparative merit of the pictures and that a plurality of these votes would decide the verdict of the prize-committee.

Thus encouraged, a few patrons of the free museum did record their criticism; a spirit of rivalry was evolved; would-be connoisseurs got their friends and neighbors to endorse their views, and the managers could report a steady increase of attendance — up to the day when their votes were counted.

The outcome of the slum crusade was even more discouraging. Realizing the hopelessness of legislative reforms under the administration of boodle rings, Bernheim used all his influence for the overthrow of the corruptionists, and even before the triumphant campaign of 1894 frightened the demagogues into various concessions that led to the appointment of a Tenement-House Commission, with ample powers to redress grievances and enforce compliance with neglected regulations. But once more the real difficulty began with the task of forcing assistance upon those who declined to pay its price by consenting to a change of their routine habits, and did not hesitate to question the motives of their would-be benefactors.

Tenement Reformer.— "Would you please sign this memorandum, my friend, so we can make out a case against the proprietors of this block? In its present condition it is really not fit for a habitation of human beings; just look at all these rooms with nothing but transom windows; no possibility of direct ventilation. Consider the sanitary interests of your own family: you spend more on doctor's bills than you save on rent, if you do save anything that way; just consider: only one square foot of effective windows to a thousand cubic feet of room space, when six ought to be the minimum."

Slum Rat.— "Sign? what' yer trying to get onto me? Ye had better mind your own business. What' ye take me for, anyhow? (*Aside*) Wants to get a job for a glazier, I suppose. Six new windows,— the idea; a person would catch his death of cold. Or else that fellow is a drummer for a coal dealer. Wants to freeze us out; he would n't care shucks if we cough out our livers, as long as he gets his commission, and then lets his boss take it out with his cutthroat prices. Ain't

these chaps getting fine-haired? Sign his contract? I'd see him in Halifax before I bite on that bait. Somebody ought to fetch him one over the head with a potato masher to make that kind of fakers a little more careful."

Slum Rat No. 2.—"Right ye are; you don't catch these slick-haired sneaks spending a cent of their own money to help a poor man."

But suppose the S. S. does make a proposition of that sort, offering to defray the costs of transportation, and furnish a suburban cottage at his own expense if the tenement coolies will only consent to cancel that contract with their present Shylock company of landlords? What of that? The modifications of the case will only change the basis of suspicion. Sweetwater Park, with model cottages at four dollars a month? Some land scheme, of course, —wants to bribe a few poor fellows to take the vanguard risks of a new colony, and then raise his terms of rent after tying them hand and foot by some cunning proviso of their lease. And then the location of the new suburb would really not make it worth a man's while to take a cottage of that sort for a gift. Too near the woods; might give one a touch of the rheumatism. Wells with windlass buckets where you have to wrench your arms out of joint to get a drop of water, instead of just turning the handle of a hydrant. The snow out there gets twice as deep as in the city, they say. Too cold to suit a poor man; no ten-story buildings to break the force of the wind. And nearly a twenty minutes' ride before you can reach a decent market. That new grocer's prices are so low that his stuff can't be good for much. Probably some decoy sharper in the pay of the speculators.

From sorrows of that kind Abe Bernheim sought relief in historical studies, and lectures on the political history of the United States; but in that field, too, he encountered a good deal of unexpected opposition, and had to content himself with the consciousness of having served the cause of truth, as he had served the cause of mercy, to the best of his ability. I met him once in the *aula* of Columbia College, and was struck by his resemblance to a young Syrian exile, a Dr. Arbely, who had settled in Maryville, Tennessee, as a refugee from the race-riots of Damascus, and eventually died in Los Angeles, California, having learned from bitter experience that race-prejudices are not limited to the east shores of the Mediterranean. The same dark eyes, weirdly and spiritually bright, the same habit of touching the hands of his interviewers in trying to magnetize them into *rapport* with his controversial standpoints. Persons of that type can identify their personal interests with those of a worthy cause and disregard sacrifices in view of a high aim, but are apt to feel disappointments all the more keenly.

Bernheim's trips to Europe did not help to remedy his nervous complaints, and among the causes of heart disease, Sir Benjamin Ward Richardson, in his recent contribution to the *North American Review*, ought to have included sea-sickness, aggravated by sultry weather and ill-ventilated dormitories. Only a few weeks ago Arthur Brooks, D. D., the brother of stout Bishop Brooks, set sail for Europe on a health-seeking trip, but died on the return voyage from the effects of the intensely hot weather during the last week of July. The tide of the same fire-wave carried off the soul of the young New York philanthropist.

"If he had only stuck to business," said my Pittsburgh friend, and it is not impossible that financial speculations would have sustained his vital energies with the stimulant of that invariable success that enabled the Duke of Wellington to sign his pension receipt on his eighty-third birthday, and edify Parliament by his speeches for nearly thirty years after the day when two Spanish travelers inscribed the rocks of St. Helena with the epitaph of his rival: —

"A light unequaled was extinguished here."

The question remains if the length of a man's life can be made the only measure of its value. "*Notre general a mille ans*," said the French soldier, when Bonaparte had compelled the capitulation of Milan, and if helpfulness is a man's fittest vocation, it cannot be denied that Abraham Bernheim "stuck to business" pretty steadily, and somehow contrived to make his work its own sufficient reward.

(To be continued.)

EFFECTS OF TOBACCO UPON THE STOMACH. — M. Lyon, an eminent French physician, has recently published in the *Union Medicale*, an account of careful researches which he has carried out respecting the effects of tobacco upon the stomach. He finds that tobacco lessens the contractility of the muscles which partly compose the walls of the stomach, thus producing indigestion and dilatation. This is an important addition to the charges which medical men have brought against tobacco.

FRUIT AS A FOOD AND MEDICINE.*

BY HARRY BENJAFIELD, M. D.

And Eve saw that the tree was good for food, and that it was a delight to the eyes.— *Genesis.*
Stay me with raisins, comfort me with apples.— *Solomon.*

SUCH was the opinion of people who lived six thousand years ago, and all down through the succeeding ages poets have sung the praises of the luscious grape and peach, and painters have sought to outvie one another in depicting the attractions of the apple and plum, and away deep down below all this we see throughout the whole animal creation a developed instinct which teaches all to long after these beautiful fruits. Is this instinct wrong? Is Nature a fool thus to make her creatures voice their needs? When we see the whole insect family swarming over and voraciously devouring our choicest fruits, shall we say that they do not know what is good for them? When we see pigs, horses, cows, and sheep breaking down our fences, need we ask how they learned to love fruit? Ay, more, note the baby in arms who screams for the rosy apple, and bites away at it even with toothless gums, and as the baby grows into the boy how he will defy canes, and even police, so that he can get what he loves and longs for. The Creator is so anxious that this very necessary food shall be eaten by his creatures that he makes it beautiful to look upon, sweet and attractive in smell, and gives to it such varieties of flavors that the most fastidious can be satisfied. And yet in spite of all this the great mass of the people look upon fruit as a luxury upon which they can only spend odd pennies for the amusement of their children. Many parents will more readily spend money on injurious or even poisonous sweets than they will on good, healthful fruit, and fashionable society will spend pounds on cakes, wines, and brandies, while they spend as many shillings on the very thing they need to keep them healthy — fruit. And as for the amount of drugs swallowed which should be replaced in great measure by fruit, it is beyond my powers to calculate. Millions upon millions of pounds are spent annually upon mercurial and other purgatives, most of which would be quite unnecessary if the people would but look upon fruit as a necessary article of diet. The fruit grower of the future must try to so educate the public mind that this state of things will be altered. The man who makes sweets does not make them and do nothing to induce the public to buy. No; first he puts them up in all sorts of tempting boxes or packages, then he pushes the sale in various ways. The men who make beers, brandies, etc., not only do this, but they go further, they provide all kind of places where they shall be taken, they provide the gin palace with all its attractions of club rooms, billiards, daily papers, besides plenty of pretty girls to wait on their customers. Why should we not have fruit palaces where, at reasonable prices, people could get the choicest fruit at any hour of the day?

Eve is said to have seen that fruit was good for food. Every generation since has indorsed her opinion, and now perhaps more than ever before the world is waking up to see how good a food it really is. Good ripe fruit contains a large amount of sugar in a very easily digestible form. This sugar forms a light nourishment, which, in conjunction with bread, rice, etc., forms a food especially suitable for these warm colonies;* and when eaten with, say, milk or eggs, the whole forms the most perfect and easily digestible food imaginable. For stomachs capable of digesting it, fruit eaten with pastry forms a very perfect nourishment, but I prefer my cooked fruit covered with rice and milk or custard. I received a book lately written by a medical man advising people to live entirely on fruits and nuts. I am not prepared to go so far — by the way, he allowed some meat to be taken with it — for, although I look upon fruit as an excellent food, yet I look upon it more as a necessary adjunct than as perfect food of itself. Why for ages have people eaten apple sauce with their roast goose and sucking pig? — Simply because the acids and pectose in the fruit assist in digesting the fats so abundant in this kind of food. For the same reason at the end of a heavy dinner we eat our cooked fruits, and when we want their digestive action, even more developed, we take them after dinner in their natural, uncooked state as a dessert. In the past ages instinct has taught men to do this; to-day science tells them why they did it, and this same science tells us that fruit should be eaten as an aid to digestion of other foods much more than it is now. Cultivated fruits, such as apples, pears, cherries, strawberries, grapes,

* From advance sheets of a lecture delivered before the Australasian Federated Fruit-growers' Association, at the Tasmanian Exhibition Building, Queen's Domain, Hobart, April 26, 1895.

* Australasia.

etc., contain on analysis very similar proportions of the same ingredients, which are about eight per cent. of grape sugar, three per cent of pectose, one per cent of malic and other acids, and one per cent of flesh-forming albuminoids, with over eighty per cent of water. Digestion depends upon the action of pepsin in the stomach upon the food, which is greatly aided by the acids of the stomach. Fats are digested by these acids and the bile from the liver. Now, the acids and pectose in fruit peculiarly assist the acids of the stomach. Only lately even royalty has been taking lemon juice in tea instead of sugar, and lemon juice has been prescribed largely by physicians to help weak digestion, simply because these acids exist very abundantly in the lemon.

Another great action of fruit in the body is its — shall I call it — antiscorbutic action. It keeps the body in a healthy condition. When out on a long voyage where fruit is scarce, how one longs for it! Those who have been without it for an extended time long for it until even in their dreams they picture the fruit their system so badly needs. The following case will illustrate my meaning: A ship's crew had any amount of fresh meat, new bread, tea, coffee, etc., aboard, but no fruit nor vegetables. As days went by the men grew haggard, breathless, and weak, with violent, tearing rheumatic pains in the joints. Then the gums grew spongy, the blood broke through its veins, and the whole system was demoralized and dying. In short, they were dying of scurvy. A fruit ship passing sent aboard a good supply of oranges and lemons, which were greedily eaten by the sufferers. Mark the result: though they still went on eating the same food, the addition of fruit to their diet made all the difference between life and death. In a few days their gums began to heal, the blood became healthy, natural color came into their faces, and strength came to the limbs so lately racked with pain. This is, perhaps, an extreme illustration, but I am satisfied that in a less degree the want of fruit is responsible for much of the illness in the world. When a student I remember sitting beside a leading London surgeon as an unhealthy child was brought in suffering from a scrofulous-looking rash over the face. Turning to us he exclaimed, "That is a rash from eating lollies." And many times since have I had occasion to remember his teaching, as I have seen it verified. Good fruit clears the blood and prevents this sort of thing. The lemon-juice cure for rheumatism is founded on scientific facts, and having suffered myself from acute gout for the last fifteen years, I have proved over and over again the advantages which are obtained from eating fruit. Garrod, the great London authority on gout, advises his patients to take oranges, lemons, strawberries, grapes, apples, pears, etc. Tardieu, the great French authority, maintains that the salts of potash found so plentifully in fruits are the chief agents in purifying the blood from these rheumatic and gouty poisons.

Perhaps in our unnatural, civilized society, sluggish action of the bowels and liver is responsible for more actual misery than any other ailment. Headache, indigestion, constipation, hemorrhoids, and a generally miserable condition, are but too often the experience of the sufferer, and to overcome it about half the drugs in the world are given in all sorts of compounds. Let the man of drugs go aboard that ship in mid-ocean, with its crew suffering from all these ailments; let the man with his artificially made fruit salts have his trial at their bowels and liver; let the man of mercury and podophyllin, and all the so-called liver doctors try their best; call in the tribe of tonics, and give iron, quinine, arsenic, strychnia, and all the rest of the family; then try your stomachics for his digestion, but in spite of all of these the scurvy fiend will sit aloft and laugh you to scorn. In fact, all these drugs have been tried over and over again, and Dr. Buzzard, perhaps the greatest authority in the world, tells us they have all proved miserable failures. But bring in your fruit and the whole scene changes. Cannot we show the world that what is applicable to these men in their extreme condition is more or less applicable to the millions of sufferers on land who now persist in looking upon fruit as a thing they can very well do without? Dr. Buzzard advises the scorbutic to take fruit morning, noon, and night. "Fresh lemon juice in the form of lemonade is to be his ordinary drink; the existence of diarrhea should be no reason for withholding it. Give oranges, lemons, apples, potatoes, cabbage, salads," and if this advice is good for those aboard, and there is no doubt about that, it is equally good for the millions who are spending millions annually in drugs which will never cure them.

The first symptoms of scurvy are a change in the color of the skin, which becomes sallow or of a greenish tint. Then follows an aversion to all exercise. Bloodshot eyes, weak heart, bad digestion, and constipation follow. Dr. Ballard says many of the most serious and fatal cases of scurvy he has seen have only presented as symptoms the pallid face, general listlessness, and bloodshot eyes. If we go through the back streets of our large towns, how many pallid-faced, listless looking people and children swarm

around us, and they have, as a rule, plenty of food. Within the last few weeks two of my own children have given me a good example of what fruit will do. Two months ago I decided to let these two boys, aged six and eight, go to my farm among the apple pickers. They were not actually ill when they went out, neither had they been at all shut up, but they were pale looking, would not eat their food, etc. During the last two months they make their boast they eat a dozen apples a day each, and as soon as they began eating these apples, their appetite for other foods about doubled, and during the eight weeks they have grown stout and robust, skin clear and healthy, with the glow of health on their cheeks, and bodily strength equal to any amount of exertion.

As a medicine, I look upon fruit as a most valuable ally. As previously shown, when the body is in that breaking-up condition known as scurvy, the whole medical profession look upon fruit and fresh vegetables as the one and only known remedy. I believe the day will come when science will use fruit very much more largely than it does now in the treatment of many of the every-day ailments. I have shown how it aids digestion. Observations in scurvy prove that it exerts a very powerful influence on the blood. But "the blood is the life;" poor blood means poor spirits, poor strength, poor breath, and poor circulation. Impure blood means gout, rheumatism, skin diseases, rickets, and other troubles. As it is proved that fruit will purify and improve the quality of the blood, it must follow that fruit is both food and medicine combined. In fevers I use grapes and strawberries, giving them to my patients in small but frequent doses — oranges and baked apples, if the others are not obtainable. For rheumatism, plenty of lemons are invaluable. White girls with miserable, pallid complexions want a quart of strawberries a day; where these are not obtainable, bananas, which contain much iron, are a good substitute. Probably, of all fruits, the apple stands unrivaled for general purposes in the household; either raw or cooked it can be taken by nearly everybody, and it contains similar properties to the other more delicate fruits. To my mind the pear is more easily digested than the apple, and for eating uncooked is superior to it. In our climate we can have good dessert pears nine months in the year, and their culture should be much increased.

Dried fruits are now occupying more attention than perhaps they have ever done before. It has been proved in a large way by giving troops dried vegetables and fruits that the attack of scurvy could be warded off, but in curing scurvy they were nowhere alongside fresh ones. Still it teaches us that dried fruits should be used when fresh cannot be obtained. If soaked for a few hours before cooking, they make a capital substitute for fresh fruit, and they come cheaper to the consumer. I wonder that miners, sailors, and others do not use dried fruits very largely.

For preserving fruit I look upon bottling in glass bottles as the coming thing. Not by the use of chemicals, such as salicylic and boracic acids, and the various preservatives made from them, but simply by protecting it after cooking from the fermentative germs in the atmosphere. It keeps for years, turns out even more palatable than green fruit, is equally digestible, and contains all the virtues of freshly cooked fruit. When bottles are made in Australia at a cheap rate this will be a great industry. Canned fruit is not so good; the acid of the fruit dissolves up tin and lead from the tin, and I have seen very serious cases of illness as a result. Besides, fruit should be sold much cheaper in bottles than in tins, as the bottle can be returned and used again.

Jams made from nice fresh fruit, and put up in glass or ware, make a very good article of diet, but much of the jams of commerce should be used as food for pigs. Jams act on tin and lead very much like tart fruits, but the acid in them is greatly neutralized by the sugar. Still, I have seen the outside of the jam in a tin quite discolored.

Solomon said, "Stay me with raisins, comfort me with apples," so great and wise kings six thousand years ago wished to be fed with dried fruit and apples. In this highly enlightened age it is nothing to our credit that we pay less attention to our diet than these old patriarchs did. They thought more of their vineyards than they did of their cattle. When Moses sent the spies into Canaan, they were told to bring back samples of the fruit it bore, and they brought back not a fat bullock but a very fat bunch of grapes. A medical writer has recently been maintaining that bread and other starchy foods, containing as hey do large quantities of lime, are responsible, especially in aged people, for many of the diseases from which we suffer, such as apoplexy, rheumatic gout, etc., and urges that fruit should be taken freely instead, to counteract these limy effects. One of the first symptoms, when people are deprived of fruit and vegetables, is very severe pain in the joints like rheumatism, and death from failure of the heart's action. Whether he is right about this lime may not be proved, but there is no doubt but

lime exists too largely in the blood-vessels in these diseases, and if fruit were eaten regularly, it would do much to prevent it. Science to-day tells us that we may live under the most beautiful conditions, we may feast on bread, meat, eggs, rice, cocoa, oatmeal, and such like foods for a short time, but unless we take fruits or fresh vegetables — fruits being he best — we shall get listless, with leaden face, etc., until we die in a few months at the longest; and it follows that if we would keep ourselves and our children with clear skins, bright intellects, good digestion, rich colored, healthy blood, and strength for work, we must regularly take fruit and vegetables, and look upon them as actually more necessary for the support of good health than any other article of diet.

THE AWFUL HEREDITY OF DRUNKENNESS.

Dr. M. Legrain, of Paris, who is physician-in-chief to a Parisian asylum for the insane, and the author of several previous works on different phases of the drink evil, has lately published a work en titled, "Dégénérescence Sociale et Alcoholisme." This work is divided into two parts. In the first he treats of the posterity of drinkers; and in the second, he speaks of the prevention and diminution of alcoholism. The whole of the first part of the work is written to prove that the descendants of chronic drinkers are very seriously menaced with the same vice.

This opinion seems to have been held by good observers even in ancient Greece, and the Biblical expression, of the sins of the parents descending to the third and fourth generation, is in unison with the facts observed by Dr. Legrain. He finds from cases seen in his wards, and from the examination of these successive generations, that alcoholism entails the most terrible evils on children. As to the first generation from the drunken parent, he gives the cases of 215 parents with 518 of their children, who are all affected in their nervous system or general health by the vices of the parents. These unfortunates were found to be either degenerated, or affected with convulsions, or addicted to drunkenness; or, lastly, prone to die of phthisis or scrofula.

In the second generation, 98 observations represent a total of 294 persons. In 54 of these families, mental weakness and idiocy were noted, with almost entire loss of mental sense, and often danger to their neighbors. Deafness, strabismus, congenital hernia, and hydrocephalus were noted, and a tendency to marriage with equally degraded partners. Numbers of abortions and early deaths among the posterity of drunkards were noted by our author. "The drunkard kills his children," says Dr. Legrain. In 819 births, there were 174 abortions, dead births, or infantile deaths, occurring among the posterity of drunkards. The portrait of the descendant of the drunkard is rapidly sketched as follows: He is degenerate, feeble, and epileptic or insane.

The conclusion is that alcohol should be considered as a cause of degeneration for the individual and the race; as a cause of depopulation; as a danger to society, and as a source of social expense, if the great cost of the insane be considered. He sums up his views in three aphorisms: —

1. When both parents drink, there exists an irresistible tendency to drink in the children.

2. Absinthe drinking in parents is an almost certain cause of epilepsy in the children.

3. The union of epilepsy and absinthe drinking in the parents produces (without fail) epilepsy in the children.

Finally, as far as Dr. Legrain's observations, 17 in number, go, he finds that in the third generation of drunkards, the race is almost exhausted. All the 17 cases he cites were degenerate types, weak in mind, imbeciles, or idiots. Some were criminals and vagabonds, some epileptic, and others scrofulous or greatly affected in health, and useless.

A family history is given, where the grandfather was a drunkard and libertine, and the grandmother had a tendency to melancholy. They became the parents of three children, one of whom was weakly, another, tuberculous, and the third also of delicate health. The third, a woman, married a drunken and dissipated man, and this union resulted in nine unfortunate children, seven of them having suffered from convulsions, meningitis, and epilepsy; the eighth was born prematurely, and the ninth weak and vicious.

In another case a drunkard was the father of a daughter who married an inveterate drunkard. From this union sprung twelve children, of whom five died in infancy of convulsions, and all the rest either succumbed, or became drunkards and vagabonds, or were affected with some disease of the nerves.

About one fifth of the 761 cases of the posterity of drunkards, according to the notes of Dr. Legrain,

were affected with some form of insanity. Such persons are not only useless, but dangerous, and surely society must be protected against them. Without mentioning the dangers to individuals, such children become the inmates of idiot asylums or prisons. As to epilepsy, it has long been looked on as the effect of alcohol; and is especially dangerous in that there are few diseases so certainly hereditary. Hence, according to our author, clinical observations tell us that one or two generations of alcoholians are enough to destroy the individual and the race, by means of diseases of the nerves, convulsions, epilepsy, and insanity. The accidents of hereditary alcoholism produce themselves early; in infancy and even in the forties, the hereditary alcoholic is marked, and clearly shows the marks of his origin. Insanity of this kind is extremely precocious, just as the child had a number of insane ancestors. Such insanity sometimes appears before the period of adolescence; but more frequently at the moment of its appearance. Dr. Legrain gives many cases to prove this from his clinique.

The disastrous influence of the drunkenness of parents ought, we may surmise, to be more intense when both parents are addicted to drink. In 50 such families the posterity amounted to 287. Of these unfortunate children, 75 were found to be backward; 24 were insane; 34 were drunkards; 30 were epileptic and hysterical; 51 had infantile convulsions; 52 were either born dead or died early; 9 were morally insane; and 12 had meningitis. This is a picture of human misery which we recommend to the attention of the ordinary careless rhetorician or callous statesman. If anything like true to nature, it is very important that such facts should be known.

Prophylaxis, says our author with much truth, is the medicine of the future. Let us not then forget that the drunkard leaves a race of children deteriorated in their physical and intellectual condition. It is not, therefore, enough to treat the drunkard; we must also attempt to get rid of alcoholism. — *The Medical Pioneer* (*Eng.*).

THE SENSE OF TASTE. — The physical development of the race is largely dependent upon this sense. Its object is not only to guide and direct the choice of foods, but also to aid digestion by inducing us to chew them properly and sufficiently. Children should be taught to chew and thus really taste their food. The teeth are given so little to do and the stomach so much, that both are out of order. If taste were more carefully cultivated, it would scorn food unfit for the human body. An old proverb says, "That which pleases the palate, nourishes;" and the converse should also be true; only that which nourishes should please the palate.

Through an educated appetite man learns to adapt himself to climatic changes and to the varying fortunes of travel. The most uncomfortable persons to entertain are not those who have had wide experience at tables in many homes and different lands, but rather those who have become so accustomed to having their food prepared "just so" at home, that they are made uncomfortable by any infringement on their pet habits of eating.

Many persons, by effort of will, have learned to eat something which was at first distasteful, because they thought it was proper to eat, — tomatoes, oysters, olives, or olive oil. Do we make the same effort to learn to eat what is good for us?

The development of a healthy appetite should be the corner-stone of education at home and in school. Self-denial learned in babyhood, the sense of taste educated to select right foods, and a better, stronger race of men and women, will arise to settle the questions which perplex us. — *Sel.*

WORRY. — Worry is killing. It is bad management that kills people. Nature will let no man overwork himself unless he plays her false, unless he takes stimulants at irregular times, smokes much, or takes opium. If he is regular and obeys the laws of health and walks in the way of physiological righteousness, nature will never allow him or any person to work too hard. I have never yet seen a case of breaking down from overwork alone, but I admit that it is necessary above all things to cultivate tranquillity of mind.

Try to exercise your wills in regard to this — for will counts for something in securing tranquillity — to accept things as they are and not to bother about yesterday, which is gone forever; not to bother about to-morrow, which is not ours; but to take the present day and make the best of it. Those persons who will continually peer into what lies beyond, never have any present life at all; they are always grizzling over the past or prying into the future, and this blessed to-day, which is all that we are sure of, they never have. — *Sir Andrew Clark.*

WORK AND DRUDGERY.

WHAT is the difference between work and drudgery? — One tires, but strengthens; the other exhausts, depresses, and weakens. Work is agreeable to every well organized and healthy individual; drudgery is always disagreeable, always a dread and a punishment. The same exercise which is work for one may be drudgery for another. The real difference is in the different mental states of the two individuals.

Drudgery may be defined as exercise or employment which is distasteful, repulsive, or into which the mind and heart may not enter; while work is exercise or employment which is agreeable, and which enlists the mental as well as the physical energies. The cheerful housewife seems never to tire of the almost ceaseless routine of daily life, and preserves health and vigor notwithstanding the seeming monotony of her existence; while the hired girl, working as a domestic drudge for her weekly stipend, deteriorates both physically and mentally in the same sort of employment.

The brain, through mental activity, imparts a powerfully tonic influence to the whole body. Even the processes of digestion, liver action, assimilation, and disassimilation are under the control of the brain and the mind. Cerebral activity is as necessary for the digestion of the food in the stomach as is gastric activity. It is for this reason that late suppers are harmful, as the digestive process can be only very imperfectly performed during sleep.

Depressing mental conditions are unfavorable to the performance of the vital functions. Jealousy and fear sometimes cause jaundice. A fit of anger produces indigestion. Violent rage in a mother has caused the death of a nursing infant through the change produced in the vital fluids of the mother.

These facts sufficiently attest the importance of mental conditions in relation to exercise. The person who goes for a walk simply for the sake of walking, in obedience to a physician's prescription, without any other aim or purpose than to take "a constitutional," comes back fatigued, exhausted, depressed, and with little or no benefit as the result of his effort.

Equally depressing and unsuccessful as a means of healthful exercise are the drills to which young men and women are subjected in many of our educational institutions. The idea seems to be that the only thing required is a certain amount of muscular movement or muscular effort to satisfy physiological demands. Monotonous routine exercises, executed in a machine-like manner, as we have seen in many schools, is positively damaging, mentally, and absolutely useless as a means of physical development. A sound spanking or a ducking in a mill-race would be vastly more beneficial to a child as a stimulator of vital activity than such exercise.

One of the most essential conditions of healthful exercise is a cheerful, cooperating mental state. This is the reason why active games often afford better results in the way of physical development than the drills of the gymnasium. The ease with which the muscles do their work seems to be just in proportion to the extent to which the mind is pleasantly occupied. With a mind anxious, distressed, and worried, a person exercising becomes quickly fatigued; while the same exercise is completed without weariness and almost before one is conscious of effort if the attention has been fully absorbed in the meantime with some interesting theme.

The neglect of this principle is the chief cause of the lack of results — or rather the disappointing re-

sults — which usually attend the employment of exercise for young children. The little ones cannot understand the philosophy of exercise as a means of health culture, and to them the proceeding is likely to be a purely formal one, unless the teacher understands how to secure the cheerful cooperation of the mind with the muscular effort.

I recently saw illustrated a new idea in exercise for young children which impressed me as an excellent solution of this question. Instead of issuing the ordinary gymnastic commands to the little ones, the teacher simply placed before their minds pictures of various objects in nature which the children were made to personify and to imitate. A splendid arm movement was secured by imitating the movements of a frog. Each child for a moment really entered into the frog's life, thinking himself a mammoth frog swimming in the water. With arms reaching upward the children stretched and straightened their bodies to the utmost, inspired with the thought of the tall, straight trees in the grove which their active imagination for a moment pictured themselves to be. The personification of slender stalks of corn swaying in the breeze gave splendid side-bending movements, while the thought of the sunflower turning its face toward the sun inspired earnest head-twistings to see an imaginary sun in the rear. Filled with the idea of a young tree bowing its head before a mighty wind the youngsters made forward bends and backward bends worthy of trained gymnasts, although they had had no previous instruction whatever. Thus the teacher with a delightful story brought before the minds of the little ones, one by one, scenes from nature which set every group of muscles in the body going with the same joyous impulse which stimulates the lamb to gambol in the pasture and the birds to leap with joy in the trees.

Any amount of daily, dreary, drilling which the child or the invalid can be made to execute will prove of little value as a means of physical and vital development. Exercise, to be healthful, to be stimulating, invigorating, and renovating, must be joyous, spontaneous, mind and soul absorbing, as well as muscle-moving.

LEARNING TO SWIM.

CLARA BECKWITH writes as follows about swimming: —

"There is no difficulty in learning how to swim. The subject of swimming has been my all-absorbing thought. It is no exaggeration to say that I am perfectly at home and contented in the water. I love its cooling, bracing, and invigorating influences. Among the greatest benefits I have derived from swimming is the remarkable preservation of my health in all seasons and under all conditions of changing climate, diet, and surroundings.

"Here are a few hints for beginners: If at all timid, and if it is possible, take your first lessons in a swimming-bath, where the facilities are good and the surroundings safe. If you cannot do this, take them in still water only waist deep. Seek, first of all, to gain confidence, and do not attempt the strokes until you realize that you are not afraid of the water; a timid person, who from any cause becomes nervous or unduly excited, is apt to encourage cramps. When you become used to the water and feel the inspiration of self-confidence, then you are in condition to learn the chest stroke, in which is involved the prime and fundamental principle of swimming. This must be acquired before any other stroke or manipulation is attempted.

"It is almost as easy to float as to sink. The one great requisite is confidence. That acquired, all the rest is comparatively easy. It is common for novices to make use of corks or bladders to assist in keeping the body above water. These may be of service for supporting the body while one is learning what is called a stroke. But you will never swim until you can place confidence in the power of the water to support you. Plain swimming is a perfectly easy and simple operation. Keep your hands open, with the palms rather concave and the fingers close together, so that no water can pass through them. Then lean with your chest on the water, and as you throw your arms forward your body will assume a horizontal position just beneath the surface. With slow and steady action let the legs follow the motion of the arms or act simultaneously with them. Then spread the hands so as to describe a half circle, the elbows coming close to the body and then to the chest. Slow and steady is the rule to follow in learning. Speed will be certain to come with practice.

"Keep your head well up, and in getting ready for each successive stroke, draw back the legs by a simultaneous motion. Keep the feet wide apart, with the toes well turned out, and as you send out the arms kick the legs backward and sideways to

their full extent, keeping them separate till they have described as wide a circle as possible, the legs coming close together at the end of each stroke. Press against the water with the sole of the foot, and not with the toes, and you will make more easy and rapid progress. If the beginner is at all nervous, he should get assistance from a friend. A good assistant will be found in a heavy plank, on which the swimmer may rest his hands, and so sustain himself, or push it before him as he proceeds. In choosing a bathing place, the swimmer should avoid deep ponds, reeds, and muddy streams, and rapid rivers.

"In the first attempt you will do little more than kick your legs and arms about. In a few days, however, you will become bolder.

"Perhaps the easiest way of supporting the body in the water is to float or swim on the back. In the surf the beginner should keep the head to the billows, so as to fall or rise with them. In swimming on the back the position is the same as that in floating, except that the arms need not be stretched out. Keep the toes well turned out and the hands perfectly still and close to the sides. You will find that you will not sink, though the water will come half over your face

"In plain chest swimming the heels should be drawn up almost to the body, and then struck out right and left, precisely as though you were going to kick in opposite directions. Bring the feet together again and at the same time make a wide and forward sweep with the hands To lessen the resistance of the water, point the toes downward and keep the hands flat. In plain swimming you have to get all the support you can from the water, and, by keeping the hands flat, you necessarily increase the resting surface. Steadiness and endurance must be the first requisites of the young swimmer.

"There are two styles of side swimming. The best way is to lay the face and body well down sideways in the water, with the mouth a little raised to enable you to breathe freely. Except the upper half of the face and the top of the shoulder the whole body should be under water. The upper hand is raised as a sort of cutwater, and with each stroke is sent out as far as possible, the other hand resting on the side, or only brought occasionally into use as a rudder to steady the body.

"Swimming under water is as easy as on the surface. The method employed is precisely the same. You need not shut your eyes, though the natural tendency is to do so. When retaining your breath becomes painful; raise your head out of the water, inhale the air quickly, and repeat the experiment.

"When a swimmer is attacked with a cramp, he should forcibly stretch out the limb, and turn his toes up. This is almost a certain cure for cramp. If, however, this fails, he should throw himself on his back, and float until assistance comes. The most important of all is to retain presence of mind.

"Seemingly, one of my most difficult aquatic acts is that of walking on my hands in the water, with the body extended upward and feet projecting above the surface. This feat, of course, requires care and precision, but is otherwise easy. I am sure that I can walk upon my hands more skilfully and with greater comfort in the water than out of it, because the water materially assists in balancing the body. In performing this and other under-the-water feats, I keep my eyes open, in order to see exactly where I am going and to avoid any object that might impede my progress."

THE PHYSICS OF THE BICYCLE. — When a wheelman is moving forward on a bicycle, what keeps him up? is a question often asked, as the rider passes swiftly along on a wheel base practically without width. Sitting on a still wheel is an almost impracticable feat; but it is simple enough to maintain an upright position when moving at a very slow speed. It is a physical fact that a body in motion persists in maintaining its plane of motion, and unless some additional force acts on the body at an angle to the original line of motion, it will continue to move in its original plane until stopped by friction or arrested by an obstruction. A body set in motion tends to move in a straight line, and will do so unless affected by a force acting on it in a different direction from that of the first movement. A wheelman is propelled through space at a velocity sufficient to cause him to maintain his plane of movement. Should he desire to change this plane of motion, as in describing a curve, he can do it only by calling in the aid of gravity, *i. e.*, he must lean to the concave side of the circle, more or less, according to the radius of the curve he is following. And further, in describing a curve, he is impelled outward by centrifugal force, which is more or less, according to his velocity, and he must oppose this force by a centripetal force, which in this case is gravity. This he does also by inclining his body toward the center of curvature of the path he is describing. In this case the wheel sometimes forms a considerable angle

with the ground, so that under some conditions it slips from under the rider.

The ability of a bicycle and rider in rapid motion to do serious damage in a collision with another machine or with a pedestrian is fully appreciated by few wheelmen. A man weighing 150 pounds and moving at the rate of ten feet per second (which is only about seven miles per hour) has a momentum of 1500 pounds, leaving out of the account the weight of the wheel. This is sufficient to upset any pedestrian with terrific force. A collision between two wheels, each with a 150 pound rider, spinning at the moderate speed of seven miles per hour, would result in a smashup with a force of 3000 pounds. In view of these facts, it is no wonder that bicycle accidents are often very serious. The tractive force required to propel a bicycle over a smooth level surface is estimated at 0.01 of the load; calling the load 150 pounds, a force of one and one half pounds would be required to move the wheel forward, and this calls for a pressure on the pedals of six and three fourths pounds on a wheel geared in the usual manner. When, however, the road is rough or on an up-grade, the case is different. On a grade of 1 in 10, for example, the rider, in addition to the tractive force, actually lifts one tenth of his weight and that of the machine. With a rigid or semi-rigid tire, the rider is obliged to exert sufficient force to lift himself over every obstruction encountered by the wheel; the descent from the obstruction gives back a portion of the power expended in surmounting it, but not all of it. In the case of the pneumatic tire, however, the small obstructions are not an opposing element of any consequence, as the tire yields in lieu of the wheel being raised, and the result is the wheel travels as upon a smooth track.— *Scientific American.*

SCIENCE OF ANTHROPOMETRY.— For many years, great attention has been given to measurements of the human body, and by careful comparison of these measurements with vital, mental, and moral conditions, many interesting facts are being worked out. Dr. McDonald, who wrote for the government a book entitled "Abnormal Man," and who calls himself a social pathologist, has examined after this method 25,000 school children in Washington, D. C. The author claims that we have a more exact knowledge of insects and their habits than we have of man, and he has set himself to the discovery of new facts in regard to the relation of physical, mental, and moral conditions.

It is a well-known fact that long-bodied and short-legged races are inferior to the short-bodied and long-legged races, and the question which Dr. McDonald has set himself to settle, is, whether this is also true of individuals, that is, whether long-legged persons are brighter and smarter than short-legged ones. Tall people are usually long-headed. Are long-bodied boys and girls likely to be stupid? Are long-headed children mentally superior to the short-legged ones? Is long-headedness advantageous physically as well as figuratively? These are some of the questions which the doctor has tried to solve.

In the study of 8000 negro children separately, it was found that up to five years of age, the colored child is ahead of the white child intellectually; the white child gets ahead afterward, however. Girls of fourteen weigh more than boys of the same age. This fact was first discovered by Dr. Bowditch in the examination of Boston school children. City girls are a year ahead of country girls in development. It is found that girls are more sensitive to pain than boys.

A question of interest which is also considered, is, whether unruly boys and girls differ physically, as a type, from the better behaved class. Are bad boys more stupid or more wide awake than good boys? Dr. Mc Donald records the curious fact that the best place to study normal boys is in the reform school. For the study of criminals, this investigation is important. The tendency of modern investigation is to show that murderers and other criminals are of a degenerate type physically as well as morally. Twice as many criminals are color-blind as of ordinary people. All their senses are less acute than in normal persons. The degeneracy may be the result of heredity or of environment, or of both causes acting jointly. The Juke family, 1200 in number, all descended from a bad woman, were all criminals. When Dr. Mc Donald has summed up his researches, we shall probably know more of this subject than we now do. Many investigators are interested in this line of study.

ENOUGH cannot be said of full, deep breathing. It is no hobby or wild notion, but if you would prove its benefits, practice it daily, and you will increase the circulation, purify the blood, and send it rich and hot to warm the feet, make ruby lips, and plant roses on the cheeks. It will aid your digestion, and give you a clean, sweet breath, promote sleep, quiet the nervous system, strengthen the throat and vocal organs, and increase the chest capacity. It will also cure your asthma, catarrh, and bronchitis, and prevent lung trouble.

Home Culture

THE SIGNIFICANCE OF PLAY.

BY MRS. E. E. KELLOGG, A. M.

THE love of play is an inherent instinct in the young of all living creatures; beasts, birds, and fishes, as well as mankind, during the earlier periods of their existence, appear to be very fond of play. A propensity which appears so universal as this sportive instinct at the beginning of all creature life, must certainly have some deep underlying purpose, for no God-given instinct is useless. In the young of humanity the instinct of play is stronger and deeper than in the lower orders of creation, and is a characteristic to which there must certainly be attached some significance. Undoubtedly by play the faculties are developed, the senses quickened, the perceptions made more acute, the movements more easy and graceful.

James Freeman Clark says: "The love of play was certainly given to children as a most important means of education. Anything that makes them run to and fro, chasing and being chased, is intensely amusing to them, and so it develops their muscular power, quickness of eye, skill in balancing, in turning round and round, watchfulness, patience, and many other faculties. Out of the four hundred muscles of the human body, a large majority are probably exercised in the games of recreation, while regular work only exercises a limited number. Therefore the Lord sends the love of active play first, in order that all the body shall be developed to some extent and all the perceptions roused and quickened.

"Moral lessons and moral discipline also come from play. The intense enjoyment of play enables children to support pain, teaches them to obey rules, to control themselves, to bear fatigue without complaint, and so largely helps in the formation of character."

The life of a human being is made up of distinct periods, each with its special characteristics and purposes. The length of these periods differs somewhat with different individuals and under differing circumstances. The few months of life following birth are termed infancy. From infancy to the age of seven is the period of childhood. The next seven years are termed boyhood or girlhood, then follow youth, manhood and womanhood, mature life, and old age.

The period of childhood is particularly the period of exuberant life and play. During this period the brain grows with great rapidity, attaining three fourths of its normal size. This, then, is not the time to stimulate the growing intelligence, as it is possible to do and as so many parents attempt to do, by pressing the children on to learn from books, but a time for joyous activity. "It is a time given the child to learn directly from objects instead of second hand from books; a time of practice for the senses, when through the concrete the child arrives at ideas of the abstract; when he is, in fact, learning after his own fashion to spell out the universe, and discovering bit by bit his relation to the great system of things."

It is also especially the time for laying a foundation for perfect physical health through the muscular development resulting from vigorous play. It is difficult for the healthy child to sit still long at this period, and it is not well for him to be compelled to do so, by being sent at this early age to school.

Most parents, however, not content with the fruitful activity of this period, think that because a child exhibits manifestations of rapidly increasing intellectuality incident upon his rapid brain growth, it is time he was learning to read and write, and so start him in school at five or six years, thus crowding boyhood upon him and abbreviating the precious years of childhood. A child who is forced from one period of development by artificial means, instead of being allowed to develop naturally, is like

fruit ripened by artificial methods; it lacks flavor, and is less wholesome and nutritious than the naturally ripened fruit. It is thus evident that the period of play should be encouraged.

Froebel recognized that the activity of childhood is commonly misunderstood by parents. He believed that the whole later years of life, with their propensities and relationships, were largely gauged by the mode of a child's life during childhood, and to one who has studied the philosophy of play and can understand its significance, this will appear plain. With the child's first effort at play his active education begins. In play he gives outward expression to impressions and thoughts he has previously received. Every activity of the child which is not prompted by another person is the effort of his inner nature to express itself. His imaginary world is as real to him as the world with which he is made acquainted through his senses.

Some friends of Froebel called upon him one evening and were telling of some wonderful discoveries made by the microscope in plant life. Froebel exclaimed, "We think this is wonderful, but I will give you a microscope in which you can study the souls of your children." By this microscope he meant an insight into the true nature of play, an understanding of the reason why the child plays. All parents need to look through Froebel's microscope and study the influence of play upon the future lives of their children. Our highest duty is the development of soul power, which requires that we should understand this power and closely watch its unfolding and development. Before the child can talk, his thoughts are expressed by play. Every inborn impulse finds expression in some activity.

Froebel tells us there are three kinds of play: —

1. That in which the child is investigating the properties of the objects about him for the purpose of gaining the mastery over them.

2. That in which he imitates the activities of life, the purpose of which is to enable him to enter into life with an understanding sympathy.

3. That by means of which the child puts forth his own ideas and thus creates his own world.

In the accomplishment of its highest purpose, play enables the child to create his own world. By repeated efforts he acquires not only the ability but the courage to express his thoughts in acts. As has been said, "He thus learns to dare to attempt to put into outer form his inner aspirations." This courage to express his thoughts in outer form leads on to the courage which in later life prompts him to act out his convictions of right.

The noblest thoughts and ambitions of a child are expressed oftentimes in play, the result of his own mental creation. This creative purpose of play ought to be carefully cultivated by parents. A child without this power is almost wholly without resources, and at the mercy of a great many untoward influences and circumstances. The child who is not self-centered and capable of entertaining himself in profitable ways, will fall an easy victim to temptation in later years.

The purpose of play is not wholly to amuse and occupy the child's time, but to educate it, to give it mental and moral growth. The manner in which the child enters into his play in childhood will be very likely to characterize his life work in after years. He who enters "heart and soul" into his play will be likely to enjoy work for work's sake when the time for labor comes.

(To be continued.)

SOMETHING TO BE THANKFUL FOR.

BY MRS. MARTHA WATROUS STEARNS.

A NEW ENGLAND cornfield does not seem a particularly melancholy place. Bryant must have been looking elsewhere when he told us about those "melancholy days," the "saddest of the year." Autumn clouds overhead, and "wailing winds" can never drive the sunshine out of the great pyramids of golden corn or bring a shadow over the heaps of merry-faced yellow pumpkins. Sunshine that has been growing in for a lifetime does not leave place for chilly surroundings. And our corn and pumpkin friends had been storing theirs up since babyhood, when they were only blossoms in summer showers. So now the louder the wind whistled through the corn-stalks, and the deeper and sharper grew the bites of Frosty Jack, the cheerier they looked and the brighter shone their gold, for there is something inspiring in the very fact of not yielding to circumstances. One after another their summer friends grew faded and brown by the disagreeable freaks of the weather that they could not endure, but that which killed their neighbors, only ripened them. They were not quite alone in their hardihood, for

in the border of their field the yellow chestnut boughs tumbled down their brown babies, cradles and all, for the squirrels who scurried around to pick them up before the inevitable school boy should make his appearance, and spoil the fun.

Altogether it was an enviable corner of the world, this cornfield, and everybody in it thought so, unless it was the turkeys, and they, poor things, were filled with mournful forebodings of the future. They ruffled up their feathers and huddled near the great pile of pumpkins, even the sight of countless grains of the appetizing gold strewed around did not cheer them. The autumn breeze seemed continually saying a mournful dirge, as it soughed through their

A Thanksgiving Soliloquy.

tail-feathers: "Thanksgiving's coming, its almost here!" And how could it be otherwise when every turkey knew that there was an inherited tendency to disappear at that particular time every year, and it had also become an established fact in turkeydom, that the fatality was the greatest among the fattest. So it was no wonderment that the finest and fattest young gobbler of the family was especially depressed, and kept himself as much as possible in the background, in the shelter of a correspondingly fine plump pumpkin.

"You are so kind," murmured the pumpkin, "to protect me from sight by your feathers."

"O, not at all," returned the dejected gobbler, "my motive is wholly selfish. I am simply trying to screen myself behind the other members of my family. Perhaps you notice I am unusually fat, and perhaps you have heard how, in the past, others like me have strangely disappeared about this time. It is that I am fearing daily."

"Is it possible," exclaimed the usually serene-faced pumpkin, "that I have a companion in misery? My dear gobbler, that's the very thing I'm fearing myself, this strange disappearance that usually occurs about this season to full-faced pumpkins like myself. You notice I am a particularly well-developed pumpkin, therefore I have rolled myself to the very bottom of this pile."

"Do you know"— and the young gobler's voice was hoarse with emotion—"just what becomes of— of— those who thus disappear?"

The apparently calm and nerveless pumpkin almost trembled as she whispered, "I got it from the family cat. She was sunning herself one day against my side and purred the whole secret to me. 'I'll be sorry when you're gone,' she said, 'and I have no place to sun myself against, but I suppose the farmer's wife will soon make you into a pie. I have seen others of your family treated that way. You know Thanksgiving's coming,' and then she purred on, 'but I'll not be sorry to see that young gobbler roasted. My! how juicy he looks! it makes my mouth water to look at him. The farmer's wife always gives me turkey meat with the rest of the family, and Snap, the dog, is to have all the bones, he told me so, and actually cracked his teeth to think how good they'd taste.'"

"Enough! enough!" cried the gobbler, "to think that this is what I have eaten corn for all summer long,— that I may be roasted and torn joint from joint and devoured by everybody, even cats."

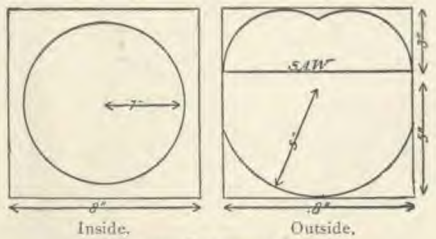
"But the strange part of it all is," continued the pumpkin, "they do it to be thankful, and Mrs. Cat said last year the spiced pumpkin pies gave them all the stomach ache. Just to think of no higher mission in life or death than to give people the stomach ache!"

"Were it possible," exclaimed the young gobbler with a touch of the heroic in his tones, "to save our families such a fate,— if that were possible, I would gladly give my life, could I be assured thereby of causing such violent gastralgia that our race would never again be considered edible."

"And I, too," sighed the pumpkin, "but it isn't probable, for people will eat what tastes good, if it kills them. But, my dear gobbler, let us comfort

ourselves with the thought that even in death we 'll be together, for whoever heard of a Thanksgiving dinner without roast turkey and pumpkin pie? and possibly our combined forces may bequeath them a prolonged gastritis."

Now a very strange thing happened at just this point in their conversation. A small boy with his small fists doubled up, rubbing his eyes, came run-



WORKING DRAWING OF BOX.

ning out to the pumpkin pile. It was little Jack Horner, and he dropped himself right down on the big fat pumpkin, and confided to her motherly heart how they 'd just been telling in the house that they were n't going to have any roast turkey nor pumpkin pie, nor nuthin' 't all, and of course there could n't be any Thanksgiving if there was no turkey nor pie to give thanks for. "I do n't see why they 're getting so cranky all at once," he continued, "just 'cause they 've been reading something somewhere about turkeys not being good to eat any more, and pies being bad for our deegestings. O dear, what shall I do!" and then followed such a chorus of "boo-hoo-hoos" as any small boy would have been ashamed to own except in the seclusion and privacy afforded by a cornshock and pumpkin pile. If he had only known what an interested audience had listened to his remarks, he would have felt better.

The young gobbler suddenly gobbled so loud and long that he electrified the whole gobbler family, who lifted up their voices in one grand chorus of gobbles, and then fell to eating corn as though life had become worth living once more. The pumpkins, too, all looked as though they would roll for joy. But what about poor little Jack? Well, a week later he felt like rolling for joy too, he was so thankful. He had found something to be thankful for, and this is what it was,— his big sister came home from school for Thanksgiving, and told him they were going to have a new celebration that year that would be nicer than anything he had ever heard of. Everybody was going to have a part in it, and his should be in preparing twelve pumpkins for lanterns, and a gift for "auntie," — something she would be "thankful" for.

It was Tuesday, so Jack had his hands full till Thursday. He selected twelve of the finest pumpkins he could find, and hollowed them all out nicely, and cut beautiful jack-o'-lantern faces in them all. Then he tried to think of something for auntie. Dear, dear, what should it be? He thought and thought, and finally decided his sloyd should help him out. He would make a little wooden jack-o'-lantern knitting-box that would hold four balls of yarn, and a different color should unwind from each eye and corner of his mouth. That would be a great improvement, for her old box only held one ball, and when she knit with more than one color, they all got tangled together.

He took an eight-inch block of soft pine and drew a circle with his compasses on top. Then he drew a little smaller circle on the bottom of his square block, and on the sides he made his circles a little larger at the top. Then he sawed his block in two, a little above the middle, and on the upper half he drew a circle to within one fourth inch of the edge, and on the lower half he drew one to within one half inch of the edge so that the cover should fit over it. With a gouge he scooped out both nicely, being careful to keep the edges of his circles nice and sharp; on the lower half he took a chisel and cut away a sharp rim that would hold the cover in place; after that he modeled the outside pumpkin-shape, bored holes for eyes, nose, and mouth, and then shaped them with his knife. He whittled a beautiful little pumpkin stem for a handle and glued on top, and then smoothed it inside and out with sand paper and the sharp edge of some broken glass. It was a very creditable piece of work for a small boy, and Big Sister was delighted with it.

Now he had to wait as patiently as a hungry, ex-

KNITTING BOX.

cited little boy could for his dinner. "But all things come to him who waits," even Thanksgiving dinners, and after what seemed about a month's time to him, he heard Big Sister calling, "Come, Jack, to the dining-room," and there, oh dream of dreams! it was almost fairyland! It was lighted only by soft candle-light, which shone out from eleven merry-faced pumpkins. Every pumpkin bore the name of

a month, and each was crowned with the gift of its month. December wore a small fat Santa Claus as a diadem; January, the baby New Year; February, a small George Washington in his country's colors. All the winter months were well besprinkled with salt and glass powder, which made a pretty snowy effect. March was crested with a little Brownie, blowing away the snow. April wore a bunch of violets; May, some fruit blossoms; June, strawberries and roses; July was heaped with firecrackers and flowers; and August with midsummer fruits; September with grapes and autumn flowers; October with apples nuts and corn; and November — where was the November pumpkin? Jack looked everywhere and could not see it. The others shone from sideboard, side-table, mantle, and every unseen nook, but poor November, where was she? Jack forgot her again, however, in his eager survey of the room. The table legs even were hidden in sheaves of wheat and corn which apparently supported it. The snowy cloth was decorated with bands of the coral-like sprays of barberry and a beautiful center-piece of the same. Jack thought he had never seen anything so lovely, and had forgotten all about the dinner part of the program when his father read from a menu card the following "appetizer," "to be taken mentally with each mouthful: " —

"No sacrifice of life in man or beast required in the preparing or the eating of this dinner!" Then followed a good laugh, after which everybody appreciated the simple, appetizing menu, — vegetable soups, then vegetables and legumes prepared in many dainty ways, and seasoned alone with nut butter; then breads in variety shortened with nut meal, dainty desserts of fruit and grain combinations. Delicate cakes with fruit drinks and abundance of fruit itself completed a reasonable Thanksgiving feast, and then for the finishing "touch" Big Sister brought in a large platter and on it that dear, big, fat pumpkin on which Jack had sat and wept a week before. "November at last," everybody exclaimed, and sure enough "November" and "Thanksgiving" were inscribed on its sides, and it was crowned — with nothing for itself, but crowned and filled with gifts for everybody! The pumpkin went the rounds and everybody put his hands into its cavernous, great-hearted depths, and drew out something to be thankful for, and it was the popular sentiment that stuffed pumpkin was better than stuffed turkey.

Even little Jack Horner,
Who sat at the corner,
Enjoying the new pumpkin-pie,
Put in his thumb
And pulled out a crumb
And said, "What a thankful boy am I!"

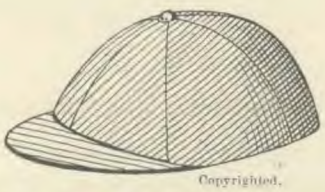
THE BATTLE CREEK SANITARIUM DRESS SYSTEM.— X.

MANY so-called business suits have been devised from time to time, for business women, but hitherto, in no case, has the work been so well and thoroughly done as by our special designer in the suit illustrated here this month, and which has been appropriately named, the Woman's Practical Business Costume. All the needful conditions to insure perfection, grace, utility, convenience, suitableness, are met in this neat, attractive, and thoroughly sensible dress. The quantity of material employed is so well regulated that there is not a single useless fold in the skirt, neither an ounce of unnecessary weight, and this, too, without even a suggestion of scantness, or any peril whatever to the general fine appearance of the suit. The most perfect freedom is allowed to the limbs, and in windy weather it is an utter impossibility for the garment to wrap about the figure, for it is so constructed that it *must* keep its place whether in walking, sitting, or riding a wheel. This fact alone should warmly commend the costume to all women, the nature of whose business avocations obliges them to be out on the streets in all kinds of weather. By reason of its peculiar construction, unlike any other garment of the kind ever before offered to the public (its bifurcated nature is shown in the illustrations), this suit is much warmer than an ordinary dress, and thus the usual amount of underclothing is superfluous. Only one light underskirt could be worn with it, a cut of which is given herewith. With leggings to match the knickerbockers, which should be worn over a union suit, a lady clad in this costume has only to don an outside wrap, when she is fully equipped for work or business in the roughest weather. The skirt of this costume is not intended to be made longer than is represented in the illustration (about five inches from the floor), as from its nature this skirt could not be held up so well as other skirts, and thus a greater length than that here shown might prove embarrassing. But the length may vary from that here given to within six inches below the knee, according to the taste of the wearer. The leggings are to be made of the same material, and will thus supplement the length of the dress in an altogether feminine and

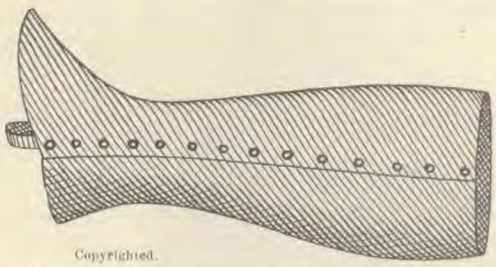
DRESS SHOWING DIVIDE IN FRONT.

KNICKER-BOCKERS.

DIVIDED SKIRT WITH CIRCULAR YOKE.— FRONT.

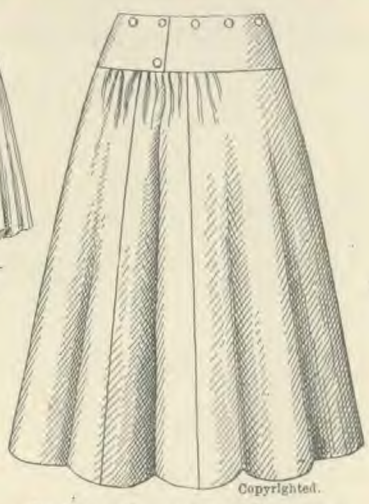


CAP BELONGING TO BUSINESS COSTUME.



LEGGINGS BELONGING TO BUSINESS COSTUME.

KNICKER-BOCKERS.



DIVIDED SKIRT WITH CIRCULAR YOKE.—BACK.

DRESS SHOWING DIVIDE IN BACK.

Copyrighted.

DRESS WITHOUT CAPE SHOWING DART RUNNING INTO ARMHOLE.

Copyrighted.

WOMAN'S PRACTICAL BUSINESS COSTUME.

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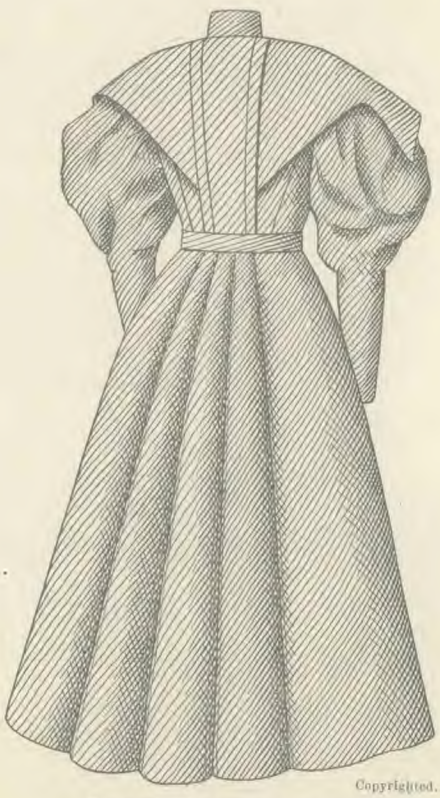
WOMAN'S PRACTICAL BUSINESS DRESS.— FRONT.



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WOMAN'S PRACTICAL BUSINESS DRESS.— BACK.

graceful way. Here, then, is the dress for the coming woman, of whom we hear so much, though few of us, I think, realize that she is already come, and come to stay, as a wage-earner in all departments of work and business,— a dress at once dignified, modest, graceful, healthful, convenient,— a walking dress, a cycling dress, a rainy-day dress, an exercise dress, a dress for business office or shop, for dairy, kitchen, or garden, the weight of which is reduced to a minimum, and its cost is a question of scarcely more than the quality of the material used, in this age of marvelously cheap dress goods.

This costume comprises four garments,— the dress proper, the gored divided skirt, the leggings, and the cap, each of which is illustrated on these pages, and described below, as follows : —

Woman's Practical Business Costume.— This pattern is in fifteen pieces,— the half of front, which is in two pieces, under-arm gore, half of back, half of cape, half of collar, half of box plait for front, half of box plait for back, three sleeve portions, half of inside section of skirt, half of outside section of skirt, half of front, and half of back widths, which conceal the division in the skirt. The costume in the present instance is developed in a loosely woven cheviot, but serge, brilliantine, or any wool suiting goods may be satisfactorily employed. Machine stitching was the only trimming used, but any other mode of decoration may be adopted. The quantity of material needed is 9 yards of 36-inch goods. Patterns can be furnished in the even sizes from 30 to 44 inches, bust measure. Price of pattern, 40 cents.

Gored Divided Skirt with Yoke.— This pattern is in three pieces,— half of inside section, half of outside section, and half of yoke. For knickerbocker effect simply run elastic braid in the hem and draw up to fit the leg. A heavy quality of sateen was used in the present instance, but silk, pongee, brilliantine, or wool goods may be satisfactorily used. The amount of material needed is 4 yards of 36-inch goods. Patterns can be furnished in the even sizes from 30 to 44, bust measure. Price of pattern, 25 cents.

Ladies' Cap with Visor.— This pattern is in five pieces,— half of front of visor, interlining of visor, half of front, half of side, and half of back section of cap. This cap is in the present instance made of the same material as the rest of the costume, but it may be made of any suiting goods desired. The quantity of material needed is one fourth yard of 36-inch goods. Patterns can be furnished in large, medium, and small sizes. Price of pattern, 10 cents.

Ladies' Leggings.— This pattern is in four pieces, — one side of front, one side of back, front and back in one piece, and strap. These leggings are also a part of the suit, and are thus made of the same material. If the material is light-weight goods, a lining will be necessary, and the edges may be finished with two rows of machine stitching, put close together. The quantity of material needed is one yard of 36-inch goods. Patterns can be furnished in large, medium, and small sizes. Price of pattern, 15 cents.

N. B.—Patterns which have been sent out by us according to directions, will on no account be taken back or exchanged. Unscrupulous persons will frequently order a pattern of us, and after keeping it long enough to cut a duplicate pattern, will return it to this office (the pattern showing that it has been tampered with), saying there had been a mistake in ordering, and asking for a different size. We are therefore obliged to make the above rule as a protection to ourselves, as we cannot afford to furnish more than one pattern for the price named.

Address all orders for patterns to the Sanitarium Dress and Pattern Department, Battle Creek, Mich.

SEASONABLE RECIPES.

Molded Granose Dessert.— Flavor a pint of milk by steeping three or four tablespoonfuls of desiccated cocoanut in it for twenty minutes. (The milk must not be allowed to boil.) If the milk has evaporated, add enough more to make full pint. Add a tablespoonful of sugar and two well-beaten eggs; cook until the custard is set, in a double boiler or a bowl placed in a dish of hot water. Add a sufficient quantity of dry granose to make the whole quite thick, and mold in cups. No dressing is required.

Granose Dumplings.— Pare and remove the cores from quickly cooked tart apples. Fill the cavity with sugar. Moisten dry granose with cream sufficiently so that it can be pressed around the prepared apple the same as a dough, and bake until the apple within the dumpling is tender. Serve with cream. If preferred, the juice of stewed apple may be used for moistening the granose, and a dressing prepared by thickening the juice of apples with a little cornstarch or browned flour, sweetening to taste and flavoring with a little grated lemon peel.

PROPER PHYSICAL REST FOR THE SICK OR FEEBLE.

THE natural activity of each living organ of the body is constantly destroying and wearing out the bodily tissues. The rapidity of this destructive process, as well as the activity of the processes of repair whereby the worn-out structures are replaced within certain limits, constitutes the true indication of the health and working ability of each organ of the body. But when the structure of an organ is broken down faster that it is repaired, or is built up faster than it is needed for working energy, then the organ becomes diseased and does its work imperfectly; waste accumulates, and the tissues undergo various degenerations which finally result in organic disease. Overactivity of an organ wears it out, and it needs rest to give its worn-out structure time to rebuild and dispose of the accumulated waste matter. Thus in all cases of soreness of the muscles from hard, long-continued physical labor, periods of rest are needed, even by the strong and healthy, or else the muscular energy will fail, and the patient become permanently weakened or diseased.

In childhood, when the structures are growing and changing rapidly, a great deal of rest and sleep are required, and it is a favorable symptom when the young child sleeps a great many hours out of the twenty-four. A correspondingly unfavorable symptom is to find a wakeful, ever-active baby or young child.

Rest cannot always be taken by the same methods. The brain worker may rest his overwrought nervous system by chopping wood or a brisk walk in the open air, and the tired laborer by stretching himself under a shade tree and taking a nap. The careworn business man may find rest by a trip into the wilderness, away from the busy haunts of men, and the farmer and his family may rest their overtired muscles by a day's sight-seeing in the city. In all cases of disease, rest is a very important element, and the enforcement of proper rest in sanitariums is one reason why chronic invalids get well in these institutions so much faster than at home, where the every-day cares and crosses of life, the feeling that one must be up and ever at work, overtax the tired muscles and irritate the weak nervous system and harass the mind until every organ is functionally disordered and a collapse of mind and body is imminent. This class of invalids are said to suffer from nervous prostration, and are found alike among the haggard devotees of fashionable dissipation and the worn-out laborers of this busy work-a-day world.

Oftentimes a weary, worn mother might save herself months of sickness and even life itself were she to stop short of the final breakdown of her health and take a month's complete rest in bed, free from all care of nursery and household. In some of these cases the only way to get the needed rest is to isolate the patient for a few weeks, permitting her to see only the nurse and the physician, and entirely shutting her away from all the scenes and surroundings of her every-day life. This enforced rest gives the tired-out body a chance to rebuild its wasted tissues and regain its wasted energies so as to be able once more to enter successfully the conflict of life. This is called "rest-cure," and consists of rest in the recumbent position and a prescribed dietary, together with massage and electricity and passive movements to keep up nutrition, and proper exercise of the weakened organs without overtaxing them. It is rather a costly method of treatment, but often does for those cases what nothing else will accomplish. The patient begins to put on flesh and the stomach to digest food. The excitable nervous system becomes more quiet, so that the patient can rest, eat, digest, and grow fat.

The many tired mothers and other weary workers in the land cannot all go to sanitariums and take the rest-cure, but if the whole family feel that one of

the members needs rest, plans can be made by which to get an hour or two of rest-cure for the tired father or mother daily.

A great deal of useless work can be avoided. Among other things clothing can be made plain, and of a kind requiring little starching and ironing. The men of the family can wear flannel or some other colored shirts, instead of the traditional stiff-bosomed white ones. The girls in the family can wear the knitted underwear and colored skirts instead of white, and hours of time be saved for mother to take "rest hour" in. Also cooking may be made simple, and with a modern steam cooker the mother of the family may avoid being cooked with her meals. Teaching each member of the family to care for and put away his or her own things, and, as soon as large enough, to do her own mending, will also greatly lighten the mother's labor, and keep the overflowing mending basket empty. Truly our methods of civilized housekeeping need remodeling, so as to get the greatest results from the least expenditures, before they will meet the needs of the many worn and weary housemothers who do all the work for large families the world over, if they do their duty as child trainers, and yet maintain their own physical and mental health.

When a child or an infant is fractious, unreasonable, and restless, in nine cases out of ten it will be found that it is rest that is needed, either of the nervous system or the digestive organs, and the best treatment is to give the child a warm bath and put it to bed without anything to eat, if it be suffering from an overloaded stomach. During the second dentition, many children are very nervous, and in some, morbid tendencies creep out, such as petty thieving, secret vice, etc. Such children need rest and sleep. They should have a system of daily "rest-cure," a regular hour for sleep and rest in bed. Their surroundings should be such as will promote sleep and a restful condition of mind and body. They should not be overdriven at school or be teased or harassed in any way, but should spend much time in the open air at some quiet sport or useful work. Such children should not be put upon the stage or made to show off their smartness for the benefit of any day school or Sunday-school. Such practices are an unmitigated cruelty to the overwrought nervous system. Give children the quietude and repose which belong to that want of self-consciousness which is the natural heritage of every healthy young child, who should have no care or worry about either past, present, or future.

The business man who stimulates his jaded, worn-out brain and nerves by tobacco, liquor, opium, or some other drug, ought instead to go into his bedroom daily and take a couple of hours' sleep. There the tired organs would gain real instead of fictitious strength.

Whenever a fever or other acute disease is threatening, one of the best means of cutting it short or aborting an attack, is to go to bed at once and stop eating for twenty-four hours. Often the rest gives the body a chance to contend with and successfully throw off the disease, and thus a long spell of sickness may be avoided. Much may be done to lessen the severity of the chill, fever, and night sweats of consumptive patients by rest in bed at the time of the prospective chill, and also when the fever is highest. In case of malarial fever, one of the best measures is to go to bed and cover up warm and drink hot water at the time the chill may be expected. This will keep the blood on the surface and the internal organs free from congestion.

There are many other conditions in which rest, if properly taken, will prove a great aid in overcoming disease. In all cases of recovery from severe acute disease rest is very important, and every means should be used to obtain for the patient plenty of rest and good sleep. All such patients should rest for an hour before eating, and avoid any exhausting exercise before going to bed, also everything liable to excite them mentally at night. In all cases of bowel complaint, whether acute or chronic, when there is a tendency to looseness, rest is necessary for recovery, and every effort should be made to keep the patient in a recumbent position until the acute attack is over. Many children are neglected in this respect, and as they are thought to have only a simple diarrhea, they are permitted to run about and eat of whatever they please, until the simple diarrhea becomes a deadly cholera infantum, dysentery, or inflammatory diarrhea. As persons grow old, they need more rest, in fact, the aged relapse into a second childhood, and again sleep a greater portion of the time. This is true of those who have led a moral life.

The time when rest should be taken by those in the working period of youth, manhood, and middle life, is of course at night, when all tired nature sleeps, and at least seven hours' sleep should be gotten by men and women in their prime — more than this when the system is weakened and enfeebled. Rest should be taken before eating. The farmer recognizes the fact that his tired horses need rest before they are fed, so he and his hired men go in and eat dinner when hot and exhausted, then come out afterward

and feed the rested animals, with the result that the men stiffen up and have the rheumatism (if they were horses it would be said they were foundered), while the horses remain well. The housewife also finds it hard, perhaps harder than most others, to eat when in a quiet, rested condition. Yet much can be done by using simply prepared food, and avoiding roasting and stewing, and methods of cooking which require the housewife to be over the heated stove basting and watching lest the savory dishes burn. Grains and vegetables can be all put in at once into the modern steam cooker, and require very little care afterward, only to keep the water boiling underneath them. Having the table set early and all dishes but those to be served hot put on before the rush and hurry of the meal comes, will help procure for the tired mother of a family at least partial release from the overwork and heating which so often come with each meal.

Each individual, when sensible that rest is needed to enable him to keep his health and do his work in the world, must lay his plans according to circumstances so as to get the needed rest. For both the sick and well this requires system and thought not only on the part of the head, but all members of the family. Many mothers who are what are called notable housekeepers surprise the world by raising a family of idle, incompetent daughters, made so by the mother, who preferred doing all the household work herself; and while she failed in health just when she should have been in her prime, they grew up useless and helpless, suffering for want of the proper share of the work which wore her out. Truly there is not more work in this world than the human family needs, and it could all be done without any one individual's being burdened if every one did his share. To get the needed rest and exercise for the highest good of each member, the heads of the house need to know how to adjust to each his rightful proportion of the work.

MENTAL REPOSE FOR THE SICK.

REST of body is difficult to obtain when the mind is ill at ease. There are many sources of mental disquietude, which often keep the sick one ill for weeks, months, and even years. There is the hypochondriac, who gives up his time to studying his symptoms and reading medical books to find new ones; the business man, stricken down in the midst of his active life, thinks that his business will go to ruin unless he is there to look after it; the weary mother, who feels that her little ones will suffer unless she is able to see after their many wants as only a mother can; the many workers, men and women, beginning life with no other financial resource save their health and strength,— all these find much in their circumstances to cause anxiety and to render worse whatever disease they may be suffering from. To such there is nothing so helpful as a hope for the future, and a faith in our heavenly Father's loving care. The nurses or members of the family who can by a kind, cheerful manner and conversation keep up the failing courage of the ailing one, will do much to shorten the illness and help the patient recover. The person who holds onto his own case and does his own prescribing is perhaps hardest to manage, yet judicious direction of the mind into proper channels without seeming to oppose him, will do much good, even sometimes agreeing with him when he makes some more than usually dismal prophecy about dying or the like. I have found in some such cases that a suggestion that the patient had better make his will, or something of the nature of setting his house in order, will add as many years to his life as were added to Hezekiah's life.

For the weary mothers, friends could do much if, instead of visiting the sick-room to chat and gossip, they would take the children to their homes and care for and train them as if they were their own, until the mother is able to take up her work again. The relief to the sick one's mind from the care and anxiety in regard to the children, might be just the thing needed to turn the scales in favor of the patient's recovery at some important crisis in the disease. Thus she might live as the result of some one's Christian act, when a fatal termination would have resulted had circumstances and surroundings not been changed. Who shall say that such Christian acts are not as true missionary work as crossing the seas to labor for the heathen?

Then for the busy father, every child who is old enough to do any kind of work, can do something to lessen his burden of care. Every one can help his neighbor; if a farmer, a few days' work to save his crops, a day to haul wood, and the neighboring women, friends of the family, can wash and cook so as to enable the wife to care for her sick husband.

All this is a part of home nursing which should include not only doing the best thing for the sick of one's family, but also the best thing for every one else in the neighborhood. The good Sāmaritan was a good Samaritan because he knew how to heal the wounds and nurse an injured man back to life and health, and because he had the humanity to do it. The priest and the Levite were condemned because they would not look at a disagreeable object or soil their fingers with the nursing and cleansing of the wounds of an injured fellow-being. No doubt they had wept over the woes of prophets and martyrs in the past, but the suffering of a poor man fallen by the wayside was too insignificant for them to attend to. They would donate princely sums to build sepulchers for the dead, but the living were of no account in their eyes.

Every boy and girl should read the story of the good Samaritan and be taught its true meaning, — that every one who is wounded in mind, or ill from bodily disease, has truly "fallen among thieves," and that the good Samaritan's work is to find out what kind of wounds need dressing and disinfecting and how to give the necessary treatment to heal them.

There is a class of people who correspond to the priests and the Levites, some of whom are usually found in every home. They excuse themselves from helping the sick and wounded because they are too sympathetic. This often is a mere figure of speech, due to indulging the imagination and reading romances. Such persons can only be cured by taking up the actual work of life which most needs to be done. Let them begin with giving some dirty boy with a sore stubbed toe, a foot-bath and dressing the wound, and they will have less time to shed useless tears over some wounded hero on an imaginary battle-field. There is a chance for all to know how to wash and dress wounds properly, disinfect soiled clothing and bedding, as well as to minister to a mind diseased, and keep a nervous, irritable patient quiet and restful.

One of the first things needed to quiet the mind of the patient is for the nurse herself to be quiet, cheerful, and hopeful; next, study to find out what the patient's wounds are, and what will best meet his immediate needs. It may be a fomentation to relieve pain, or a Scripture promise or an exhortation, or a hymn to cheer and enliven him. Or the patient may not want to be read to at all but instead to be let alone and be quiet. If a mother, she may want to hear how the baby is getting along, and also how the work in the kitchen is being done. Whatever is the cause of worry, remove it and set the mind at rest.

The bedside of the sick is not the place for any argument or for religious controversy, but we may direct the thoughts to the kind Father in heaven and the promises we all have in common. Pray for wisdom to so order the walk and conversation that everything may be done for the best by those who are caring for the sick ones, and try by having peace yourself to impart peace and trust to them.

THE IMPORTANCE OF DECISION WHEN NURSING THE SICK.— A physician once asked the sister of a fourteen-year-old boy in relation to the prescription for treatment given the day before, which he felt sure had not been given as directed. "O," said the sister, "I did not give Johnny that treatment because he did not want to take it." Now with this sister the criterion for carrying out the physician's orders was the caprices of this half-delirious boy. The whole family were holding the physician accountable for the outcome of the case, yet did not follow his directions. This is the usual failure in home nursing. The trained nurse, accustomed to follow the doctor's orders and to carry out his instructions to the letter, does not allow the whims of the patient to regulate her methods of work; she also, by her manner and the importance she attaches to the treatment, inspires her patient with confidence in the measures used to restore him to health, and so he gains much faster than under the care of his friends, who, by being uncertain in their work and in their application of remedies, lead the patient to expect but small results from the treatment.

Those employing a physician ought to engage one in whom they have the utmost confidence, and then follow his or her directions implicitly, not only in the giving of medicine and treatment, but in the matter of diet, ventilation, and all minor details. Unless this is done, the doctor should not be made responsible for the results. Uncertainty on the part of the one caring for the sick person, and a half-hearted listlessness in caring for him, begets in the patient the same uncertainty and destroys his faith and hope of getting well, and keeps him restless and uneasy until he becomes despondent mentally, thus giving the disease a chance to prey unhindered on his weakened body. Truly, nursing is made up of little things, and as every one has to be accountable at some time in life for some one who is sick, the little details are worth considering.

GOOD HEALTH
J. H. KELLOGG, M. D., EDITOR.
BATTLE CREEK, MICHIGAN.

THE RELATION OF TEA AND COFFEE TO DIGESTION.—There is, at the present time, a pretty general concensus of opinion among physicians as to the unhealthful character of the common beverages, tea and coffee. Both these substances contain tannin in abundant quantity. It is well known that tannic acid precipitates both the pepsin and the peptones in the stomach fluid, and consequently is antagonistic to peptic digestion. It is probable, however, that few physicians are fully awake to the great prevalence of tea and coffee poisoning among chronic invalids. Not a few sufferers from chronic nervous headaches recover almost immediately when they discontinue the use of tea and coffee. The writer has demonstrated this in some hundreds of cases, and has for more than twenty years absolutely prohibited the use of tea and coffee to his patients.

The caffein contained in portions of the tea leaf and the coffee berry is also well known to be antagonistic to peptic digestion. Brinton has shown that tea and coffee diminish the activity of the peptic glands.

Wolff has shown that even so small a quantity as twenty centigrams (three grains) of caffein is sufficient to diminish the total acidity of the gastric juice, even when the stomach is in full activity, at the same time diminishing the secretion of hydrochloric acid and the formation of peptones. This small amount of caffein is frequently surpassed by habitual users of coffee.

Roberts has more recently shown that tea and coffee are, in the highest degree, inimical to starch digestion, completely neutralizing, when present even in very small proportion, the action of the saliva upon starch whereby starch is converted into maltose.

Is it not the duty of the physician who becomes acquainted with these facts to place them before his patients in so emphatic a manner as to produce the discontinuance of tea and coffee, which must be classed with tobacco and alcohol, as among the most potent of the widely operating causes of disease which prevail in modern times among civilized people?—*J. H. K., in Modern Medicine.*

GERMS IN MILK.—Dr. Rowland recently reports in the *British Medical Journal* the result of an extensive examination which he has made of the milk supply of London. In twenty-five samples of milk examined bacteriologically, the average number of bacilli found per cubic centimeter was 5000, equal to a little less than two million per dram. This is somewhat less than the number found in other investigations which have been made. That the number of bacteria found was so great is not to be wondered at, since Sedgwick found 30,500 microbes per c. c. m., or 122,000 per dram, in freshly-drawn milk; and Kohn has shown that germs may multiply at the rate of doubling every hour, thus producing, in three days, the inconceivable number of 4,772,000,000,000,000. The wonder then is, not that milk contains so many microbes, but that it contains so few. As regards the sources of these germs, we quote as follows: —

"Whence comes this extraordinary number of bacteria? It is not difficult to imagine their source if for a moment one recalls the usual conditions of the cows in even the cleanest and most hygienically managed of our dairies. The stable or cow-shed in which the milking is usually carried on is itself saturated with excremental matter, the very straw the animals stand upon is too often but an incubating ground for micro-organisms; for, warmed by fermentation and saturated with fecal matter, it offers all the conditions of warmth and nutrient material for their best growth. The restlessness of the animals and the walking of the milkman disturb at each moment myriads of these micro-organisms, some of which, passing into the open pail, find in the warm milk all the conditions for life and active multiplica-

tion. That this is not an exaggerated picture will be evident when we state that fully ninety per cent of the organisms found are the bacillus coli communis, the common inhabitant of all excremental matter.

"Other sources of infection are to be found in the dirty hands of the milker, unclean dairy utensils, and in the insecurity and carelessness commonly employed in the transit of the milk from the dairy to the consumer."— *Modern Medicine.*

Germ Diseases and School Slates.—The *National Board of Health Magazine*, an energetic medical journal, thus calls attention to a danger recently pointed out by Dr. Ferguson in the indiscriminate use of slates among school children :—

"The common practice which prevails in schools, is to hand the slates to the children without any attempt being made to insure that each child shall have the same slate time after time. The result is inevitable. The first thing that the child does is to clean the slate by means of the finger wetted with saliva. In this process, of course, the finger travels many times from mouth to slate, and *vice versa*, and thus conveys to the mouth any material which may happen to be upon the slate. Thus, if a child happens to be suffering from tuberculosis, the tubercle bacilli might be readily conveyed to the mouth of another healthy pupil, and the same contingency would be likely to happen, perhaps, in all probability, with greater effect, if the disease were to be diphtheria. It is obvious that as long as children have only to depend upon their fingers and saliva for 'rubbing out their sums' on the slates, this evil will continue. But a very simple remedy would be to provide a piece of sponge, firmly attached to a string, with each slate, and taking care that the sponge is dampened in water previously to the lessons being begun. A practical point of this character is nothing more than a self-evident necessity in these days of highly standardized hygiene and sanitation."

Malaria and Indigestion.— Dr. Paul de Groote, connected with the Belgian Congo Region, in a work relating to the hygiene of the Congo country, in which a careful study is made of the climate of that region, takes the ground that malaria often begins in that region with digestive disorders. Studies of this question, which have been made by various observers in recent times, have accumulated much evidence in support of the view that malaria is commonly introduced into the system through the alimentary canal, either by drinking water infected with the parasites, or by receiving the parasites into the mouth through the inhalation of infected fogs. The giant cells exercise a protective influence through the action of phagocytes, a function which they exercise in a high degree. It seems very probable, indeed, that on the disablement of these cells through the toxic influence of the products of indigestion, the system loses its ability to defend itself against the parasitic action of malaria, and thus becomes subject to disease under conditions which would not produce the disease in a perfectly healthy person. Many physicians have noticed the relation between the liver and digestive disorders in malarial disease. This subject is one concerning which we shall doubtless know more a few years hence.

Bad Filters.— The *British Medical Journal* recently published a report by Prof. Hankin upon the subject of filtration in the prevention of cholera and typhoid fevers. The report of the professor is based upon a careful investigation of a cholera outbreak in India in which an investigation was made of the various methods of filtration. It was found that all filters except the Pasteur-Chamberland and the Birkefeld, which are unglazed porcelain filters, not only do not protect against cholera germs, but actually encourage infection, by retaining the microbes and enabling them to breed, thus actually contaminating water which before filtration did not contain microbes. In one case, cholera was traced to the use of water which contained no cholera microbes before filtration. In this instance the water was filtered through sand. It was found that the sand contained cholera microbes, thus infecting the water.

Cigarettes.— Unquestionably one of the greatest evils threatening the health and morals of the boys at the present time is the use of cigarettes. The extent to which cigarettes are employed is probably not generally known. For the purpose of getting information upon the question I sent a letter to one of the largest cigar manufacturers in the country, asking for information respecting the number of cigarettes manufactured in this country. I received in reply the statement that there were manufactured in 1894 more than three thousand millions of cigarettes. Cigarettes are, for the most part, consumed by boys and young men. Every one using tobacco in this or any other form is under the influence of a poisonous drug, which exerts a pernicious and demoralizing effect upon body, mind, and morals. A crusade against cigarettes is as much needed as any reform movement at the present time.

FAT AND BLOOD.

AMONG the most troublesome cases with which the physician has to deal are patients who are thin in flesh, and yet are unable to digest either starch or fats. These cases are by no means very uncommon. Free fats are somewhat irritating to the stomach, and interfere with the digestion of food in the stomach by smearing over the particles of food substance, thus delaying, to some extent at least, the action of the saliva and the gastric juice upon the starch and albumin. This difficulty may be met by the administration of fats in an emulsified or digested form. In a few cases cream answers this purpose admirably, but dilatation of the stomach exists in so large a proportion of dyspeptics of all classes that it is not uncommon to find cases in which cream and milk in all forms, except perhaps kumyss, kumyzoon, or buttermilk, aggravate the symptoms. Butter is particularly harmful in these cases, because of the great quantity of microbic ferments which it contains and the presence of fatty acids, the products of fermentation which is taking place either before or after churning.

Animal fats of all sorts are particularly prone to take on a butyric acid fermentation in the stomach, especially in stomachs which are the seat of motor insufficiency, or in which the contents of the stomach are not absorbed or emptied out into the intestines with sufficient promptness.

We have found it advantageous in these cases to introduce the oleaginous food elements in the form of perfectly fresh emulsified and sterilized vegetable oils. In this country it is practically impossible to obtain these oils commercially in a pure and perfect state. After some years of experimentation, we have discovered an excellent way in which to utilize the fat of nuts. The fat of nuts may be used either in the form of very fine nut meal or in the form of freshly expressed nut oil. We have found best of all, nut meal and the product obtained in the manufacture of nut meal,—what might be termed nut butter, in which the oil is in a state of perfect natural emulsion, and being sterilized in the process of manufacture, is perfectly sweet and wholesome.

By the combination of this nut butter with the products of the diastatic digestion of starch, we have an ideal peptogenic and fat-producing substance. The addition of the proteid element of nuts with the phosphates and other organic salts normally associated with the animal and vegetable proteids, and which give to these elements their powerful restorative properties, results in a combination which may be regarded as perfect food, possessed of the highest degree of blood and fat restorative qualities.

From experiments which we have recently made, various foods have been prepared, and one of these foods, sold by the Sanitas Food Co., under the name of "Bromose," have given us very satisfactory results. The composition of bromose, as found by an analysis made by Prof. Gomberg, of the University of Michigan, is as follows: —

Emulsified fat	24.06%
Proteids, thoroughly cooked and finely divided	19.62%
Maltose (digested starch)	21.58%
Dextrine (including a small amount of undigested starch)	17.82%
Salts	1.78%
Water	15.14%

From the above analysis it will be seen that bromose is an ideal food for all classes of persons with feeble digestion who need an increase of fat and blood. The starch, being almost completely digested, is ready for either absorption or to be passed along into the small intestine, to be there inverted and absorbed. The fat, being thoroughly emulsified, mingles readily with the fluids of the stomach without interfering with the action of either the gastric juice or of the saliva upon the food elements which they digest. The proteids in the form of vegetable

albumin and casein are in a state of exceedingly fine subdivision, thoroughly cooked and ready to be promptly acted upon by the gastric juice. With the addition of a little water, bromose has the appearance of rich milk, a very agreeable flavor, and, being possessed of powerful peptogenic properties, is not only a food of the highest value in itself, but aids in the digestion of other foods.

For fever patients, bromose furnishes exactly the elements which are needed, and in most admirable form. The digested starch and fat, being prepared for perfect assimilation, diminish the loss of flesh by the exaggerated oxidation which is taking place under the influence of the hyper-excitation of the thermal centers. The easily assimilable proteids supply, in the best possible form, the means of repairing the damage resulting from the excessive nitrogenous waste which sometimes, in fevers, amounts to two or three times the normal amount.

Milk possesses some of these advantages in a moderate degree; its fat is emulsified, but its sugar (lactose) more closely resembles cane sugar than the products of starch digestion, while the casein which it contains in so large a proportion is very likely to form hard and indigestible curds in the stomach, which, being retained and undergoing decomposition, add fuel to the flame of the disease by the production and absorption of ptomaines through the action of germs. The secretion of hydrochloric acid is likely to be deficient in cases of fever, hence the great value of a peptogen like bromose, and hence also the value of a food in which the proteids are so finely divided that the labor of the stomach will be as small as possible. Dryness in the mouth in fever is also indicative of deficient activity of the salivary glands, so that starch digestion must be defective in fever; hence the value of a food in which the starch is already digested by a natural diastatic process, for persons suffering from dilatation of the stomach, for feeble infants, and for aged persons, or for cases of hypopepsia in which a peptogen is needed. In cases of hyperpepsia, in which starch digestion is in a dormant condition, the only cases in which a rapid gain in flesh and blood is needed, bromose seems to hold out the promise of being the nearest possible approach to a panacea.

A CAUSE OF NERVOUS DISEASE.— Dr. Beers, a writer in the Columbus *Medical Journal*, speaks as follows concerning the cause of the increase of nervous diseases so noticeable at the present time : —

"One of the principal reasons, in my opinion, for the enormous increase of nervous diseases, is to be found in the management and rearing of the infant as practiced now and for some time past, especially in the average American families.

"It is almost a universal fact that from the hour of its birth to the hour of its maturity the American infant is constantly subjected to a course of stimulation, so far as the nerve centers are concerned. The young parents, and the older ones, as well as the grandparents and uncles and aunts, are each and all so anxious to have the baby a smart, cute little thing, that every device that can be thought of is resorted to in order to stimulate the child's mental faculties, and to have it notice objects as soon as possible; and here let me say that I really believe in some instances they have succeeded in developing that faculty as early as the first few days of life. As the infant grows older, it is urged by every means known to humanity to talk, to give expression to its thoughts in any possible way or form; and by the time such an infant is four or five years old its nerve centers have been so fearfully developed and overstimulated that it is quite possible for it to give expression to opinions and ideas which would compare favorably with those of maturity. This condition of things is made to ramify every channel of life which it is possible to bring before the infant; and such conditions are continued until the child degenerates into hopeless lunacy from overstimulation, or else 'becomes its own master,' as the saying is. When such an infant has reached its majority and maturity, it usually comes before the world with a nervous system already wrecked by having been overstimulated and developed, and therefore, unable to stand the strain usually demanded from a healthy, well-balanced system."

With these remarks by Dr. Beers, the editor very heartily agrees. Other modes of stimulation, however, than those mentioned must be added, as, for example, stimulating diet, the use of flesh food, condiments, highly seasoned sauces, etc. Doubtless, also, heredity has a decided influence in the predisposition to nervous disorders.

REMEDIES FOR HICCOUGH.— Galen recommended sneezing as a means of curing hiccough. A good remedy is holding the breath until the paroxysm is interrupted. Drinking a glass of plain soda-water sometimes succeeds, and in obstinate cases electricity is useful. It should be applied on either side of the body just beneath the ribs.

ANSWERS TO CORRESPONDENTS.

"FAT-TEN-U," ETC.— Mrs. C. S. P., Texas, asks: "1. What do you know of 'Fat-Ten-U' and 'Corpula Foods,' advertised by Loring and Co., Chicago? 2. Is there merit in them?"

Ans.— 1. Nothing.

2. Probably not.

TINGLING SENSATION IN FINGERS — PAIN IN ARM, ETC.— Mrs. C. S. G., Kans., writes as follows: "1. Ten years ago a woman noticed that in sewing by hand for any length of time there was a tingling sensation in three fingers of the right hand. This trouble has slowly increased until now it is hard for her to sew or write, and there is pain in the whole arm at times, often on awakening in the morning. Sometimes the tingling is in the thumb and the two adjoining fingers. What final result is indicated from this? 2. Is it paralysis? 3. Can the volatilizer be used by different persons?"

Ans.— 1. The lady is evidently suffering from an affection of the nervous system. Her case should be placed under the care of a skilful physician at once. Would advise her to visit the Sanitarium at Battle Creek, at once.

2. Probably.

3. Yes.

PIMPLES AND BOILS ON THE FACE, ETC.— M. W., Mich., asks: "1. When pimples and boils break out on the face, what treatment should be given? 2. I have steamed the surface, and applied fomentations for a number of weeks, but they still keep coming. What is the cause? 3. I am gaining in health and strength all the time. How long ought I to keep up the treatments prescribed by the Sanitarium physicians?"

Ans.— 1. Measures should be taken to purify the blood. It is probable that the stomach is more or less disturbed, which will require a regulation of diet. In some cases a lotion for local application is needed.

2. There is evidently an internal cause which must be removed.

3. The case is probably one which requires local treatment in addition to constitutional treatment. You should continue the treatment until your physician orders it stopped. If you are in doubt about the matter, consult your physician.

PAIN AT THE BASE OF THE SPINE — DISTRESS IN THIGHS, KNEES, AND ANKLES, ETC.— Mrs. A. D. C., N. Dak., writes thus: "1. Between one and two years ago, I began to be troubled with a dull pain at the base of the spine. Electricity always relieved it, but after an interval it invariably returned. For the last few years it has grown perceptibly worse, and for the last year I have had it almost constantly. The skin over the sore spot grows tender, small red pimples appear, and the slightest rubbing abrades the surface. Sometimes I cannot sit more than ten or fifteen minutes at a time without great discomfort. At such times the only way in which I can rest is by lying on my face, which is very uncomfortable, owing to tenderness in the pit of the stomach. I have sometimes been free from this pain for two or three weeks at a time, but upon its return I immediately lose what strength I have gained in the interval. I have a good deal of distress in the thighs, knees, and ankles; the fourth toe of the left foot is also affected, and is often troublesome. It and the right knee together render me quite lame sometimes. Do my symptoms indicate spinal disease? 2. Please suggest the probable cause of these ailments, and also a proper course of treatment."

Ans.— 1. The patient is evidently suffering from hyperesthesia of the abdominal sympathetic nerve. The pains are reflex.

2. The patient should visit the Sanitarium for a thorough course of treatment. Fomentation applied over the stomach at night, to be followed by a moist abdominal bandage to be worn through the night, and a proper regulation of diet will probably give relief.

TREATMENT FOR TYPHOID FEVER.— J. S. C., Col., asks: "1. What is the new treatment for typhoid fever, as given by Dr. C. E. Page, of Boston? 2. Is it the 'Brandt' system?"

Ans.— 1. We do not know of any new treatment for typhoid fever.

2. The "Brandt" treatment is a quarter of a century old.

COLDS. — S. R. C., Ark., writes as follows: "1. Please tell us about colds. The current information on the subject is unsatisfactory. What is a cold? 2. Why does a person take cold? 3. Why does an individual take cold at one time and not at another under worse conditions or in worse weather? 4. I have supposed that colds were largely caused by eating too much. Is this true? 5. Please outline the proper treatment for a cold."

Ans.— 1. The term "cold" is a misnomer. The condition of a person who has a cold is that of a slight fever and retained excretions.

2. A partial cold is an impression made upon the skin whereby, through a reflex action, an internal congestion of some organ or set of organs is produced. This is the cause of the obstruction of the nose, soreness of the throat, soreness of muscles, catarrh of the bladder and bowels, and other symptoms which accompany a cold.

3. Whether or not a person takes cold at any time depends upon the state of his vital resistance. A cold results from the inability of the skin to react to the impression made upon it. In a condition of fatigue, or when the body is depressed from any other cause, reaction is less likely to occur and a cold is the result.

4. Overeating, by filling the system with waste matters and exhausting the vital forces, produces depression and thus predisposes to the taking of cold.

5. A day's fasting and an abstemious diet for a number of days, copious water drinking, free evacuation of the bowels, exercise in the open air, sleeping in a cold room and cold bathing, are the general means of curing as well as preventing a cold. The local symptoms, as soreness of throat, catarrh of the nasal cavity, etc., require local measures. The Perfection Vaporizer, described in our advertising columns, affords the best means of applying local treatment for a cold.

FLEETING PAINS IN LIMBS — STIFFNESS AFTER SITTING. — L. A., Ill., writes: "1. I have been much troubled with fleeting pains, sometimes in the arms and sometimes in the legs. Also after sitting I am often a little stiff and find it hard to move easily. I notice no connection between the trouble and the weather, feeling quite as free from it in rainy weather as in dry. Since returning home from the Sanitarium I am carefully following my prescription in regard to treatment, diet, exercise, etc., and am otherwise doing well. Do the above symptoms denote rheumatism? 2. Please give me advice."

Ans. — 1. You are evidently in a condition bordering upon rheumatism, — in other words are acquiring the rheumatic diathesis.

2. Abundance of out-of-door exercise, an aseptic or vegetarian diet, copious water drinking, a morning cold sponge bath, are the best measures for combating this condition.

PAIN OVER THE EYES — DEAFNESS. — Mrs. L. W., Iowa, writes as follows: "I am twenty-eight years of age, and for three years have had a distressing pain in my head over the eyes. I cannot bear any heat on my head; it sometimes causes a sharp pain throughout all the front portion of the head. The top of the head is sore to the touch. I find that the pain affects my mind sometimes. I have never known anything of health principles. Please give me advice."

Ans. — You are probably suffering from disturbance of the abdominal sympathetic nerves. It may be you have a prolapsed or dilated stomach, or a prolapse of some of the other abdominal organs. Fomentations to the abdomen followed by a moist abdominal bandage to be worn during the night and a cool sponge bath in the morning will doubtless prove helpful. An abdominal supporter which can be obtained from the Sanitary Supply Co., Battle Creek, Mich., will doubtless be of service to you.

MICROBES — BEEF TEA — GOITER, ETC. — C. K. S., Wis., writes: "1. I have read that some kinds of microbes are an absolute necessity in the animal system, and that experiments have shown that if entirely eliminated the person or animal will grow very sick and even die. Is this true? 2. I understand that boiling will not extract any of the nutritious qualities from meat. Is soup, therefore, of no more value to the sick than water? 3. Can beef tea be condemned on the same principle, or is beef tea made without boiling, *i. e.* by pressing out the juice of the meat by machinery, and therefore contains all the nutritive properties? 4. What per cent of the people in this country probably have goiter? 5. Does it enlarge steadily? 6. Is it transmissible? 7. Can it be cured? 8. If so, how? 9. How much water per day ought a person to drink? 10. Do you believe that water washes out the system and the blood? 11. What are the effects upon the body of too little water? 12. What is the cause of a profuse and offensive perspiration under the arms? 13. How can it be remedied?"

Ans. — 1. You have been misinformed. Germs are in no way necessary for the support of the vital processes. An infant gets along very well without germs before birth, and might live in a germ-free atmosphere sustained by perfectly sterilized food, and probably live better under such conditions than when exposed to the influence of germs. Researches made in the Bacteriological Laboratory of the Battle Creek Sanitarium by an eminent bacteriologist, during the last season, show that when a person subsists upon perfectly sterilized food there are no germs in the stomach, the gastric juice being able to destroy those which enter from the mouth. There is no truth whatever in the idea that germs are an aid to the digestion, or that they are in any way necessary to the support of life.

2. In the process of boiling meat a small proportion of the nutritive elements is extracted by the hot water, but the extracted matters are, for the most part, innutritious and made up of poisonous substances.

3. An eminent French physician recently remarked that "Beef tea is a true solution of ptomaines."

4. Goiter is quite rare in this country. We know of no means of ascertaining the number of persons suffering from goiter, as our statistics relate to death and not to simple cases of disease. Goiter is rarely fatal in this country.

5. Goiters do not always continue to grow; they frequently cease growing after attaining a certain size.

6. Goiter itself is not a hereditary disease; the tendency to goiter may be hereditary.

7. This disease sometimes disappears with the improvement of the general health.

8. It is sometimes curable by the application of electricity. In some cases a surgical operation is required.

9. The amount of fluid received into the system must depend upon the kind of food eaten. If one subsists largely upon fruits and liquid foods, only a small amount of water need be taken. But if one employs chiefly dry food, water to the amount of two to four pints should be taken daily. In hot weather, when one perspires freely, a larger amount of water must be used than in cold weather, or when a smaller amount of fluid is thrown off through the skin. Persons who subsist largely upon a meat diet must use large quantities of water to aid the liver and kidneys in disposing of the excessive quantities of nitrogenous wastes, leucomaines, and ptomaines which are introduced into the system with food.

10. Most certainly.

11. The accumulation of poisons and depression of all the vital functions.

12. Decomposition of the perspiration.

13. By thorough cleansing and disinfection.

BICYCLE RIDING. — T. H., Cal., writes thus: "1. Having read an article by Dr. J. H. Kellogg on the benefits of bicycle riding, upwards of a year ago, I would like to ask, if, after longer experience in its use, you still find bicycle exercise as desirable for your patients as at that time? 2. I have a weak spine, especially through the lumbar region. Would you advise the use of the bicycle in my case?"

Ans. — 1. Yes.

2. The weakness of the spine is probably only a symptom. The cause may be some displaced organ. Such displacement must be corrected before the bicycle is beneficial or even safe. The same must be said also of health exercises of every sort.

RELIEF DEPARTMENT.

[THIS department has been organized in the interest of two classes: —

1. Young orphan children, and
2. The worthy sick poor.

The purposes of this department, as regards these two classes, are are follows: —

1. To obtain intelligence respecting young and friendless orphan children, and to find suitable homes for them.

2. To obtain information respecting persons in indigent or very limited circumstances who are suffering from serious, though curable, maladies, but are unable to obtain the skilled medical attention which their cases may require, and to secure for them an opportunity to obtain relief by visiting the Sanitarium Hospital. The generous policy of the managers of the Medical and Surgical Sanitarium has provided in the Hospital connected with this institution a number of beds, in which suitable cases are treated without charge for the medical services rendered. Hundreds have already enjoyed the advantages of this beneficent work, and it is hoped that many thousands more may participate in these advantages. Cases belonging to either class may be reported in writing to the editor of this journal.

It should be plainly stated and clearly understood that neither orphan children nor sick persons should be sent to the Sanitarium or to Battle Creek with the expectation of being received by us, unless previous arrangement has been made by correspondence or otherwise, as it is not infrequently the case that our accommodations are filled to their utmost capacity, and hence additional cases cannot be received until special provision has been made.

Persons desiring further information concerning cases mentioned in this department, or wishing to present cases for notice in these columns, should address their communications to the editor, Dr. J. H. Kellogg, Battle Creek, Mich.

☞He wishes especially to state that those who apply for children will be expected to accompany their applications by satisfactory letters of introduction or recommendation.]

NOS. 262 AND 263.— A little boy and girl eight and six years old living in Pennsylvania have been brought to our attention. They are motherless, and their father, being in very poor circumstances, needs assistance. He desires to place his children in the homes of Christian people. We learn that they are good children, easy to teach, and of good appearance. They are now with their aged grandparents, who cannot care for them longer.

No. 281 is a Swedish boy ten years of age, with brown eyes and dark hair, and having good health. No. 282 is his brother, seven years of age. He has blue eyes and light hair. The father and mother of these children are both dead, and they have been cared for by their grandparents for three years. They cannot provide for them longer, and rather than place them in the poorhouse they apply for a home in a private family.

NOS. 285 and 286 are boys living in Pennsylvania. Their condition is like several that have been referred to us before, and from what we learn of them we are satisfied that they are worthy of help. Their father is dead and the mother not able to care for them. She has tried for the past few years to keep them with her, not wanting to part them, but has now reached the point where she can see no other way than to place the children in homes. The boys are seven and eight years old, have blue eyes and brown hair, and are in good health. The mother has kept them with her most of the time.

NO. 287 is a little nine-year-old boy living in Michigan, whose mother desires to place him in a Christian home. His father has deserted him, and his mother is not able to support him. He has blue eyes and light hair.

NOS. 293 and 294 are girls living in Pennsylvania. Their mother is dead and the father is an inmate of the poorhouse. He is unable to provide for the children, and is very anxious to secure good homes for them. The girls are twelve and nine years old and have dark eyes and hair, are in good health, and have good dispositions. Is there not a home in one of the Eastern States that will open its doors to these children who are in such great need?

NOS. 296 AND 297.— Two little girls living in Kansas. They are five and six years of age and are in need of a home. They have dark eyes and light hair and are said to be well behaved and very quiet. Their father is dead, and the mother, not being able to provide for them, is very anxious to find good homes for them. She would prefer to find a home for herself with them. Will not some one offer them a home?

NOS. 298 and 299 are two little girls aged eight and six years respectively, who are living in one of the New England States. They have blue eyes and light hair, and have had the best of training while their mother was alive. The father is very anxious to find good homes for them, as he does not feel competent to give them proper care and training. Here is a chance to do real missionary work.

NOS. 301–303.— These are three children living in Indiana, whose father has deserted them, and the mother, rapidly failing in health, is very anxious to find good Christian homes for them. The oldest is a girl of eleven years, with brown eyes and light hair. The little girl five years old is a sweet-appearing child, with light hair and blue eyes. Their brother is eight years old, with brown eyes and hair. They have been under their mother's control and

not allowed to run in the streets. Who will relieve this mother's anxiety by offering homes for these children?

No. 305 is a boy twelve years old living in Michigan. He has been abandoned by both father and mother. He has good health, and is a bright, kind-hearted boy with blue eyes and light hair. He needs careful training, but Christian influence and love will doubtless yield a rich harvest.

No. 306.—Here is a baby boy only four months old who is sadly in need of a home. His father has abandoned him and the mother is anxious to place him in a good Christian home. He has dark blue eyes and light hair and is in good health. The mother and child are at present staying with friends, but will soon have to look for shelter elsewhere. Will not some one offer to take this little one and give him the influence of a Christian home?

NOS. 307, 308, AND 309.— Here is another case, and like many others, the father is dead and the mother being in poor health is no longer able to provide for them. Two girls aged respectively nine and four years have blue eyes and light hair. The little boy is seven years old and has black eyes and hair. These children have not been allowed to run the streets nor acquire bad habits. They are sadly in need of a good home, as the mother can keep them no longer.

SEVERAL months ago we tried to find homes for two fatherless boys, Nos. 242 and 243, but we did not succeed in finding any such as we wanted; so the mother thought she might manage to support them herself. This she did by hard work, but found she could not do so very long, so she applied again for assistance. After a little correspondence with parties who had been highly recommended to us, she found places for the boys, one going to the State of Iowa and the other to Minnesota. Since the boys have been in their new homes, their mother has been quite sick, so, as she says, it seems providential that they obtained homes just when they did, for she does not know what would have become of them during her illness. There is ofttimes a period of waiting, a chance for us to exercise trust, but He who knows all gives us the needed help at the right time.

WE are in receipt of a letter from a lady who adopted a little girl some time ago and now makes application for two more children. We quote the following from her letter: —

"My heart goes out toward the little homeless ones and I feel as though I would like to take them all if I could. This I cannot do. I am situated so that I cannot do much in the cause I love so well, but I thought that I could take some of God's little lambs into my home and feed them, and by his help train them up for a home in his kingdom. You will remember my writing you about the little one I took some time ago. She is growing, and getting along nicely, and is one of the happiest little ones that I ever saw. We all love her dearly. My daily prayer is that I may have wisdom and grace sufficient to bring up the little lambs entrusted to me in such a way that they and my own dear ones may all have a home in the earth made new. I realize that it is only by the help of God that I can do this. I believe I realize as never before the great responsibility there is resting upon a mother in training her children up right."

PERSONS making applications for children advertised in this department are requested to send with their applications the names and addresses of two or more persons as references. If possible, these should be known, either personally or by reputation, to some member of the Board of Trustees.

PERSONS intending to visit the Haskell Home will please note that the visiting days are Sundays and Wednesdays, from 4 to 6 P. M. J. H. KELLOGG.

CLOTHING FOR THE POOR.

THE call for clothing of all kinds and the numerous offers to supply assistance of this sort, have led us to organize a Clothing Department to receive and properly distribute new or partly worn garments which can be utilized for the relief of the very poor. In connection with this work it is very important that a few points should be kept in mind and carefully observed: —

1. Clothes that are so badly worn that repairs will cost more in money or labor than the garment is worth, will of course be of no service. Garments that are old, though faded, or which may be easily repaired by sewing up seams, or made presentable by a few stitches judiciously taken at some point in which the fabric is nearly worn through, may be utilized to most excellent advantage. But garments so badly worn that they need extensive patching, or clothes which have become much soiled and grimy by long use in some dirty occupation, should find their way to the rag bag instead of the missionary box.

2. Freight must always be prepaid. It costs as much to send 25 pounds or any amount less than 100 pounds as to send the full 100 pounds; consequently it would be well for those who think of sending clothes to be used in this department, to put their contributions together in one shipment, so as to get the benefit of the 100-pound rates. *We are obliged to ask that freight should be prepaid as a means of preventing loss to the work in the payment of freight upon useless packages.*

3. Clothes that have been worn by patients suffering from any contagious disease — such as typhoid fever, erysipelas, consumption, and skin disorders of all sorts, as well as scarlet fever, measles, mumps, diphtheria, and smallpox — should not be sent. Infected clothes may be rendered safe by disinfection, but we cannot trust to the proper disinfection of such garments by those sending them, who, in the majority of cases, are quite inexperienced in such work; neither should those who unpack the clothes be exposed to the risk of contamination while preparing them for disinfection at this end of the line. Such clothes should, as a rule, be destroyed. If they are not destroyed, almost infinite pains is required to render their use perfectly safe.

4. All articles received here are carefully assorted and classified, and are then placed as called for, where they will do the most good.

5. Clothing intended for the Chicago mission should be sent to Chicago Medical Mission, 40 Custom House Place, Chicago, Ill.

LITERARY NOTICES.

THE FUNK AND WAGNALLS STANDARD DICTIONARY. — After all is said concerning special features, nine times out of ten when a reader consults a dictionary in connection with one of the common words it is for one of three things — its spelling, its preferred pronunciation, or for its every-day or most common meaning. The test, to the average reader, of a dictionary's efficiency will be the manner in which it meets such demands.

The general definitions of the Standard, from a careful comparison of many of them with the other dictionaries, excel in the points of clearness, sententiousness, and brief comprehensiveness. In other words, they are exact, terse, and clear-cut— brief when few words are sufficient, but by no means discarding even encyclopedic treatment when the importance of the subject demands it. The somewhat indeterminate and elusive preposition *of* is a fine example of brief but comprehensive treatment; *beer*, *coffee*, *tea*, and *tobacco* are good types of encyclopedic treatment when required by the economic importance of the subject.

The spelling of every one of the 300,000 words has received the attentive consideration of the eminent philologist, Professor F. A. March, LL.D., and the decisions seem, from an examination of a number of test words, to have been made in such a way as to avoid equally offensive new departures and that conservatism which clings blindly to mistaken forms that obviously should be corrected. In these respects the Standard is a safe and impartial guide.

THE leading article in *Table Talk* for November is, "Thanksgiving Day," by Mrs. Burton Kingsland, including a typical dinner menu, — also a *fin-de-siecle* one. The Housekeeper's Inquiry Department is full of recipes, old and new, and besides, the Kindergarten for Mothers is ably upheld in "The Priestly Office," by Miss Nora A. Smith; the "Food in Bright's Disease," by Dr. H. H. Hawxhurst; "How Miss Dorothy Entertains," by Mrs. E. C. Meyer; much about "The Dignity and Beauty of the Household Arts," by Lucy C. Andrews, the well-known lecturer on cookery; how to give a pretty "Bicycle Luncheon," and much also of equal value our limited space does not allow us to mention. Our readers, however, are invited to send for a sample copy to the Table Talk Publishing Company of Philadelphia.

IN the October *Arena* the editor gives a charming historical sketch of "Chester-on-the-Dee," the only walled city in England, and a place exceedingly rich in historical interest. This contribution is made especially attractive by a number of exceedingly fine full-page illustrations. Mr. Flower also contributes a paper on "Sir Thomas Moore," which is one of the series of papers on the Renaissance which have been appearing in the *Arena*. The brilliant, logical, and incisive writer, Helen H. Gardener, also contributes her third paper on the history of the recent legislative Battle for Sound Morality. These contributions are of special value to all persons interested in protecting girlhood and raising the standard of morality.

"TRAVELS BY LAND AND SEA."— By G. C. Tenney. Illustrated. Published by the International Tract Society, Chicago, Ill., Battle Creek, Mich., and London, Eng.

This is a work containing a vast deal of information in regard to foreign countries, packed in a very small compass. Four hundred pages is indeed a small space in which to condense the experiences of travel through the five great continents of the earth, and the author would certainly have been pardoned if, with the material which he evidently had at hand, he had given the public, instead of a single volume, two volumes of the present size. The illustrations are quite a prominent feature of the work, and being profuse and mostly from original photographs, they greatly conduce to the enjoyment of the reader, as well as contribute to the fine appearance of the book.

NEW MUSIC. — Two songs by Dora A. Grant, entitled, "Christ or Artemis," and "Oh! Must the Dear Old Home be Sold?" have just come to our table. The first is descriptive of that wonderful painting by Sir Edwin Long, of the Christian maiden who, resisting the entreaties of priests, friends, and lover, would not throw so much as a grain of incense into the fire, to show her allegiance to another god. The melody is pleasing, and the song is calculated to do good in the cause of Christianity. The nature of the second song is shown by the title, — one of those touching reminders of loved homes and their pleasures. The music may be ordered of any music dealer. Price of each, 40 cents.

PUBLISHERS' DEPARTMENT.

By recent letters from D. T. Jones, superintendent of the sanitarium enterprise at Guadalajara, Old Mexico, we learn that a fine site has been selected and purchased for the sanitarium which is to be built in that city. The institution is to be located in the most delightful portion of the city — a park which is devoted to pleasure gardens. It will be surrounded by large, beautiful gardens owned by wealthy citizens, many of whom reside in the same locality. The development of the sanitarium enterprise in Guadalajara has been phenomenally successful, and it is believed that the success of the work will continue. The only sad event thus far connected with the mission is the recent death of Mr. Archie Rice, one of the nurses sent out under the Medical Missionary Board to work in connection with the mission. Mr. Rice fell at his post a victim to typhus fever, doubtless contracted in his labors among the poor, to whom his whole attention was given. Mr. Rice was a brave and faithful young man, and his untimely death will be lamented by all who were acquainted with him. Another nurse has already been appointed to take his place.

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The Sanitarium at Portland, Oregon.— For a long time past the friends of sanitary reform and rational medicine have been calling for a sanitarium in Portland, Oregon. For more than a year, Dr. L. J. Belknap has been on the ground, opening the way, and has built up a very successful practice. At a recent meeting of persons interested in the advancement of the principles of hygienic reform and modern methods of dealing with disease, a committee was appointed to take preliminary steps for the establishment of a work in Portland akin to that which has so long been conducted at Battle Creek, Mich., and at St. Helena, Cal., and which is now being developed at Lincoln, Neb., Boulder, Colo., and in various other localities, under the auspices of the Medical Missionary and Benevolent Association. A unique feature of all the sanitarium enterprises established under the supervision of this Association is their philanthropic character. Each of these institutions is a self-supporting philanthropic and missionary enterprise, unsectarian in its character and beneficent in its influence.

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Improvements are always in order at the Sanitarium. The Sanitarium managers are now building a chapel which for many years has been greatly needed. The new structure will be located at the east end of the gymnasium, with which it will be connected. It will be so arranged that the gymnasium can be used as an audience room in connection with it, thus giving a seating capacity of about 1000 persons. The architect and builder, Mr. W. C. Sisley, is pushing the work rapidly, and it is hoped the building will be ready for use this winter.

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The State Public School.— The State Public School, for the care of the dependent, neglected, and ill-treated children of Michigan, is an institution of which the people of Michigan may well be proud. It has solved the financial problem of taking care of these children, and as a protective measure against pauperism, vice, and crime, its value to the public is immeasurable. Before its foundation there was no place for the children thrown upon public charge, except the county houses, where they were necessarily under the debasing influence of pauperism and vice. At a time in their lives when impressions received are most lasting, they were thrown among those whose influence is almost uniformly bad, and their young lives were thus blighted.

The establishment of the State Public School marked an epoch in the child life of Michigan. The State assumes the right to the guardianship of those children who are dependent, neglected, or ill-treated, and cares for them by furnishing them a temporary home at the school, where, by means of perfect physical comfort and healthful moral training, they are led to forget their old life, and become prepared to take their places with their more fortunate fellows in the families and public schools throughout the State.

Before admission to the school, they have known little of comfort and happiness. Their residence there, short though it usually is, gives them a new idea of life, and they have no desire to return to the old manner of living. The price of admission is dependence or ill-treatment, and the qualifications are that they shall be between one and twelve years of age and sound mentally and physically. They are not tainted with crime.

Since the opening of the institution in 1874, nearly 3500 children have been received and cared for. There are now in the institution about 220, and over 1100 are with good families throughout the State and under the supervision of the school. The others have passed out from under the school's control. Those with families are placed on contracts which provide for their proper care and education.

Is it not probable that there are many in this vicinity who would gladly take one or more of these children into their homes and make them their own ?

The best selections are boys from four to eight years of age, and it is believed that the homes would be blessed fully as much as the children by taking the children into them.

Any information desired may be had by addressing A. J. Murray, Superintendent, Coldwater, Mich., or H. C. Whitney, agent for Calhoun county, Battle Creek, Mich.

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The *American Medical Temperance Quarterly* has recently changed its name and form, and has become a thirty-two-page monthly, with the name *Bulletin of the American Medical Temperance Association.* Drs. N. S. Davis, Chicago, T. D. Crothers, Hartford, Conn., and J. H. Kellogg, Battle Breek, Mich., still remain the editors. This journal is widely circulated, and is doing a good work in the interests of medical temperance.

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The Sanitarium Health Food Company are now running three bakery plants, and find their facilities taxed to the utmost to keep up with their orders. The marvelous development of the business of this company within the last few months is an indication of the growth of interest among the people in pure and healthful food products. Several tons of the unrivaled foods prepared by this com-

pany are frequently shipped out in a single day. This department of the institution now employs over fifty persons, and the prospect is that in the near future a still larger number will be demanded, and that larger facilities will be required.

***

BROMOSE.—Bromose is the name of a new food recently developed by the Sanitas Food Company, who are giving special attention to the preparation of foods specially designed for use by the sick, and to meet specific requirements. Bromose is intended particularly for persons who require to make a rapid increase in fat and blood. It is a very palatable preparation and is a perfect substitute for cod-liver oil, cream, butter, and all other forms of fat which so many invalids are unable to digest. It is also a perfect food consisting of freshly prepared nut oil in a state of natural emulsion, hence is ready for immediate assimilation. In addition to this important element, Bromose contains a proportion of nitrogenous elements almost equivalent to that of the best beefsteak. It is readily assimilable by the most feeble stomachs, and for persons who cannot digest starch and fats, it is an invaluable food remedy. It not only affords nutriment of the most valuable kind for a very large class of invalids, but is also itself an aid to digestion, stimulating the secretion of healthy gastric juice, and hence is valuable in hypopepsia, and in most cases of feeble digestion.

***

WINTER TOURS.—The Michigan Central has placed on sale winter tourist tickets to all the principal Southern winter resorts at reduced rates. For full particulars address, Geo. J. Sadler, Pass. Agt., Battle Creek, Mich.

***

ATLANTA EXPOSITION.—The Michigan Central will sell special tickets to Atlanta, Ga., and return, as follows: On Nov. 15–25 and Dec. 5 and 16, at the rate of $20.10, good for ten days. On sale every day at rate of $24.50, good for twenty days. On sale every day at rate of $33.70, good until Jan. 7, 1896.

***

ARE YOU GOING North, South, East or West; if so, write me. I can interest any one desiring a new location to build a home, or engage in fruit raising, or diversified farming; send a postal card giving your address, and I know you will be interested. Harry Mercer, Mich. Passenger Agent, Chicago, Milwaukee & St. Paul Railway, 7 Fort Street, West, Detroit, Mich.

***

AN enigmatical bill of fare, for a dinner served on the Dining Cars of the Chicago, Milwaukee & St. Paul Railway, will be sent to any address on receipt of a two-cent postage stamp. Apply to Geo. H. Heafford, General Passenger Agent, Old Colony Building, Chicago, Ill.

***

FROM now until spring, overcoats and winter wraps will be in fashion. They can be discarded, temporarily, while traveling in the steam-heated trains of the Chicago, Milwaukee & St. Paul Railway. For solid comfort, for speed, and for safety, no other line can compare with this great railway of the West.

HYDROZONE

IS THE STRONGEST ANTISEPTIC KNOWN.

One ounce of this new Remedy is, for its Bactericide Power, equivalent to two ounces of Charles Marchand's Peroxide of Hydrogen (medicinal), which obtained the Highest Award at the World's Fair of Chicago, 1893, for its Stability, Strength, Purity and Excellency.

CURES DISEASES CAUSED BY GERMS:

DIPHTHERIA, SORE THROAT, CATARRH, HAY FEVER, LA GRIPPE,—OPEN SORES: ABSCESSES, CARBUNCLES, ULCERS,—INFECTIOUS DISEASES OF THE GENITO-URINARY ORGANS,—INFLAMMATORY AND CONTAGIOUS DISEASES OF THE ALIMENTARY TRACT: TYPHOID FEVER, TYPHUS, CHOLERA, YELLOW FEVER,—WOMEN'S WEAKNESSES: WHITES, LEUCORRHŒA,—SKIN DISEASES: ECZEMA, ACNE, ETC.

SEND FOR FREE BOOK OF 152 PAGES GIVING FULL INFORMATION.

PHYSICIANS REMITTING TWENTY-FIVE CENTS POSTAL ORDER WILL RECEIVE FREE SAMPLE BY MAIL.

AVOID IMITATIONS.

HYDROZONE is put up only in small, medium and large size bottles, bearing a red label, white letters, gold and blue border.

GLYCOZONE
Cures
Diseases of the Stomach

Sold by Leading Druggists.

MENTION THIS PUBLICATION.

PREPARED ONLY BY Charles Marchand

Chemist and graduate of the "Ecole Centrale des Arts et Manufactures de Paris" (France).

28 Prince St., New York.

Special Announcement.

GOOD HEALTH LIBRARY.

THE publishers of "GOOD HEALTH" propose to begin at an early date the publication of a series of small tracts and booklets under the general title, **"THE GOOD HEALTH LIBRARY."** The following is a partial list of the numbers in preparation:—

Household Germs.

A Toothless Race.

Death in the Pot.

The Smoke God.

The Troglodytes.

Combating Germs in the Sick-Room.

The White Plague.

Our Hidden Foes.

Bad-Air Maladies.

A Modern Moloch.

The publishers of "GOOD HEALTH" also desire to announce their expectation to publish at an early date, a series of vegetarian leaflets, and also several small booklets, of which they hope the following may appear soon:—

Consumption, Its Cause and Cure.

Recent Revelations of Science about the Stomach and Its Maladies.

Biliousness, Its Cause and Cure.

Other works in preparation are the following:—

The Hygiene of the Bible and Bible Times.

A Health Primer (illustrated).

Fashionable Deformities (illustrated).

GOOD HEALTH PUBLISHING CO., Battle Creek, Michigan.

PERFECTION VAPORIZER.

A New Instrument which has No Equal as a Means of Applying Medicaments to the Nose, Throat, and Lungs.

The **Perfection Vaporizer** has the following advantages over all others: —

1. It furnishes a continuous stream of medicated air, without the necessity of continuously working the bulb.

2. By its aid, medicated air may be introduced into the nasal cavity with sufficient force to cause it to enter the ears, frontal sinuses, and other connecting cavities.

3. It permits thorough treatment of the coats of the nose and throat at the same time, and so economizes time.

4. It is strong, does not upset easily, is durable and efficient. It embodies all the good qualities of any other volatilizer or vaporizer in addition to the above.

The **Perfection Vaporizer** is indispensable in the successful treatment of **Colds, Bronchitis, Nasal and Throat Catarrh,** diseases of the **Ears,** and in all other affections of the nose, throat, and lungs.

PRICE, $3.

MODERN MEDICINE CO., BATTLE CREEK, MICH.

The "Natural Abdominal Supporter"

Especially designed for persons of both sexes who are suffering from prolapse of the bowels or stomach, floating kidney, and other abdominal or pelvic displacements. The "Natural Abdominal Supporter" is more

Efficient, Comfortable, and Convenient

than any other which has been devised, and supports the organs of the abdomen in a natural way. No other single measure is so valuable in the treatment of the diseases of women and many forms of dyspepsia and constipation. Obviates the necessity for internal supports, and for surgical operations in many cases.

Does not interfere in any way with any bodily movement nor with the clothing. For descriptive circular, address,

MODERN MEDICINE COMPANY, Battle Creek, Mich.

GRANOSE,

A NEW FOOD-CURE for CONSTIPATION AND INDIGESTION.

GRANOSE is a preparation from wheat, in which all the elements of the grain are preserved, and by combined processes of digestion, cooking, roasting, and steaming, brought intc a state which renders assimilation possible with the smallest amount of labor on the part of the digestive organs. **It is accepted by many stomachs which reject food in all other forms.** GRANOSE has the advantage of being not only in the highest degree digestible, wholesome, and curative of many disorders of nutrition, but at the same time it is

THE MOST PALATABLE OF FOODS.

The delicate, nutty flavor of GRANOSE, its delicious crispness, its delicate, appetizing odor, and above all the remarkable manner in which it agrees with the most refractory and fastidious stomachs, justify the assertion that it easily surpasses, for general purposes, all other food preparations which have been placed upon the market.

A SOVEREIGN REMEDY FOR CONSTIPATION.

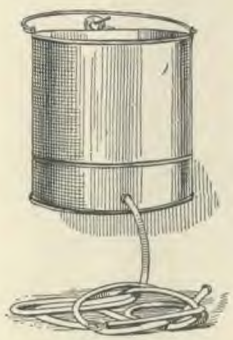
Within two or three days after beginning the use of this food, the great majority of persons suffering from chronic constipation find themselves ALMOST ENTIRELY RELIEVED, and the continued use of the food insures regular movements of the bowels in nearly all cases except those in which intestinal inactivity is due to mechanical causes, for the relief of which surgical measures are, of course, required.

Notwithstanding the above representations with reference to the excellent qualities of this food, the manufacturers assert, in the most positive manner, that **Granose is pure wheat,** containing no other ingredient whatever except a minute proportion of chloride of sodium. This food is already in use in a number of the principal sanitariums, in which it is daily verifying the above statements.

For sample, address,

SANITARIUM HEALTH FOOD COMPANY,
Battle Creek, Michigan.

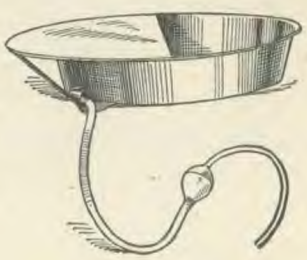
SANITARIUM DOUCHE APPARATUS



THIS apparatus consists of a pail for water, with a long rubber tube, and a convenient bed-pan. It is made of tin, and is light, durable, and easily cleaned and disinfected.

It is especially useful for giving douches in cases of confinement, and to feeble patients who cannot be removed from the bed.

It can be adjusted under the hips without moving the patient, on any form of bed or mattress.



Any amount of water can be used, the water running out as fast as it runs in. To start the water running, close the rubber tube by folding it below the bulb, and then squeeze the bulb, which will at once fill with water when released. Then open the tube, and the stream will continue to flow till the pan is empty. Sent by express.

SEND FOR CATALOGUE.

SANITARY AND ELECTRICAL SUPPLY CO., Battle Creek, Mich.

J. FEHR'S

"COMPOUND TALCUM"

"BABY POWDER,"

The "Hygienic Dermal Powder" for Infants and Adults.

Originally investigated and its therapeutic properties discovered in the year 1868 by Dr. Fehr and introduced to the Medical and the Pharmaceutical Professions in the year 1873.

COMPOSITION —Silicate of Magnesia with Carbolic and **Salicylic Acid.**

PROPERTIES —Antiseptic, Antizymotic, and Disinfectant.

USEFUL AS A GENERAL SPRINKLING POWDER,

With positive Hygienic, Prophylactic, and Therapeutic properties.

GOOD IN ALL AFFECTIONS OF THE SKIN.

Sold by the Drug Trade generally. Per Box, plain, 25c.; perfumed, 50c.; Per Dozen, plain, $1.75; perfumed, $3.50.

THE MANUFACTURER:

JULIUS FEHR, M. D., Ancient Pharmacist,

HOBOKEN, N. J.

Only advertised in Medical and Pharmaceutical prints.

Absolutely Pure Water

PRODUCED BY THE NEW

FAMILY AND PHARMACEUTICAL STILLS OF THE BOSTON DISTILLED WATER COMPANY.

Prices within the Reach of Everybody.

The Family Still will produce about five gallons, and the Pharmaceutical, about 15 gallons of pure water per day of ten hours. They are made of heavy planished copper, block-tin lined, and will last for years; are thoroughly automatic in operation, and after having been started, will, without further attention, continue the distillation process until the power is turned off.

PRICE OF FAMILY STILL, IN COPPER, - - - - - -	$12.00
PRICE OF FAMILY STILL, IN NICKEL PLATE, - - - - -	15.00
PRICE OF PHARMACEUTICAL STILL, - - - - - - -	30.00

Also Steam Stills with capacities ranging from 50 to 1000 gallons per day. Prices from $75.00 to $500.00. **Send for Circulars.**

BOSTON DISTILLED WATER COMPANY,

140-144 OLIVER ST., BOSTON, MASS.

BROMOSE...

Makes Fat and Blood.

BROMOSE, an exceedingly palatable food preparation, consists of cereals and nuts, in which the starch is completely digested, the nuts perfectly cooked, and their fat emulsified. It is thus ready for immediate assimilation. It is the most easily digested and most fattening of all foods, and at the same time rich in proteids, and hence **unequaled as a tissue builder.**

BROMOSE makes fat and blood more rapidly than any other food. It is the food par excellence for blood, brain, and nerves. Invalids whose troubles are due to the fact that they cannot digest the starch of cereals and vegetables, find in **BROMOSE A PANACEA.**

BROMOSE is rich in salts, as well as proteids and food elements. It is excellent for invalids who are thin in flesh, those who cannot digest starch, old people, feeble infants, consumptives, convalescents, fever patients, neurasthenics, and those who wish to **gain in flesh.**

SANITAS FOOD COMPANY

Battle Creek, Mich.

ESTABLISHED 1844.

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Time Table, in Effect Nov. 18, 1894.

GOING EAST. Read Down.					STATIONS.	GOING WEST. Read up.				
10 Mail Ex.	4 L'v'd Ex.	6 Ad. Ex.	42 Mixd Tr'n.	2 Pl. R Pass		11 Mail Ex.	1 Day Ex.	3 R'd L'v'd	23 R. C. Pass.	5 P'ge Ex.
a m	p m	p m				p m	p m	p m		a m
9.00	3.10	8.15	a m	.....	..... D. Chicago A.....	6.45	1.50	9.10	.....	7.50
11.25	5.05	10.30	6.00	.....	..... Valparaiso.....	5.05	11.35	7.10	.....	6.45
p m										
1.05	6.30	12.00	10.05	.....	.....South Bend.....	3.10	10.15	5.44	.....	4.10
1.46	7.12	1.45	12.40	.....	..... Cassopolis	2.15	9.40	5.13	.....	3.28
2.33	.....	†1.33	3.42	.....	.....Schoolcraft.....	1.20	.....	.....	.....	.....
2.44	7.55	1.48	4.50	a m	.....Vicksburg.....	1.10	8.52	.....	p m	2.37
3.30	8.36	2.40	6.20	7.00	.....Battle Creek.....	12.15	8.15	3.55	9.35	1.50
4.33	9.26	3.25	.....	7.47	.....Charlotte.....	11.14	7.23	3.07	8.40	12.53
5.10	9.55	4.00	.....	8.20	.....Lansing.....	10.40	6.53	2.40	8.00	12.20
6.30	10.45	5.03	.....	9.30	.....Durand.....	9.35	6.05	1.55	6.50	11.28
7.30	11.17	5.40	.....	10.05	.....Flint.....	8.35	5.35	1.28	5.47	10.35
8.15	11.50	6.15	.....	10.43	..... Lapeer.....	7.49	5.02	1.00	5.10	10.01
8.42	a m	6.35	.....	11.06	.....Imlay City.....	7.28	.....	.....	4.48	.....
9.50	1.00	7.30	.....	12.05	.....Pt. H'n Tunnel....	6.50	3.50	11.55	3.50	8.45
	p m					a m	a m	a m	p m	p m
9.25	.....	.....	.....	.....	..... Detroit.....	.....	.....	10.40	4.05	8.45
	a m	p m					p m			p m
.....	8.15	5.25	.....	.....	..... Toronto.....	.....	9.20	.....	.....	1.00
	p m	a m					a m			
.....	8.15	7.25	.....	.....	..... Montreal	.....	9.15	.....	.....	.....
	a m	p m					a m			
....	8.12	7.15	.....	.....	.....Boston.....	.....	8.30	.....	.....	.....
	a m	p m					p m	a m		p m
.....	7.50	4.25	.....	.....	.....Susp'n Bridge.....	.....	10.15	7.05	.....	2.25
	a m	p m								p m
.....	7.00	5.40	.....	.....	.....Buffalo.....	.....	.....	.....	.....	1.00
	p m	a m					a m	p m		p m
....	8.58	8.03	.....	.....	.....New York.....	.....	8.15	6.10	.....	8.00
		a m								p m
.....	.....	10.20	.....	.....	.....Boston.....	.....	.....	.....	.....	7.00

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STATIONS.							
Chicago.....	pm 9.30		am 6.50	am 10.30	pm 3.00		pm 11.30
Michigan City.	11.35		8.50	pm 12.08	4.50		am 1.19
Niles.....	am 12.45		10.15	1.02	5.55		2.45
Kalamazoo	2.15	am 7.20	11.52	2.16	7.21		4.35
Battle Creek...	3.00	8.10	pm 12.50	2.50	7.58		5.22
Jackson.....	4.30	10.00	2.40	4.10	9.30		6.50
Ann Arbor.....	5.40	11.05	3.50	5.00	10.32		7.47
Detroit.....	7.10	pm 12.20	5.30	6.00	11.15		9.20
Buffalo.....				am 12.10	am 6.45		pm 5.30
Rochester.....				3.00	9.55		8.40
Syracuse				5.00	pm 12.15		10.45
New York.....				pm 1.45	8.45		am 7.00
Boston				9.00	11.35		10.50

WEST.	*Night Express.	*N.Y.,Bos. & Chi.Sp.	†Mail & Express.	*N.Shore Limited.	*Weste'n Express.	† Kalam. Accom.	*Pacific Express.
STATIONS.							
Boston		am 10.30		pm 2.00	pm 3.00		pm 7.15
New York.....		pm 1.00		4.30	6.00		9.15
Syracuse.....		8.30		11 30	am 2.15		am 7.20
Rochester.....		10.37		am 1.20	4.10		9.55
Buffalo.....		11.45		2.20	5.30		pm 3.30
Detroit.....	pm 8.45	am 6.30	am 7.20	8.30	pm 1.00	pm 4.35	11.05
Ann Arbor.....	10.25	7.30	8.43	9.25	2.00	5.57	am 12.15
Jackson.....	11.40	8.35	10.43	10.30	3.02	7.35	1.25
Battle Creek...	am 1.17	9.48	pm 12.15	11.43	4.18	9.11	2.55
Kalamazoo	2.10	10.27	1.00	pm 12.22	4.57	10.00	3.36
Niles.....	4.00	11.48	3.00	1.40	6.27		5.00
Michigan City.	5.09	pm 12.50	4.25	2.45	7.22		6.00
Chicago.....	7.10	2.30	6.35	4.30	9.05		7.50

*Daily. †Daily except Sunday.

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Jackson " " east at 7.27 p. m. " "

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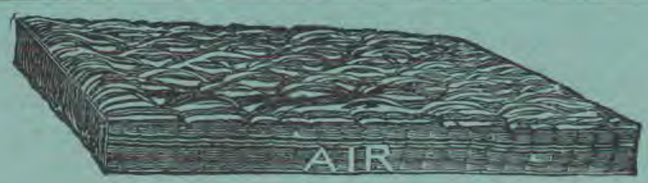

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