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HYDROTHERAPY IN HOT WEATHER.

BY J. H. KELLOGG, M. D.

COLD is a universal antidote for heat, as heat is for cold. We use water to put out fire, and fire to warm water. There are no disorders or morbid conditions which so readily respond to the use of water and which are so radically and readily benefited by hydriatic applications as those especially incident to hot weather. The public generally have found this out, and hence it is the custom in many countries, particularly in England and Scandinavia, and even in lands where the use of water is not so well understood, for those who can do so to leave their business, and make a trip to the seaside to get the benefit of the hydrotherapy of the sea. Sea bathing, which from the most ancient times has been considered a great health promoter, is nothing more or less than an empirical, unscientific, but nevertheless wonderfully beneficial form of hydrotherapy. And what is true of sea bathing is also true of lake bathing, river bathing, and bathing in natural sources of water of all kinds.

We must remember, however, that what is good for one person is not always good for another, and perhaps as many are injured as are benefited by sea bathing. Very frequently people are made sick at the seashore because they overdo. They spend hours in the surf, and when they come out, they are completely exhausted. If one is unaccustomed to sea bathing, the bath at first should not be longer than two or three minutes; the next time it may be a little longer, and may be gradually lengthened, until one can safely stay in it ten or fifteen minutes. If the water is rather cold, one should not remain in it more than five or ten minutes; if it is very cold, not more than three or four seconds,— just long enough to get the impression of cold upon the skin. If one exercises vigorously by swimming hard, he can stay in longer. Fleshy people can remain in the water longer than thin people, and adults longer than the very young. The benefit to be derived from sea bathing is due, first of all, to the low temperature of the water, the temperature of sea water seldom being above 70° or 75°. Water at that temperature very rapidly extracts heat from the body, so that if a person remains in water at that temperature a very great length of time, he loses considerable heat. So large an amount of heat might be carried off in this manner that one would suffer from shock, and the next day he might feel a great depression as the result. Fresh water is usually warmer than salt water; and in soft water, reaction occurs more quickly than in salt water, so that one may remain in it a little longer.

In connection with sea bathing there is a reaction from cold,—the reaction which follows the extraction of heat,— then an-

other reaction, in which there is an elevation of temperature, the bodily forces receiving an extra amount of heat. It is from this reaction that we derive the great benefit of sea bathing, and not from the salt in the air or in the water, as some people think. The benefit comes from nothing else but the cold water.

The cold water at first abstracts heat, then the body rallies its resources, sends blood to the skin, warms it, and produces an increased amount of heat. By this increased amount of heat production there is an awakening and a stirring up of all the vital functions of the body.

Cold has the marvelous property of increasing vital work of all kinds. When cold water is applied to the skin, impulses are sent inward that awaken every organ of the body. Let us see what takes place: When a person dashes into cold water, the first thing he does is to draw a deep breath; the lungs swell out, a deep inspiration is taken, and the heart begins to pound away with wonderfully increased vigor and strength. This deep breathing is purely involuntary, just as is the jerking of the leg when the bottom of the foot is titillated; it is one of the organic functions carried on by the bodily forces entirely independent of the will.

This deep breathing increases lung activity, thus bringing in more oxygen; it increases heart activity, so that the blood is circulated with greater force; hence we have more blood and purer blood carried into every tissue of the body. The result is a stirring up of the bodily forces and a distribution throughout the system of a larger amount of highly vitalized and oxygenated blood. Thus we see that the blood-making powers of the body are increased by sea bathing or by the application of cold.

Another very important function the activity of which is increased by the application of cold or by sea bathing is the digestive function, by which food is absorbed and taken into the blood. The application of cold water to the skin has the effect to stimulate the secretion of gastric juice. Every one knows the effect of taking a walk on a cool morning, or of sea bathing — what an appetite it gives. One feels as if he could devour everything in sight, and digest everything he could swallow; and he has just that much power of digestion — he could, under the powerful influence of cold, digest anything that any human being could digest. That is why the Esquimau can live on blubber. That is the reason Captain Hall, when exploring in the Arctic regions and exposed to a temperature of 75° below zero, could live on blubber; because the cold air stimulates the gastric juice of the peptic glands. The liver and the salivary glands are stimulated in the same way. All the organs of the body perform more effective work and a larger amount of it under the application of cold than otherwise.

Sea bathing, then,— the exposure to cold water,— puts one on a higher plane of life. This is a great advantage in hot weather. At times in summer the heat is depressing. A hot wave comes over a great city, and the death-rate increases there; perhaps in one week it will be three times what it was before. The babies die off with terrible rapidity; hot weather out-Herods Herod in the slaughter of babies. Cold weather can not be compared with hot weather in this respect. In cold weather one can shield the infant with clothing, keep it indoors, and put more fuel in the stove, but in hot weather one can not get rid of the hot air, nor can he get away from it. He can not get ice enough to cool it off. Consequently when the hot wave comes, every one is subject to its depressing influence. The babies suffer most, but adults often suffer greatly. Sometimes the mortality is

enormous. But cold water comes in as an antidote for these bad effects. One can not cool the atmosphere, but he can get into a tub of cold water, and sit down; he can get into a cool medium. Man can live in water if he can not live under it. Did it ever occur to you that we are practically amphibious animals? We think in water, digest in water, make bile in water, and make blood corpuscles in water. All the living, active processes of the body take place under water. Our bodies are about nine-tenths water, and so, as I said, we live in water; and if on an excessively hot day one can get into a tub of water, he can live there.

The Neutral Bath.

One of the ways by which we can antagonize hot weather is by the neutral bath, which is a full bath at a temperature of from 92° to 95°; one can live in that kind of bath indefinitely. In cold weather a little warmer water may be used than in summer.

A traveler in China once reported finding some hot springs there. A Chinaman had built a large tank, which was supplied with water from one of these hot springs, the water being at about 100°. He would sit in the tank in winter because he could keep himself warm in that way cheaper than he could keep a fire. He was in the habit of going into the tank in the fall, and staying there until spring, only coming out to get his meals. One might pursue such a plan and be very comfortable, by oiling the skin every day. When visiting Vienna, about seventeen years ago, the writer found in one of the hospitals there a man who had been in a warm bath, with only his head exposed, for fifteen months, and he was improving every day. By an accident he had burned nearly half the skin off his body, and his doctors had put him into that bath and kept his body submerged in water while the new skin was growing; that was the only way his life could be saved,—and his life was saved by that means. This practice is not uncommon, patients having been kept in the neutral bath for many months, with benefit.

The neutral bath is good for children as well as adults. If a warm bath is taken in summer, the bather may be overheated; and if a cold bath is taken, it will cause a reaction, and one will be hotter than before; but the neutral bath (92° to 96°) produces no reaction, so one can take it at night, go to bed, and be comfortable. The neutral bath lowers the temperature, and at the same time is not exhausting; it dilutes the blood, and aids absorption; it increases the action of the kidneys, and soaks the skin full of water.

Suppose the baby is restless and wakeful. Put him into a neutral bath; make a sort of hammock of a sheet by pinning the corners or tying them down below the tub, and then place the baby on the sheet and let it sink into the tub. One of my little girls showed me this method of preparing the bath for the baby, and I think it is very practical and original. If the temperature is 94°, the baby may stay in this bath a week, being taken out occasionally.

The neutral bath is also good for old people and invalids. Any man or woman, no matter how hot the weather is, can take the neutral bath with advantage, and not fear overheating.

Sunstroke and Overheating.

Suppose one has been overheated, or has had an attack of sunstroke; what is to be done? Water is the life saver, the best means in the world of saving people from the effects of sunstroke or overheating. Hippocrates, who lived three hundred years before Christ, had a very simple method of treating people for sunstroke. His plan was to have one person pour cool water on the patient while two

or three others rubbed him vigorously. The application of cold water alone is dangerous, because it usually drives the blood inward so that there is danger of interfering with the digestive centers; but when cold water is applied and accompanied by vigorous rubbing, the blood is kept at the surface and the body is rapidly cooled.

When sunstroke is about to occur, there is an elevation of temperature, the skin is dry, and the man stops sweating, so that there is no evaporation. But perspiration, the evaporation of which is constantly cooling us off, carries away the heat of the body so rapidly that the temperature does not ordinarily rise above 100° (98½° in the mouth or 100° in the interior of the body). This is the temperature at which the vital processes are naturally carried on, and if the temperature rises above that, there is usually disease. At a temperature of 107°, death occurs quickly; at 110°, very quickly. If we apply cold water to the skin, it will have a tendency to drive the blood into the body and to lessen the cooling off; but if at the same time we rub the surface vigorously, this brings the blood into the skin, and keeps it there, thus encouraging the cooling off; so, together with the cold water, there should be vigorous rubbing. The application of hot water would elevate the temperature still more, and cold water is dangerous, because the tendency is to drive the blood inward; but the cold bath, accompanied by vigorous rubbing, will save life, after sunstroke, in the majority of cases.

Sunstroke is a very dangerous accident, and is likely to prove fatal without proper treatment; but with a cold-water pour from a height of five or six feet, the water being about 60° or colder (ice-water if you can get it), and with two or three people rubbing the patient vigorously, we may expect a cure in almost every case. Especial pains should be taken to wet the head and back of the neck, and to keep these parts cool.

Stomach Disorders.

Hydrotherapy is the best remedy for the stomach and bowel disorders so prevalent in the summer. Cold applications to the abdominal surface are almost a panacea for excessive activity of the bowels. The reason is that the blood vessels of the congested parts are made to contract. A hot enema should be given for cleansing the bowels and stimulating the circulation. A cold compress to the abdomen, changed every hour or two, affords great relief. If there is pain, a fomentation should be applied for fifteen minutes, followed by the cold compress, to be changed every ten or fifteen minutes; it must be allowed to warm up and then be changed. This keeps a current of vitalizing blood flowing through the part. By the cold application there is a contraction, and then as the blood warms up there is a reaction and a crowding out of the blood. When the cold compress is applied again, there is another contraction, then as the compress becomes warm, reaction again takes place, and another crowding out of the blood; at each time fresh blood comes in, and the white corpuscles are enabled successfully to combat the parasites and to carry them off.

The Morning Bath.

Some people complain that the cold morning bath is disagreeable in hot weather, that their skin becomes overheated. In such cases apply a hot sponge bath or shower bath, at from 110° to 120°, or as hot as the patient can bear it, for fifteen or twenty seconds. This is to be followed by a cooling off; after the cold water a douche of hot water should follow,— a short douche, while one can count ten, perhaps, of hot water, or water at 110°,— and then one

will be cooled off for all day. One has only to stay in the hot water long enough to make an impression of heat upon the surface; this notifies the body that hot water is coming, and the body prepares for it by diminishing heat production and lowering all the activities which increase heat; the vessels of the skin are dilated, the blood is more rapidly cooled, and all the bodily functions are carried on at a little lower tide, the heat elimination being increased at the same time, so that, if there is a tendency to febrile action, it may be checked by this means.

If one is exhausted by a hard day's work, what is the best thing to give relief and to secure a comfortable night?—A hot bath, at a temperature of from 104° to 110°, at bedtime, quickly cooled to 92°. Lie in this neutral bath till you feel sleepy, then rouse yourself and roll into bed, and you will have a comfortable night's rest. A hot bath refreshes the system, stimulates the elimination of fatigue poisons, relieves irritation, and secures a comfortable condition for sleep.

THE CHILDREN OF JAPAN.

BY SOPHIA BOATWRIGHT-BRUNSON.

JAPAN has been termed "the paradise of babies." Chamberlain remarks that "the babies are generally so good as to make it a paradise for adults."

When the little ones arrive upon this mundane sphere, in the queer but delightful little island of Dai Nihon (great Japan), they are usually very welcome, even if they are girls. However, if they belong to the latter sex, they find their beds upon the floor for the first three days of life, to teach them thus early the source whence they originated, namely, the earth, while their brothers are said to have come from heaven.

The Japanese, like Europeans and Americans, have much to learn in reference to hygiene and the ethics of healthful living from the early dawn of life down to old age. The Japanese baby, who should be permitted to close his sleepy, oblique eyes, and remain as undisturbed as a kitten during the first weeks of his life, is, together with his frail mother, allowed but little time for rest or sleep; but, on the contrary, is the victim of numerous admiring visitors, who pass him around from hand to hand, to be looked at, complimented, and talked to. The mother has to sit up and go through the ceremony of receiving her friends many times a day. When the baby is seven days old, he receives his name; and on the thirtieth day after birth is carried to a temple, and placed under the protection of some patron deity, who is supposed to become the guardian of the child. After these preliminaries are over, the little one enters upon a life quite as healthful and pleasant as that of children in Western lands.

Japanese babies are generally tied upon the backs of servants or older members of the family, where they ride about in contentment in all sorts of weather, in summer and winter, storm and shine. They wear no hats or shoes, and their clothing is loose and comfortable. It is quite common to see tiny children hopping about, playing "hop scotch" and other games, with still more diminutive specimens of humanity tied securely upon their backs. From their perches the babies peer over the shoulders of their small nurses, and watch the games with a look of enjoyment.

The Japanese people are very small in stature, due partly to their mode of living. The children are taught at a very early age to sit with their knees bent under them, instead of with their legs straight out, as we do. To this custom, which is unnatural and unhygienic, is partly due the shortness of their lower limbs, which are out of proportion to the rest of the body.

JAPANESE GIRL IN SNOW COSTUME.

The Japanese are great bathers. The wealthier classes are provided with facilities in their homes for bathing, but the poorer classes are not, hence they frequent the public bath houses, which are numerous all over the empire. Men, women, and children all bathe in the same large tub. The temperature of these baths is quite high, usually about 110° Fahrenheit. The baby winces when first put into such hot water, but soon learns to take it complacently.

The Japanese mother seems to have even less conception of the requirements and capabilities of the little one's stomach than her Occidental sisters. Cow's milk is not used by the Japanese. The mothers do not wean their children until they are three or four years old, but they give them anything to eat that their depraved appetites may call for. They do not use oatmeal gruels, milk, or fruit juices, and have but little idea of how to prepare suitable food for small children. The Japanese admire large people, and are anxious for their children to grow large and well proportioned. When the writer was in Japan, the mothers often asked her what she fed her baby upon, as she was so large and plump. On one occasion, when a woman came and thus inquired, the reply was, "Upon

condensed milk." The interlocutor went away, and returned next day, stating that she had purchased the condensed milk, but the baby could not swallow it. Upon inquiry the fact was elicited that she had been trying to feed the infant upon the undiluted milk, just as it came from the can.

One day I was called to see a child who was suffering from indigestion. I observed that the little one had badly decayed and blackened teeth, though she was but three years of age. I ascertained that she was not receiving the proper food, so I said, "I will prepare something for the child to eat and send to you." On returning next day, I found the mother and little girl seated upon the floor. The mother was feeding the child from a tray which contained some hard rice crackers, some raw fish, and a cup of wine. The mother was busily engaged in stuffing the little one's mouth full of the crackers and fish, and then allowing her to wash it down with draughts of wine. "O," I exclaimed, "that food will cause her to have indigestion worse than ever. Why do you not give her the oatmeal gruel I sent you?" "Why, the baby does not like that, but she likes this, and so I let her have it."

How many enlightened American mothers have no better excuse than this for indulging their children in all sorts of indigestible abominations not fit to enter the human stomach, simply because they like such pabulum! The result is often physical and moral ruin if Dame Nature does not revenge the insult to herself by carrying off the little one to an untimely grave.

In some respects the average Japanese children live upon a more healthful diet than the children of this country. They at least do not consume such quantities of flesh foods as do the little ones in our own land. Their religion precludes the use of meat, excepting fish, which concession was granted to them on account of the weakness of the flesh.

Miss Alice Bacon says that "a Japanese child seems to be the product of a more perfect civilization than our own, for it comes into the world with little of the savagery and barbarian bad manners that distinguish children in this country, and the first ten or fifteen years of its life do not seem to be passed in one long struggle to acquire a coating of good manners that will help to render it less obnoxious in polite society." We have sometimes thought that this is true, largely on account of the gentleness and consideration which the Japanese children usually receive from those about them, also from their early training in reference to the sacredness of life, even of the tiniest insect. They are taught not to kill ruthlessly or to torture the meanest creature that creeps upon the earth. Thus lessons of compassion and kindness, not only for the human family, but for the whole animal creation, are early inculcated, and such teachings have had much to do with producing a people who are noted for their uniform courtesy, self-restraint, and thoughtfulness of others. One of the most beautiful features of Japanese life is the consideration and courtesy between members of families at home, and the reverent respect paid to the aged by parents and children alike.

The little girls in the Orient are not supposed to require so extensive an education as their brothers; hence their training consists largely in acquiring the rudiments of a literary course, namely, "the three R's,"— reading, 'riting, and 'rithmetic,— the domestic arts, and such accomplishments as playing upon the *koto* and *samisen* (stringed instruments), serving tea, and arranging flowers.

Their dressmaking is not such a complicated, soul-harrowing, and ever chang-

PLAYING THE SAMISEN.

ing task as it is in this country, where the fashions change every season. There they enjoy comparative immunity from varying fashions, and wear the healthful and picturesque costumes that have descended to them from grandmothers of past generations. The coiffure, however, of both dames and maidens is a source of trouble and inconvenience. They endure the discomfort of sleeping with their necks upon blocks of wood in order to preserve intact the coils and loops of ebon tresses arranged by the hairdresser. Thus we see the frailty of human nature, as revealed in the vanity that will endure untold discomfort for the sake of a foolish fashion.

In Japan, children are not constantly rebuked by nervous mothers who are afraid of their demolishing bric-à-brac or marring furniture. When they enter a house, they leave their shoes at the door, so they are never chided for bringing in mud.

There is no furniture in a Japanese room excepting the *hibachi*, or fire box, which contains a few live coals over which simmers the little kettle ever ready to furnish the hot water to make tea for a guest. If the babies fall upon the floor, they are not hurt, for the floor is covered with thick, soft matting, upon which they sit in the daytime, and sleep at night, covered by *futons* (quilts), which are folded away in the morning.

On holidays, which are numerous in Japan, the parents accompany the children to groves or gardens, and enjoy with them the outdoor life of which the Orientals are so fond. The children have many games, both for outdoors and indoors, and often even the grandparents join them in their sports.

Though the children in Japan on the

average are about as healthy as the little folks of other lands, one notices there that many of them are afflicted with disagreeable skin diseases, due partly to their lack of proper diet, and also to the fact that the mothers have the heads of the children shaved at a common barber shop, where the same razor is used indiscriminately for all alike, without being thoroughly cleaned and disinfected. Again, many diseases are communicated in Japan by means of the medicine god, Benzuru. The suppliants pray, and rub the old god on the part corresponding to the diseased portions of their bodies, and then apply to the afflicted parts the virtue supposed to have been received. In this way many receive the germs which their neighbors have left, and are worse off than before. It is a common sight to see mothers bringing their children to this god, and supplicating it in the manner described to heal their little ones.

But on the whole, the childhood of the Japanese children passes away as happily and uneventfully as that of children in Western lands. After all, what would the world be without children? — It would be a Sahara without a blossom. They are the buds of the earth, the roses and lilies with their loveliest petals just beginning to unfold, and O, how easy it is for them to be dwarfed, withered, and blasted, just as are tender plants by icy winds and scorching suns. As the gardener carefully protects his buds from adverse influences that would hinder their development into the beautiful blossoms which gladden weary eyes and shed sweet fragrance around, so let us cherish the children, and let no impatient, unkind words fall upon their sensitive ears, to blight their expanding lives and wither the graces with which the Creator designed that they should be adorned as naturally as the plant is adorned by its blossoms.

JAPANESE GIRL MAKING TEA.

CORNARO.

BY WILLIAM E. A. AXON, LL. D., F. R. S. L.

CARDINAL BEMBO, a lover of learning as well as a prince of the Roman Church, loved to assemble in his Paduan palace those who were interested in the intellectual movement of the age, and among his guests was Luigi Cornaro, who, at a period when luxury was a passion, preached the doctrine, even in our days not fully understood, that the true philosophy of enjoyment is self-restraint, and not self-indulgence. The clever men and women assembled from time to time in the palace of Bembo listened to Cornaro as he discoursed on the pleasures of sobriety, and explained the methods by which he had saved his threatened life, and had restored completely the health which he had shattered by careless and intemperate living. As Cornaro in his earlier career had not been more of a drunkard and glutton than many thousands of other well-to-do young men of his own class, and as his old age was marked by health and cheerfulness, he offered in his own person a striking object-lesson of the value of temperance in eating and drinking. When about the age of eighty-three, he published his little essay on sober life. It attracted great attention, and this impression was deepened and strengthened by a second essay written when he was eighty-six; by a third composed in his ninety-first year, and sent in the form of a letter to the Patriarch of Aquileja; and finally by the loving exhortation with which in his ninety-fifth year he endeavored to persuade every one to adopt an ordered and temperate regimen to attain a long life in which to enjoy all the benefits and favors that God in his goodness and bounty has deigned to bestow upon mankind.

The counsels of Cornaro, wholly or in part, have been many times printed and translated into various languages. The saintly George Herbert turned a part of the first discourse into English, and he has had several imitators. Yet, strange to say, there is no complete and adequate edition of Cornaro in English. I am now engaged in a revision and translation of what I hope may be a complete and satisfactory presentation of the writings of a man who must be regarded as one of the great pioneers of hygiene. While I endeavor to make a faithful presentation of the man and his work, Dr. J. H. Kellogg will deal with its scientific value or limitations. A brief account of the man and his work will, I hope, interest readers in this enterprise.

Luigi Cornaro, who was born in 1467, belonged to a famous patrician family in Venice. Caterina I, Queen of Cyprus, who died in 1510, was his kinswoman, and various other members of the family attained to distinction in the state. But in the endless struggles of factions of Venetian politics, the Cornaros came under proscription. Debarred from public employment and stripped of rank, Luigi Cornaro went into an exile more or less voluntary, and took up his abode at Padua. He was healthy, and led the life of many who have youth and riches. Self-indulgence, gluttony, and intemperance made him at thirty-five a physical wreck. His constitution had not been, originally, a very good one, and his "free living" had filled him with diseases. Physicians warned him that the inevitable end was death, and that the only chance of escape from an early grave was a complete change in the ordering of his days. He

began to consider what edibles were most serviceable in nourishing his body. He limited the quantity of his food. He avoided extremes, and cultivated cheerfulness. He had little to say about the kind of diet, but restricted himself to twelve ounces daily of solid food and fourteen ounces of liquid. About the age of seventy he had a serious accident. He was in a coach which was overturned, and was dragged along a considerable distance, so that his head and body were frightfully battered, and an arm and leg dislocated. He refused the physicians, who, according to the time, desired to bleed and purge him, and when the limbs were set, made a speedy recovery. The result was a complete restoration of his health. When at the urgent entreaty of his family and friends he made an addition to the quantity of his daily food, the result was a serious illness. He then returned to his measured diet, and as a result enjoyed a green and happy old age.

He was reported to be in his hundredth year when he died at Padua, in 1567. Nor were his latter years "labor and sorrow," but, as he tells us, they were full of delight and pleasure. Padua was a center of intellectual light, and in conversation with friends, in reading, in meditation, in the enjoyment of his gardens, in the contemplation of beautiful scenery, he had many resources. His eleven grandchildren were also a source of pleasure in his old age. It is pleasant to think of the aged Cornaro surrounded by these descendants, playing with the infants, and joining his voice with those of the youths and maidens as they sang beneath trees and beside the limpid streams of his garden.

Cornaro has written well and with much enjoyment of the pleasures of temperance. His enthusiasm is infectious. His book is the reflection of a happy old age. He anticipated Victor Hugo as a successful professor of the great art of being a grandfather. While his treatises necessarily deal with the details of health, it is clear that he was not one of these hypochondriacs with whom the care of the body is an all-absorbing theme, preventing them from thinking of other things, and leading them to neglect other duties and to ignore other interests. On the contrary, Cornaro was one who recognized all the claims of life. So far from being a "man of one idea," wholly absorbed in the task of maintaining the feeble flame of his existence, he had a wide range of knowledge.

He became possessed of a villa in the Enganean hills which had been deserted by its previous owners on account of the bad air and marshy waters. This place he transformed into a healthy house surrounded by fertile fields cultivated by many husbandmen. "I may truly say," he observes, "that in this place I have given to God altars and a temple, and souls to worship him." And here he loved to converse with congenial spirits, with men of fine intellect, with architects, painters, sculptors, musicians, and agriculturists. When Giammaria Falconetto showed Cornaro his drawings of Rome, they excited his strong desire to see the Eternal City, and the two friends visited it in company. On his return, Cornaro employed this artist in the construction of a house at Padua, decorated with designs by Raphael. The friendship of Cornaro with Falconetto and the Paduan artist, Ruzzante, was so close that he desired that they should all be burned together, that their bodies should not be separated after death whose souls in life had been united by the bonds of friendship and virtue.

The Casa Cornaro, at Padua, has often been praised as a masterpiece of Renaissance architecture. At eighty-three he wrote a comedy. Sperone Speroni, by the way, wrote a treatise against Cornaro's

"Vita Sobria," and then, finding that second thoughts were best, recanted his opposition, and became a disciple of the doctrines of temperance.

Cornaro, besides the little play just named, wrote on matters connected with architecture and civil engineering. These have perished, and only one testimony of his contemporaries remains to assure us of his distinction in these arts, but in his "Vita Sobria" he has left a wise and salutary message to mankind.

These later years of his life he passed in quiet contentment, happy in his domestic life, admired for his ability, honored for his wisdom. His end was peace.

His exact age has been disputed. His birth is placed in 1467, and he died in 1565, 1566, or 1567,— probably the first. Taking the shortest estimate, we see that the man who in the prime of life was on the verge of the grave, succeeded, thanks to temperance, in almost if not quite completing a century of existence.

"Sometimes the virtues of a temperate prime
Bless with an age exempt from scorn or crime,—
An age that melts in unperceived decay,
And glides in modest innocence away;
Whose peaceful day benevolence endears,
Whose night congratulating conscience cheers;
The general favorite as the general friend;
Such age there is, and who would wish its end?"

Cornaro, while a forerunner of modern hygiene, was not expressly either an abstainer from flesh or from wine. Light comes by degrees. Cornaro's great service is that with persuasive directness, simplicity, and eloquence he has insisted that we should "live up to the simplicity dictated by nature, who teaches us to be content with little, to pursue the methods of sacred abstinence and divine reason, and to accustom ourselves to eat no more than is absolutely requisite to support life, remembering that what exceeds this is disease and death, and is done merely to give the palate a satisfaction, which gives it but a momentary one, though it brings on the body afterward disease and injury, and in the end kills it altogether, with the soul."

His was not a new doctrine; it is the teaching of the wise in all ages, and it is as true now as when, more than three centuries ago, it was proclaimed by Luigi Cornaro.

THE PERILS OF CITY LIFE IN SUMMER.

BY DAVID PAULSON, M. D.

IN summer the air is laden with the fragrance of countless flowers, and the birds hold melodious concerts, while every tree and shrub seems to respond cheerfully to beneficent showers and warm sunshine. At this season of the year thousands leave the miseries of city life to seek these country charms, but they are generally people who belong to that portion of society who are so fortunately situated that they would not be subjected to the worst dangers of city life even if they should forego the pleasures of their regular summer vacation. It is in the tenement districts, and particularly that portion of them which by common consent has been designated the "slums," that the summer season comes not as a herald of life and blessing, but a messenger of disease and death. During the winter the cold paralyzes the germs, and at the same time invigorates the body so that it can more successfully cope with disease, but with the approach of warm

A Rear Tenement View in Chicago.

weather the opposite conditions prevail. The heat of summer revives countless millions of germs. Microbes that are capable of producing many of the worst diseases are multiplying everywhere with amazing rapidity; at the same time as a result of the depressing effect of a constantly overheated atmosphere, the inhabitants of unsanitary districts fall an easy prey to these various death-dealing diseases. Although none are exempt from unfavorable conditions, children, and especially infants, who have as yet but a small store of vitality, become the chief sufferers. Carefully collected statistics have shown that in one of our large cities, where one hundred infants die during a week in the winter, five hundred perish in the same period in the summer. These are appalling figures. It has also been ascertained that when a thousand of these sick children are taken into the rural districts for the summer season, the death-rate at once drops to a minimum, as compared with that of the same number who are compelled to remain in the city and battle with their unfavorable environments.

A recent investigation made in Chicago revealed the fact that hundreds, if not thousands, of the population know no other home than some dark, damp, and loathsome basement. In some instances there were found small pools of stagnant water under the floors, so that it was only necessary to jump up and down on the floor to cause the green, slimy water, laden with pestilential odors, to ooze up through the cracks. Think of a mother under such circumstances attempting to make her home a type of heaven on earth. Conceive, if possible, the mockery it is for children in these holes to try to recite from their hearts, "There is no place like home." For many years a border of Lake Michigan only a few miles in width has had before it the impossible task of diluting the sewerage of nearly two million inhabitants sufficiently so that it would be safe to use the water of the lake for drinking purposes. During the winter the low temperature inhibits to a great degree the growth of many germs that inhabit such water, but in summer they thrive luxuriously, as the high death-rate from typhoid fever and other water-born diseases abundantly testifies. The large drainage canal will, of course, to quite an extent obviate this difficulty so far as Chicago is concerned.

Much of the food that is eaten at this

time of the year is already on the borderland of fermentation and putrefaction. Especially among the poorer classes, where refrigerators are an unknown luxury, does this item of semidecayed foods become an important factor in the cause of disease. It requires a long time for the milk to percolate down from the beautiful dairy farm in the country to the poor sick child in the tenement flat. If souring has not been prevented by some harmful chemical preservative, the milk certainly has reached the stage where this process must speedily begin after its introduction into the stomach, producing in many cases dangerous and deadly toxins. Nature never intended that humanity should congregate so closely as to encourage death instead of life. In one of the large Eastern cities some of the ordinary sized blocks are the homes of several thousand inhabitants, and often from six to eight families are found sleeping in a room the dimensions of which are not more than hose of an ordinary bedroom. Think of a child inhaling such poisonous air and at the same time enduring the weltering heat of a summer night, then cease to wonder why the death-rate of the tenement districts reaches such alarming proportions during the summer months. So long as humanity congregates so persistently in these large centers of population, the remedy for the summer period is difficult to apply. Much, however, can be done, and much has already been done. The city of New York is commendably at work tearing down many of its old death-traps or tenement houses, and replacing them by others constructed in accordance with the ideas of modern sanitation. The efforts of charitable organizations to send the tenement children away for summer outings is a Heaven-sent idea. It is a vision of a new life to them, and tends to invigorate both their souls and their bodies.

Perhaps the most important thing of all is to teach the mothers in our large cities how to make the best of their unfavorable surroundings, how to buy and prepare wholesome food; the vast importance of the sterilization of milk; how to overcome the common superstition that children are sure to catch cold if they take a bath. Here is a large field for energetic young missionaries to enter, and it is a field in which they can see great results following well-directed and conscientious effort.

SUMMER HYGIENE ON THE FARM.

BY ANTON LEISTER.

MY grandfather was a German, a tanner by trade, a man of health and vigor to a good old age. Two weeks before he died of old age, at the age of eighty-seven, he walked four miles on a cold wintry day, without an overcoat. He never owned an overcoat.

His summary of hygienic science was in this: "Man is of three classes: (1) The sanguineous, or those having bodies rich in blood; (2) the aqueous, those rich in water; (3) the aëriferous, those rich in air. It is the aëriferous who outdo all the others."

From time immemorial, poet and peasant have praised the farmer's occupation as the most healthful of all. But if one gets around much among farmers and observes closely, the amount of chronic ailments that he sees on every hand, indoors and out, will lead him seriously to question the above proposition.

But the proposition itself is all right. It is the farmers and the farmers' wives who, in their hygienic practice, are all wrong; and the penalty they pay for the wrong is heavy.

Surrounded with floods of sunlight and oceans of clean air the year round, when indoors they shut out both, systematically, from their rooms day and night. This exclusion of the life- and health-giving light and air is accomplished by badly built and worse managed houses,— houses built on purpose, one might say, to weaken and destroy their occupants. When out of doors, farmers faithfully follow out this same policy of excluding sunlight from their lungs and skin. Only yesterday I saw two strapping big fellows hauling manure. Though the almanac said it was May 15, the thermometer put it July 15, with 92° in the shade. I was wearing my July suit — straw hat, thin shirt and trousers — and was barefooted. These men had on two heavy shirts each, heavy trousers with overalls over them, felt hats, and a handkerchief tied around the neck. They worked in a listless, stiff, dogged way. It took them both as long to load as it would me alone. One said, "We 've got into no 'snap' here." I said, "I should think on a hot day like this you 'd want to 'peel'— get off some of the extra clothing." The answer was, "It is no hotter with this clothing on than with less." I pitied the employer of these men, and went on about my business.

These light- and air-shy farmers sigh and grunt and groan; they diet and they drug; they break down when they should be in their prime, and they go down before their days are half numbered.

The single point to which I wish to call attention in this paper is the astonishing power of clean air when applied night and day to the body, inside and out, the year round, to cure disease, to restore and make permanent health, vigor, and elasticity of body and mind.

To begin with, the lungs need air, clean air. We can go days without drinking, and for weeks without food, but only a minute or two without air. And just as we absolutely must have air for the lungs from eight to fifteen times a minute to sustain life, just so important it is that that air be perfectly clean, in order to secure health and vigor. Even a slight contamination works injury from the ceaseless repetition of the poisonous inhalation. But the air in nine out of ten farmhouses, day or night, is abominable; it is poisoned continually by the volatile exhalations of the old house, old furniture, curtains, carpets, rubbish of all kinds indoors and out, and by closed doors and windows. It is this ceaseless poisonous inhalation, year in, year out, that has helped more than any other thing to make the farmer's occupation unhealthful — needlessly so.

This may seem to be a sweeping assertion, yet I think I could prove it to be none too strong. For twenty years I have been more or less an invalid. During this time I have experimented with all the main systems of diet, exercise, and general hygiene. I have several times nearly died from starvation caused by stomach and liver trouble. But for nearly a year now, that ailment is all a thing of the past, apparently, and for six months I have done the severest work with exposure to wind and weather. What made the change? — Chiefly and mainly clean air, applied day and night, inside and out.

For three years I have not slept in a house. During the past winter, from Christmas to the first of March, I slept near a stove, but with windows and door wide open, one window being just one foot from my pillow. But the blankets were wool, and there were plenty of them. Since March 1, I have slept in an open shed, even in snowstorms, after working during

the day eleven hours in the storm, at ditching, my feet constantly in ice-cold water. But my rubber boots were three sizes too large and had double felt insoles, no socks being worn. I have worn no socks for six years, but take good care of my feet, and they have life and circulation in them.

Not only do the lungs need clean air, but the skin does also. For many years I have worn no undershirt and no vest, only a coarse woolen shirt, and a woolen coat with wool lining, yet porous enough easily to permit both air and light to penetrate. The wool keeps the skin clean and warm. The leg wear I use is on the same plan. This way of dressing is a modified form of the all-wool system of dress founded on scientific principles by Professor Jaeger, of the University of Stuttgart.

The point that I wish to make most prominent here is the necessity of ignoring the foolish rule that forbids people's taking off their flannels before May or June, or any other time. On warm days after zero weather, I have worked in February in exactly the same clothing that I wore the July before in haying. During the past two months I have worked day after day in ordinary cotton overalls and cotton shirt, and nothing else but boots and hat. I never yet took cold from such a change from flannel to thin cotton. Why? — Because I never permit myself to swelter and waste my nerve force in clothing that is too heavy for the temperature and the work, just because ignorant fogies *say* a change is injurious. I change and go on with my work with pleasure and vigor. Then when the coolness of night comes, even in June or July, on goes the wool shirt again, and the wool coat, too, if needed. Regulate the clothing according to the temperature, and the work, and your physical condition. It is a safe and profitable rule.

"Too much fuss"? Then don't. "How it looks!" Then don't do it and be odd, but swelter or shiver and keep on whining and mewling about bad health. It is every one's privilege. From experience I know what these things have been the means of doing for me. From reading I know that on the Western plains hundreds of men are working on the same principles, with resulting vigor and health, of which the civilized dupes of "stove-room civilization" know nothing. The outdoor life of the Boers is a large factor in enabling them to make their struggle for liberty one of the most heroic the world has ever seen.

I can not give detailed rules here for acquiring and maintaining health. I can only give a few epigrammatic assertions which by their very improbability, seemingly, may arouse attention. Yet let me assure the reader that however impossible or absurd my statements may appear to him, I know what I am talking about, and with more space I could convince him of that fact. He would not be the first skeptic — hygienic — whom I have convinced.

"You've become hardened to it." Of course I have. And so can you get hardened to it, easily; and if you are punier, weaker, more narrow chested, more timid of overstepping established customs, than I was at first, your case is a bad one, indeed. For the very reason of trying to get you to make a practical test and study of this matter, I write at this season of the year, so that you may make your first attempts to use clean air day and night in the summer, when there is little or no risk. Then when winter comes again, your system will be in a condition to resist the changes of that season. Many of those who predicted my certain and speedy death when I first began to sleep out of doors, or with windows taken out entirely, twenty and ten years ago, have gone to their last home, yet I am here.

In all your experiments in hygiene, *go slowly*. Make no abrupt or sudden changes, but go slowly until you find what is safe *for you*, what not. But *persist*. Don't say, as scores say to me, "I could never do that;" for I know that by beginning right and going ahead right you *can* do it. There is no doubt about this. I have studied and experimented in these matters for twenty years, successfully; you have never given them a thought before, perhaps. Whose opinion as to what you can or can not do is more likely to be right, yours or mine?

THE HYDRIATIC TREATMENT OF TYPHOID FEVER.

BY J. H. KELLOGG, M. D.

IT is not the purpose of this article to discuss fully the treatment of typhoid fever, but only to give a few brief hints about the use of water in this very common and very grave disease. Under ordinary treatment the mortality from this disease is about twenty to the hundred. Under skillful treatment by baths, the mortality has been reduced to two or three per cent, and even less.

First, let us remark the importance of water-drinking as a means of washing out the poison through the kidneys and the skin. The patient must drink half a glass of water every hour when awake and more if he will, and whether he is thirsty or not. He does not drink to quench thirst, but to cleanse the blood from the typho toxin and other poisons produced in this disease. The water may be advantageously flavored with fruit juices of various sorts, but should not be sweetened with sugar. If the patient will not drink, an enema at 80° F. must be given three times daily, and retained as long as possible. An enema to cleanse the bowels must be given daily besides.

The fever is best controlled by the cooling wet-sheet pack.

Headache is best relieved by the head compress, changed as soon as it begins to be warm, and an ice collar about the neck, or a towel wrung out of ice water.

The cool abdominal compress must be applied from the beginning of the disease during its entire course.

For the cough, which is sometimes troublesome in typhoid, apply a chest pack, as shown in figures 1–4, pages 420 and 421, this number.

If the patient becomes delirious, the prolonged wet-sheet pack or the long full bath at 92° F. will afford relief. The bath may continue from one to three hours or even longer. The patient must be gently rubbed from time to time, to prevent chilling.

The diet in typhoid fever should be grape juice or fruit juice of some sort, with little or no cane sugar, for the first three to six days. Then cereal food, such as zwieback, granola, grānut, browned rice, or malted nuts, may be added. Avoid beef tea and milk. Buttermilk is to be preferred to raw sweet milk. Fresh ripe strawberries or peaches, baked apples, prune purée, and ripe fresh figs are wholesome for the fever patient.

EACH creature knows its proper aliment;
But man, the inhabitant of every clime,
With all the commoners of nature feeds.
Directed, bounded, by this power within,
Their cravings are well aimed: voluptuous man
Is by superior faculties misled,
Misled from pleasure even in quest of joy.
Sated with nature's boons, what thousands seek,
With dishes tortured from their native taste,
And mad variety, to spur beyond
Its wiser will the jaded appetite!
Is this for pleasure? Learn a juster taste;
And know that temperance is true luxury.

— *John Armstrong.*

SIGNS AND SYMPTOMS OF NERVOUSNESS.

BY DUDLEY FULTON, M. D.

ONE of the noted products of the civilization of the last fifty years is a generation of people who are always in a hurry. The mad rush after wealth, fame, and notoriety is seen most typically in the whirl of our large cities. This hurry and scurry led a leading statesman to observe recently that "the whole nation seemed about five minutes ahead of an epileptic fit."

It is the foreign traveler from the land of European calm who is most sensibly impressed with the breathless steeple chase after trains, trolley cars, food, and trade. The visitor to our shores is first amazed at the nervous scrambling to get ahead of Father Time, and if possible cheat him of a few minutes each day, but he soon finds himself divested of his native calm, and becomes a hopeless victim of the influence that tempts us to try to do in an hour about twice as much as can be done.

This curious curse which has fallen upon our people is not perceptible in business life alone. Its effects are noted in our pursuit of pleasure and entertainment, and in all the activities of life. A writer recently contrasted our fidgety way of feeding with the "bovine calm" with which a German takes his nourishment and the hours an Italian can spend over his meals. Still one can not but admire the skill and dexterity displayed by the average business man, who walks two squares to the nearest "Quick Lunch," drinks his coffee, devours a plate of buckwheat cakes, swallows a ham sandwich, and gets back to his office hard at work without having wasted more than five minutes' time.

Even in public gatherings, where we might expect to find calm and repose, restlessness is most apparent, and no sooner do people find that the end of the performance is drawing near than they commence a frantic struggle to get into their wraps and their carriages to be whirled away to their homes.

How rarely is seen healthful relaxation and repose! The average American is scarcely ever quiet. Even in his leisure moments, in order to keep doing something, he will resort to anything from chewing gum to rocking himself in a rocking chair. The latter luxury is regarded as a curiosity by the older and more sedate civilization of Germany. Besides these evident general signs of nervousness, in which the subjects are more or less unconscious of their condition, we find evidences of nervous debility or irritability in an increasingly large class of people, taking various definite forms and expressions. Thus loss of nerve tone, irritability, lessened capacity for bearing physical or mental pain, aches, and excesses of all kinds can not be more plainly laid bare than by the tremendous sale and the wholesale use of the various nerve tonics, hypnotics and sedatives, pain killers, soothing syrups, headache powders, and other drugs which have a direct influence on the nervous system. One can but pause and ask what is the matter with nerves that need propping and bolstering up by these nerve splints, which beguile the user into the belief that they yield him the strength necessary to keep up his present pace, but which ultimately leave him a nerveless bankrupt and pauper.

A patient recently gave a history of having worked from twelve to sixteen hours a day, taking insufficient time for sleep and no exercise. Cigarettes helped to divert

his mind from failing health. Insomnia appeared, for which he had run the gamut of trional, sulphonal, the bromides, chloralamid, paraldehyde, chloral, and lastly morphine, to which he became a slave. The first links in the chain of bondage were the cigarettes and the sleeping powders early used to soothe and quiet the overworked and hypersensitive nerves, but they awakened a lion of appetite that in the end only morphine could satisfy.

The swelling army, recruited from all the walks of life, of individuals who require drugging to quell abnormal craving and restlessness, is appalling. Such individuals do not desire morphine because it is morphine; anything having a like action on the nervous system would satisfy. Its habitual use, and that of other drugs, comes as the result of a primary nervousness.

A gentleman recently under observation had periodical attacks of an insane desire for liquor. In the intervals he disliked it, and always refused it socially. The attacks were ushered in by cramps and twitching of the muscles of the legs. He became violent and maniacal, intensely so, if alcohol were withheld. But the patient presented the same symptoms of incoherency and delirium whether he were given alcohol or not. Plainly the primary weakness was a faulty brain, and alcoholism was a symptom or expression of this diseased inhibition. So in morphinism and cocainism, the drugs are used by hypersensitive, neurotic, delicately organized individuals, who are the natural products of the artificial, brain- and nerve-destroying and race-deteriorating conditions of modern life. These persons, lacking the physical capacity for enduring pain and the natural hardships of life, seek artificial and unearned felicity through the aid of various nerve-tickling, pain- and trouble-annihilating drugs.

Excesses, and the use of other drugs,— tobacco, alcohol, tea, and coffee,— reveal the craving of weak and shattered nerves for stimulants and narcotics, which benumb the sensibilities and keep the nerves ignorant of their own weakness. Headache, the presence of a tremor of the hands, weakness, and other signs of nervousness often disappear after the first drink, or cigar, or cup of coffee, in the morning. A patient just now under notice, attempting to get his nervous system into a healthy condition, is made most miserable because of the loss of his cigars and morning coffee. Perseverance in right living and abstinence from injurious habits bring the compensation of healthy nerves which feel no need of outside help from anything artificial whatsoever.

The beautiful and really desirable things of life — all the freshness and calm of nature that reach the individual through the avenues of the five senses, kept open and purified by health and vigor — are felt and experienced to-day by few. The average individual views the world and the pleasures of life through the green goggles of a sour stomach, chronic dyspepsia, racked nerves, and a bad constitution generally. Natural tastes and pleasures become distorted and forgotten. Contentment and happiness are thought to be found in placing the nerves in a semi-conscious condition in which pain and discomfort are veneered, and the nerves are tickled into the belief that they are having a good time, but such a course reacts strongly, bringing chronic invalidism and broken health.

Nervous exhaustion, or neurasthenia, as it is called these days, to meet a pressing demand for a technical term to express an increasingly common condition, makes itself known by symptoms legion. It lays its hand on men and women alike, and is likely to leave its impress on every organ and function of the body.

All who from overwork, physical or mental, from worry or excess, or from any cause expend nervous energy faster than it is formed, deplete their nervous system, producing nervous exhaustion. Its manifestations may be seen in motor, sensory, or psychical weakness. Thus the atonic, trembling voice of the neurasthenic, the irregularity in the heart's action, the frequent flushing of the face, the cold, clammy hands, the tremors and twitchings of the muscles, are common motor symptoms. A man of good muscular development, and in apparent health, was so devoid of physical strength and endurance that walking half a square would completely exhaust him, and send him to bed for recuperation.

Headache and sensations of pressure and fullness, heaviness, sounds of explosions in the head, partial numbness in various parts of the body, vertigo, and dizziness are common disturbances of sensation.

A typical case is this: A strong, healthy-looking man had given his brain and body insufficient rest and relaxation. Business stress and reverses caused worry, sleeplessness, and loss of appetite. He became "fatigued all the time." He said: "My sleep is broken and unrefreshing. I wake in the morning having a dull heavy pressure in the back of my head and neck, and feeling more fatigued than when I retired." He complained that he lacked his usual vigor and enthusiasm for his work, but with increased efforts and dogged indifference to his feelings, he held himself to his daily routine until outraged nature enforced an unwilling halt, and "break down" ensued. Insomnia and worry were loth to leave their victim.

Worry wears on the nervous economy with greater ruthlessness than does work, because the latter is equally thrown upon and distributed to all the centers involved in normal mental efforts, but continued worry on any subject hammers away, and soon exhausts the group of cells involved in the process. This disturbs other centers, and destroys the equipoise of mental action, thus changing the disposition of a man from equanimity and strength to instability and weakness.

Such an individual, instead of looking at the ordinary problems of life with confidence and courage, shirks labor and responsibilities with a hopelessness and fear pathognomonic of nervous exhaustion. One sick with an incurable malady is often the last to yield hope, even after friends and physicians have despaired. This phenomenon is reversed in cases of nerve fatigue. The condition is curable, yet hopelessness exists because the nerve force is so reduced that the mere holding on to life seems a burden too heavy. To abstain from dying demands a degree of force just as truly as to keep one's self in the erect posture demands it.

Abnormal fear is another symptom varying in degree and in the way it is manifested. Fear of some ill-defined impending disaster or approaching death is common. One woman always had an intolerable dread of going into the street. One man had a fear of space. High bridges and buildings or the open prairie were torture to him. The fear was constant that he, with the rest of the human family, was going to be swept off the earth into space at any moment.

Another gentleman was never quite sure that his face was clean, so he would wash and wash and rewash it. A similar case could never be certain that he locked the door or turned out the gas completely, even after he had reassured himself once or twice by getting out of bed and finding the door safely bolted.

Deficient mental control in varying degree is felt by and observed in persons who are nervous. A young man recently

seen, who had evident strong mental power and keenness of mind, was in his present condition unable to concentrate his mind on a line of thought more than a few moments without immediately feeling cerebral fatigue. Another patient found the concentration of mind necessary to write a letter, irksome and exhausting.

Another sign of nerve fatigue, more common perhaps, but not less typical, is mental irritability. Tired mothers and careworn business men fret and worry over trifles which, if they were feeling calm and well, would have no influence upon them.

Hysteria, a functional disease of the nervous system allied to nervous exhaustion, presenting an array of symptoms more complex than the latter, is seen more and more. The jerky movements of chorea, and the convulsions and spasms of epilepsy are becoming more and more frequent. The most reliable statistics show all functional diseases of the nervous system to be frightfully on the increase.

The growing demands for insane asylums, which are to-day overcrowded, the increasing proportion of idiots and imbeciles in the population, the blunting of the moral sense, and the growth of pauperism and crime, all cry loudly for the cultivation of those habits of life which give strong brains and steady nerves.

HE WORRIED ABOUT IT.

WHEN the weather was murky, he gazed at the sky,
And he worried about it;
He watched the gray cloudlets go scurrying by,
And he worried about it;
"I 'll bet it will rain," he would say to a friend,
All manner of dire disaster portend;
His life was one fret from beginning to end,
For he worried about it.

He had a few troubles, as human kind will,
And he worried about it;
The good he belittled and magnified ill;
And he worried about it;
His health was nigh perfect, but then, if you please,
He fancied he had most every disease,
And martialed his ailments in columns of three's,
And he worried about it.

—*St. Paul Dispatch.*

THAT PATHOLOGICAL EXHIBIT.

BY CAROLYN GEISEL, M. D.

HAVE you a price list?"

"Yes, sir, here it is."

"Where shall I be able to get these food stuffs in V—? I am anxious to know, because from this hour I shall eat no more meat."

"Why from this hour, sir?"

"I have seen the pathological exhibit."

There was a generous touch of gray in the hair that shaded the serious face of the doctor who asked the foregoing questions of the rosy-cheeked picture of health standing behind the health-food counter, and as we listened, at first idly, to his earnest inquiry, we felt that an exhibit which could thus impress a man of his apparent thoughtfulness must be worth looking at.

We crossed the open space at the entrance to Young's Pier, and soon stood in the glass-covered room overlooking the majestic Atlantic, and our nostrils caught the salt fragrance of God's mighty antiseptic as it dashed its cleansing spray against the pier; but, mingled with the clean breath of Old Ocean was the scent of a putrefactive unpleasantness so pronounced that we looked for the cause, and found it in that pathological exhibit.

Three tables, three feet wide and as

many yards long, were set out in the middle of a glass-roofed room over the ocean, and — by the pathological section of the American Medical Association — had been generously covered with things usually called good to eat. There were sheep's trotter and pigs' feet, loin of beef and shoulder of mutton, liver, kidney, and sweetbread, not to speak of numerous dead chickens and turkeys that covered the table. The sheep's trotter had bulging enlargement of joint, the size of a man's head, from tubercular deposit. A pig's foot, not yet made into souse, was pouring liquid disease from an open, ichorous surface the size of a human hand. A calf's foot, not yet made into jelly, was bursting with a tuberculous upper joint. Near these lay the udder of a cow from which, unquestionably, had been gathered quarts of tuberculous food for hapless infants. It was carefully cut and laid open, and — the exposed inner surface showing — was very closely studded with tubercular deposits.

Muscular tissue and bone from every part of the body seemed not to have escaped the vigilant bacillus in his quest for a home, those especially delicate bits that tempt the epicurean palate appearing also to be most enjoyed by the tubercle germ. Sweetbread was hardly to be recognized in the enlarged, offensive mass in which the bacillus had builded him spreading habitations for his numerous family. Kidney, brain, and liver were all proof that no flesh is invulnerable to this dread disease.

With hand still guarding mouth and nostril we turned away, faint with disgust at the revolting sight, fearing longer to breathe the tainted atmosphere, yet reflecting, as we went, that pounds of this delicate danger had been set before us by hospitable host and loyal friend.

Later, as we sat at dinner at our own hotel, with delicious nut foods in tempting variety before us, we felt reverently thankful that God, who created the body with its requirements, had not left a need to be supplied from such dangerous source. Many a fragrant helping of meat was pushed back from the plate by the thoughtful physician that dinner hour, and of the three thousand medical men who visited this meeting of the American Medical Association, and saw this striking object-lesson, many more than this one whom we quote returned to his home pledged to guard the lives dependent upon his advice from a common and growing danger.

A FISHERMAN'S STRING.

I WENT a fishin' one sweet summer day,
Bein' sick o' work an' wantin' to play.
I longed for a sight o' the woods an' things,
The smell o' ferns an' the whirrin' o' wings;
So I took my rod an' a piece o' pie,
An' I struck a path that goes m'anderin' by
A brook that 's plum full o' shinin' fish,
The purtiest ever was served on a dish.

There, shady and snug-like, beside the brook,
I fixed up my rod and baited my hook.
'T was as sweet as heaven there in the shade,
The fragrantest day that God ever made.
The birds they was busy as gatherin' bees,
There was matin' goin' on in the trees,
An' I 'd luck that day—the tidiest batch
As ever was fisherman's lot to catch.

First, I caught sight o' a thing so sweet,
Outside o' Eden it could n't be beat;
'T was a nest o' babies — a robin-brood,
All a-cheepin' an' pesterin' fer food.
How the old birds worked till each crop was filled
An' every hungerin' cheep was stilled!
Then I thought o' the Father's love for me,
Till the tears brimmed up, an' I could n't see

Next, I caught a sight o' a shinin' fin;
'T was a trout enjoyin' his mornin' spin.
"God put you in there, ol' fellow," says I,

"An' there ain't no reason that you should die.
To-day there 'll be fun an' freedom fer you;
I 'll just let you swim, an' that 's what I 'll do!"
An' I surely caught, as I left him there,
Another sweet glimpse o' my Father's care.

So I stayed there — an "fished" — the hull day through,
Enjoyin' the trees an' the sky o' blue,
The robin's clear call an' the pillow o' moss,
An' not a thing sufferin' hurt an' loss.
Yes, I might 've shot an' I might 've snared,
Or I might 've hooked, but fer once I spared,
An' I caught in my heart as I came away
An echo of voice that seemed to say:—
"Be kind, thou good Father of us all,
To the man who loveth the robin's call,
Who looked on the fish and harmed it not,
And hurt no thing in this holy spot."

—Ada Melville Shaw, in Zion's Herald.

THE WONDERFUL HEALING POWERS OF COMMON WATER.

BY J. H. KELLOGG, M. D.

WITHOUT question, ordinary water, simple, pure, cold water, just as it distills from the clouds and before it has been contaminated by contact with earth, is by far the most powerful and useful of all known healing agencies.

Water heals, not by any occult or magic power, but by co-operating with the natural forces of the body, aiding those physiological processes by means of which the body sustains itself in health and resists the encroachments of disease.

The simplicity of this curative agent and its cheapness are chiefly responsible for its neglect. We prize most those things which cost most, irrespective of their intrinsic value. A man will exchange a fortune for a painted landscape when he can see a finer one any day by looking out of his sitting-room window. When the Austrian peasant boy, Priessnitz, first began the use of water in his mountain village a century ago, the neighbors believed the wonderful cures wrought to be due to certain charms or incantations by which he was supposed to communicate to the water its healing power.

Water is only a simple, rather inert, physical body, chiefly useful as a diluent with which to dissolve our food and to distribute it through the body, and to remove wastes from the inside and dirt from the outside. It is also a means by which heat may be communicated to or removed from the body. Yet these simple uses are of such importance to the system that by their exercise water is a more potent and a more universally helpful agent in dealing with disease than any other means, and perhaps than all other means combined, excepting such hygienic measures as are necessary for the maintenance of health and life.

Let us note some of the ways in which water renders service in the treatment of acute and chronic maladies, without attempting to make our survey of the subject at all exhaustive or seriously analytical.

First of all we must understand that water has no curative power in itself. The healing power by which the sick man is restored to health resides not in any drug or remedy of any sort; it is to be sought only in himself. There is in every living man, every living thing, a marvelous intelligence by means of which its life is maintained and cared for and its vital processes directed. This power is commonly called nature. The scientist terms it "The First Great Cause," "The Unknowable Intelligence." The enlightened Christian calls this intelligent power, God. The same force or

being that created man presides at all his functions, from birth to death; puts him to sleep at night, awakens him in the morning; tells him by hunger when he should eat, and by thirst admonishes him to drink that his thickened blood may be thinned. This same being restores the weary man, repairs the injured man, heals the sick man.

God is the healer, as well as the creator. By the use of a natural agent like water, we may co operate with the great healing power which dwells in man, which is abroad in the universe, creating, feeding, blessing, healing.

Let us now look a little into the wonderful ways in which water heals, or rather develops and calls into action and assists the divine healing process in man.

When one is weary and exhausted on a hot summer day, instinct — that is, the voice of the divine indwelling intelligence — leads us to seek recuperation and refreshment in bathing the face with cold water. When one is drowsy or dull, he applies to his face the same cooling bath, and in both cases finds himself aroused, awakened, his wits enlivened, his mental faculties quickened. The pale weary face looks fresh and alert; the dull, sunken eye beams with intelligence, the depressed mien has disappeared. This is certainly a magical change, yet it is so common that the reader, we dare say, has never thought to inquire the reason for so wonderful a transformation.

The rationale is easy to one who knows the power of cold water, at least a superficial explanation may be readily given. It is to be found in the simple fact that cold water when applied to the skin, stimulates all kinds of vital work, and arouses the internal organs, each and all, to vigorous action.

When applied to the face, cold water stirs up the flagging energies of the brain. Applied over the heart, this organ is made to beat with greater steadiness and vigor. A dash of cold water upon the chest produces a deep, quick gasp and a succession of deep, full inspirations, through stimulation of the breathing organs. So likewise, a cold compress or douche over the liver causes increased liver activity; over the stomach, cold causes increased production of pepsin and acid, or gastric juice; over the bowels it stimulates intestinal activity; over the loins or the sternum, it increases the action of the kidneys. Thus every organ in the interior of the body may be aroused to increased activity by the simple application of cold upon the skin overlying the organ. But it is necessary that the application should be brief (3 or 4 seconds to as many minutes). This is a wonderful fact, but one which has been as thoroughly established as that the earth is round and turns upon its axis.

Here is one plain and simple fact, and a fact of immense importance in dealing with diseased conditions,— that by short cold applications to the skin we may increase at will the activity of any sluggish part or any part whose function we wish to increase as a means of aiding the body in its battle against the causes of disease.

Let us now pause a moment to look at a few examples. We know that the dull, drowsy brain can be awakened to increased and more effective action, by even a cold bath to the face and head. By means of a cold bath to the entire surface, the whole nervous system may be aroused and stimulated to unwonted activity. Joseph Parker, the great London preacher, declares that if he can get a cold bath just before he steps upon the platform, he is master of any audience that can be gathered before him, and he keeps a bath tub in a little room behind his pulpit for the purpose.

A slow stomach may be waked up and set to doing effective work in the same way by a local or general cold bath daily administered. A cold bag over the stomach for half an hour just before mealtime, is a wonderful appetite awakener, equaled only by the general cold bath, and the "brow sweat" which is nature's exaction as the price of a normal desire for food.

The best of all prescriptions for cold feet is to stand in very cold water one half inch deep, and rub one foot with the other in alternation for five minutes. It is a good plan to maintain the water at as low a temperature as possible by a running stream. A good way is to stand in the bath tub with the cold water faucet open and the plug out. At the close of the bath the feet will be red, and will fairly burn with the afflux of fresh warm blood.

Heat, on the other hand, tends to lessen vital work. So we use heat when we wish to diminish activity. Pain is an evidence of excessive activity. Heat is nature's great remedy for internal pain. Heat cuts off the influence of cold, and at the same time diverts the blood to the surface in a way which we may explain at some other time. Cold, on the other hand, usually increases pain when the seat is some internal organ.

When pain and slowed action are both present, we may obtain relief by employing both agents, first the heat, a fomentation, then a cold compress.

We may apply both at the same time, as when we apply for toothache a fomentation to the cheek and an ice-bag to the neck under the jaw. In the following article we have enumerated briefly some wonderful things that water will do.

SOME THINGS THAT WATER WILL DO FOR THE SICK.

A VERY cold compress, as a thick folded towel, or a mass of cheese-cloth, applied to the head and face, will relieve headache when the head is hot. The hair should be wet, and if the case is obstinate, apply an ice-collar around the neck (Fig. 1).

FIG. 1.

A cold compress applied to the abdomen in typhoid fever during the entire course of the disease will prevent ulceration and hemorrhage in nearly every case.

FIG. 2.

The compress should cover the whole abdomen, and should be wet in water at 60° F., and must be changed every twenty to forty minutes, according to the degree of fever, or as often as it becomes well warmed (Fig. 2).

For weak or failing heart, apply a cold compress over the heart (60°

FIG. 3.

FIG. 4.

FIG. 5.

FIG. 6.

F.) for fifteen or twenty minutes, and repeat every hour (Fig. 3).

For inflammation of the lung, apply a cold compress (60° F.) over the whole part of the chest and the affected side, and change every fifteen to twenty minutes, or when well warmed. Apply a fomentation for ten minutes once in two or three hours, or more often if pleurisy pain is present (Fig. 4).

An acute coryza, or cold in the head, with sneezing, and running at the nose, may be cured in a night by wetting the hair and putting on an oil-muslin or mackintosh bathing cap to be worn over night (Fig. 5).

For a severe pain due to inflammation in the hand or finger, immerse the elbow in cold water (Fig. 6).

For a lung cough, apply the chest pack. There is nothing so effective, and at the same time harmless, in all the materia medica as the chest pack. Apply two towels, as shown in Fig. 7, and cover these with flannel, as shown in Fig. 4, page 421. The compress should warm up at once and keep warm.

For a sleepless man who has too much blood in his head, there is nothing better than a bath at 92° F. at bedtime for thirty minutes, and a wet girdle to be worn during the night. The girdle is a towel long enough to reach once and a half around the body, wrung dry out of cold water, and covered so it will warm up quickly, with a thick woolen bandage (Fig. 8).

For a "crick in the back," a large fomentation applied at bedtime and followed by a towel wrung out of cold water and covered warm with flannel to remain over night, is worth a hundred porous plasters and all the liniments of the pharmacy, "pain-killers," "wizard oils," "kidney pads," "electric belts," and all the rest of the quackish ilk.

For pain in the eyeball, apply a light

FIG. 7.

FIG. 9.

FIG. 8.

fomentation over the eye and forehead just above the eye, not the cheek.

For colic pain, give a hot enema, apply a fomentation, and afterward a wet girdle for an hour. Repeat this procedure if necessary.

Pain in the pelvis is almost always relieved by a very hot foot bath, which relieves the congestion by diverting the blood into the legs. This procedure is shown in figure 9.

DISEASES OF CHILDREN COMMON IN SUMMER.

BY FREDERICK M. ROSSITER, M. D.

THE number of children that succumb to digestive disorders every summer exceeds by far the number of men killed in battle during an entire generation. However, the mortality among children has been greatly reduced during the past decade by improved sanitary and hygienic methods.

The frightful infant mortality of past years has gone hand in hand with filth, unhygienic surroundings, and ignorance. The younger members of the human family are ready victims to such environments.

Summer Complaint.

The disease commonly known as "summer complaint of children" more than decimates the infant population of the cities. It is not at all strange that it strikes terror to the hearts of mothers. But the redeeming feature of this disease is that it is entirely preventable.

It occurs during the first and second summers of a child's life, and is common among bottle-fed babies. It is due to filthy bottles and nipples, overfeeding, poor quality of food, dark rooms, bad ventilation, contaminated water, overripe or decayed fruit.

The nursing bottle commonly used, be it "hygienic," "sanitary," or otherwise, is a source of danger to any child. Milk very quickly decomposes, especially in warm weather, and unless both bottle and

nipple are scrupulously cleansed, some portion of the previous meal remains, ferments, infects the next meal, and the child is made sick. Scalding a bottle, nipple, or pail is not sufficient. It must first be thoroughly cleaned mechanically, and this is impossible in most bottles. Personally, I do not think a child should ever be allowed to suck its milk out of a bottle through a rubber nipple or tube. If an infant is so unfortunate as to be fed artificially, it should be fed with a spoon. This takes time, but in the long run a mother will save time, expense, and in many cases her child.

There are many advantages in feeding babies with a spoon. They are prevented from eating too rapidly and from taking too much food. When a child is fed with a spoon, it is possible to give it wholesome, nourishing food that could not be drawn through a nipple. It is easy to keep a dish and a spoon clean.

If milk enters into a child's food at any time, and especially during the warm months, great care must be exercised to see that the milk is as fresh as possible, and not on the point of souring. Milk delivered by dairymen in the morning in most cases not only contains the fresh, morning milk, but the milk of the previous evening is mixed with it, possibly after having been skimmed. So part of the day's milk is fresh, and part is already too old. I am confident this is a very frequent source of vomiting, diarrhea, and colic in children. If milk is a part of a child's diet, it should be fresh morning and evening, and from as wholesome a source as possible.

Symptoms.—Irritability, moderate fever, frequent stools, at first of a yellowish color, then becoming greenish, and containing curds of milk or undigested food. Colicky pains are present, the limbs are drawn up, and the bowels are distended with gas. If the child does not recover in a day or two, the inflammation becomes more extensive, and the symptoms are more severe. Vomiting is common, and the stools may contain mucus and blood. The pain is increased in the abdomen, which is very sensitive to the touch.

Cholera Infantum.

This disease very frequently follows the above conditions. Often it comes on suddenly. The symptoms are very characteristic. The first symptom is diarrhea. In this disease the stools are thin and watery, and frequently have a musty odor. Vomiting soon develops. At times it is incessant, and nothing can be retained in the stomach. Both of these symptoms give rise to intense thirst. The temperature is very high, 104° to 106°. The disease is so exhausting that there is marked prostration, followed by collapse. The features are pinched, the eyes are hollow, the fontanelles are sunken, and the hands and feet are cold. In all cases of cholera infantum the prognosis is grave.

Treatment.—In the three conditions the treatment is practically the same. The child should have absolute rest, and should not be carried about or jostled up and down on the knee. No food should be given for twenty-four hours. The patient should take nothing but water, lime water, or barley water. If at the beginning there is much colic and abdominal distention, a teaspoonful of castor oil to a child one year old will be helpful. If the temperature is moderate, a copious enema of water at 105°, given slowly, will afford much relief, or a cool enema of 80° may be more acceptable.

In cholera infantum where there is considerable gastric irritability, a stomach wash of warm water often gives almost immediate relief. For a small child a large rubber catheter with a small glass funnel should be used in place of a stomach tube.

Fomentations should be applied to the entire abdomen for ten or fifteen minutes, and this should be followed by compresses wrung out of water at 75°, and renewed every twenty minutes, alternating with fomentations every two hours. The fever can be controlled by cool sponging, with gentle but rapid friction. The feet should be kept warm.

If the temperature is high, the full bath at 92°, for from fifteen to thirty minutes, will have a sedative effect, and reduce the fever. If the stools contain much mucus or are bloody, an enema of four ounces of starch water, preceded by a plain enema, will soothe the irritated membrane. If there are marked symptoms of collapse, give a hot bath. After the first twenty-four or thirty-six hours, a light fluid diet may be given, such as barley water, strained barley gruel, gluten gruel, equal parts of limewater and milk. Drugs and all soothing syrups should be avoided.

Sore Mouth.

This is a condition that frequently disturbs the peace and happiness not only of the child but of others. It may be avoided by giving care to the diet and keeping the mouth cleansed. If the lips, gums, and tongue are sore, wash the mouth with a solution of ten grains of potassium chlorate to an ounce of water before and after eating. For a very young child this may be done by using a clean cloth on the end of the finger. A saturated solution of boracic acid is also excellent.

Heat Rash.

This annoying condition, which often causes the little one to suffer intensely, is due to heat and to indigestion, producing a spasm of the little blood vessels in the skin. Bathing the skin frequently with soda water often relieves the irritation, also bathing with hot or cold water.

STARCH AND ITS RELATIVES.

BY J. H. KELLOGG, M. D.

THE carbohydrate family is a family of four; *viz.*, starch, cellulose, sugar, and dextrin. Starch and cellulose are the stable, insoluble, or permanent forms, while dextrin and sugar are the soluble forms. The two latter are in the condition intended for transportation, while the permanent form is generally found in the shape of starch or wood.

Late in the fall the maple tree carries the dextrin which is always found in the sap down to the roots of the tree, where it is converted into starch. In the spring this starch is largely converted into sugar, and carried up by the sap to the top of the tree, and is there transformed into wood, leaves, bark, branches. While it is thus being transported, the farmer bores a hole in the tree, puts in a spout, and steals a part of the sap, which he converts into sugar by evaporating the water.

There are other trees besides the maple which have this property of making sugar; for instance, the hickory, the beech, the box elder, and various other trees. The same is true of the sorghum; it is cut when sugar is most abundant in the stem, the stalks are crushed, the water is evaporated from the juice, and thus sugar is produced. The same process goes on in the ear of corn. The sugar circulates in the stalk in the form of sap, and is brought into the ear and deposited in the kernels. In this condition the corn is said to be in the milky stage, and at this time it contains a large amount of sugar and

dextrin which have not yet been converted into starch, so it is very sweet. There is about fifteen per cent of sugar in corn when it is in the green stage,—at that stage when the ears are called roasting ears. It is an important point to know that there is but little starch in corn until it is ripe; then the dextrin and sugar are converted into starch, and deposited in the kernel for future use; so if corn is eaten in the milk, the starch is largely in a digested form, the same as it is in ripe fruit. The same is true of wheat. When it is in the milk, there is a large amount of dextrin and sugar present, but as the wheat matures, the dextrin and sugar are finally all converted into starch, and then there is but little sweetness in the kernel.

Starch and Dextrin.

Why does nature change the sugar and dextrin into starch? This certainly does not increase its value for eating purposes, but it does increase its usefulness for the future good of the plant. Each seed or kernel is really a legacy which is to be passed down to the next generation — a capital stock for the new plant to begin its life upon; it is in reality a last will and testament carefully drawn up; after the property is all stored away, it is beautifully and closely sealed in a little horny or glass case. In this manner nature cans everything to be eaten. The outside of the little kernel of wheat is glass, and that is what makes it so smooth. There must be some sand and calcareous matter around the kernel in order to keep the water out and properly protect it. This property that is so securely sealed up in the kernel is largely starch. It is all the capital with which the little wheat plant has to start out in life in the following generation; and so nature is careful to put in everything that is necessary — the same as a mother does who puts up a basket of lunch for her boy or girl who goes to school. Possibly she will put in a piece of bread and butter, a piece of pie, and perhaps of Bologna sausage, and many other indigestible things. Nowadays, to be really up to date, the mother ought to put in, along with such a dinner, a dose of some digestive agent, as pepsin, or something of that kind, so that the indigestible things can be digested. But nature puts in a stomach, so to speak, along with the starch, for it deposits a little digestive agent, diastase, for the purpose of digesting the starch. A little of this is placed in every kernel of corn, wheat, barley, or rye, and its purpose is to digest or transform the starch when in the future the little plant will need it for nourishment.

When the kernel of wheat or corn is taken away from the stalk and put into the ground, then the old father or mother is dead and gone, and the little youngster — that is the germ — lies beside his bundle of provisions which is so closely attached to him. That bundle contains his breakfast, dinner, and supper; it is his whole property; it is the legacy left him with which to start his new life, and while yet it is buried in the ground, the warmth from the sunlight reaches it, and starts up the activity of the diastase so that it begins to digest some of the starch in this little bundle, and converts it into sugar, just the same as happens in the roots of the maple tree in springtime. This sugar then becomes the nursing bottle of the little plant, and furnishes it with the material for building up its stem, for the stem must be fed in this manner until it gets up into the sunlight, as it is only under the marvelous influence of sunlight that the wonderful transformation can take place whereby carbonic acid gas, air, water, and various substances in the soil can be brought together to produce more starch.

This process can not begin until the stem reaches the light, so nature intends to put enough starch into the little bundle to enable the plant to reach its head above the earth into the light; but if it is buried too deep, it will die, because there is not material enough in the seed to enable it to reach out of the ground; its capital is used up before the stem is able to begin to appropriate new starch. It is just as if a father had given a boy enough money to build a mill, but if he builds the mill on too large a scale, so that he does not have money enough left to get the machinery with which to run the mill, he must fail in business. So, if the kernel of wheat is buried too deep, it will use up its store of nourishment before it reaches the sunlight where it can receive help to manufacture more dextrin and sugar upon which to live and grow. The wood in our furnaces is really made from sugar and dextrin. The chemist can convert starch into sugar by the proper chemical processes; he can even convert sawdust into sugar, so it is evident that this family — starch, cellulose, dextrin, and sugar — are all children of the same father.

The dextrin and the sugar are the traveling members of the family, while the starch and the cellulose are the stationary members, — they stay at home, and can not be carried about as the others can in the sap of the growing plant.

It is very reasonable that nature should manufacture starch for the plant, because it is something that can not be dissolved, and therefore can not be carried away. If nature should store away sugar instead of starch, it would be dissolved by the first rainstorm, and every rain would spoil the seed, but starch is insoluble, and further than that, it is unfermentable.

Should We Eat Carbohydrates in the Form of Starch?

The objection to the use of starch is that it was never designed to be eaten raw to any considerable extent. Our teeth are not suitably constructed to masticate the dry grain, but they are adapted to the use of the grain in the milky stage, just as they are adapted to chewing nuts and fruits. In the second place, starch in the raw stage, that is, in the form in which it is found in ripe grain, is not digestible in the stomach. We should not, however, conclude to discard starch as a food, but we should, so far as possible, bring it back to the form of dextrin, — the form in which sugar is furnished to us in fruits and nuts; then it is fit for human consumption. The necessity for the use of dry seeds results largely from the barrenness of the earth, the disappearance of nuts and fruits, and the perversity of man in insisting upon living in climates which are not adapted to him, and which are not hospitable to him.

Man a Tropical Animal.

Man is naturally tropical, and the farther he goes from that climate, the more difficult it is for him to subsist. As he gets nearer the tropics, we find him living upon fruits and nuts, and more naturally in other ways. In tropical climes can be found an abundance of luscious fruit, with its starch in the form of dextrin and sugar already digested. Nature intended us to take starch almost completely digested, but she never intended that we should eat it in the raw, refractory state in which it is found in dry grains.

The original man was supplied with abundance of food in the form of fruits and nuts, and grains in the milky state, for under those conditions the grains undoubtedly ripened at all seasons of the year. Because of artificial conditions, we have now left us, compared with what Adam must have had, only a few specimens of nuts and a very few scrawny and unpalatable fruits. Hence the man who lives in the temperate and subtropical

regions is compelled, by sheer necessity, to feed upon grains, for here the fruits do not ripen at all times of the year, and nuts are scarce. Where there is an abundance of sweet fruits, the people live on them at all seasons; and in such climates there are also nuts in abundance.

In tropical regions the cocoanut ripens throughout the entire year. It is, however, eaten in the green state; it is palatable, is not hard and fibrous, and can be eaten like custard. With a sharp knife it can be cut through, shell and all. The fluid in it is always cold.

The Transformation of Starch.

There are some twenty or thirty different chemical steps through which starch passes in the process of conversion into sugar. As heat is applied to it, it first reaches the soluble state, or what is known as amylodextrin; then passing through several more steps, it reaches another landmark, known as erythrodextrin; passing through several more steps, it comes to another well-known and easily recognizable stage, known as achroödextrin; then climbing up a few more steps, it becomes maltose, which is as far as digestion carries it in the alimentary canal. But as it passes through the mucous membrane to be absorbed into the blood, it is carried through still one more step to what is known as levulose, the sweetest of all forms of sugar; this is what gives to honey its rare sweetness. So it is a long ladder to climb in passing from starch to levulose, which marks the last stage in the digestion of starch.

No matter how long raw starch is chewed, the saliva alone can not even begin this process, but if the first stage has been accomplished by cooking, then by long chewing it can be carried up through the other stages; but in proportion as we carry it through each of these stages before it is eaten, the *sooner* the saliva will finish the process when it has an opportunity to come in contact with it.

We must not overlook this point, that we have to supply saliva enough every day to act upon about sixteen ounces, or a pound, of starch, and convert it into sugar. The saliva is swallowed with the starch, and continues for a long time to act upon it in the stomach, converting a portion of it into maltose, and as it passes on into the intestines, it is further acted upon by the pancreatic juice, which converts the remainder into the same substance; and as the maltose is passed through the mucous membrane of the intestines to be absorbed into the blood, the process is, as before stated, completed, namely, its conversion into levulose.

The Miseries of Mush.

The evils which result from imperfectly cooked starch are almost innumerable. Starch, when eaten in this condition, remains in the stomach for a long time, and, though practically indigestible, has still been cooked just sufficiently to be fermentable; therefore it sours, forming acids which irritate the mucous membrane and set up catarrh of the stomach, and when these acrid contents are passed into the intestines, further irritation is produced. From the gas thus formed, there result distention and dilation of the stomach, and other troubles from the absorption of acetic acid, which is formed during the process.

From the recent researches of Dr. Boix it has been made clear that this acid is more productive of gin liver than alcohol itself. The formation of butyric and formic acids also leads to cirrhosis of the liver and the derangement of the whole body. I think that mushes are responsible more than any other food for the production of dyspepsia. These kettle-cooked starches have only been cooked

sufficiently to make paste, and the paste forms lumps in the stomach. Oatmeal cooked in this way is slimy; if put upon the hand, it will stick like a life-insurance agent. The same is true of the inside of bread that is imperfectly done. One can work it into a bullet so hard that it seems as if it would kill a man if fired at him at close range. The troubles that result from eating poorly cooked starchy food lead to the worse habit of meat eating. Many persons who have acquired the habit of eating poorly cooked oatmeal and similar foods have become dyspeptics; they have then begun the use of meat, which apparently gives them less distress because it does not sour in the stomach, and is digested by the gastric juice without much difficulty. But if the person eats a combination of beefsteak and oatmeal, he is worse off than before, because the meat absorbs the gastric juice so it can no longer act as an antiseptic, and the oatmeal has a better chance to ferment. A combination of meat with these imperfectly cooked cereals in reality results in the worst kind of disorders, and so little by little the man intuitively drops off the oatmeal and similar foods, and comes to live almost exclusively upon meat.

Unfortunately, it is too often the custom to cut off the outside of the loaf, leaving the inside a sort of whited sepulcher. The crust is the only part of such bread that it is possible to digest, the central portion containing millions of germs, and if swallowed with beefsteak, being practically indigestible; yet on account of the yeast that is in it, it ferments in the stomach just the same as it would in the bread trough; and, as it must remain in the stomach for a long time, the beefsteak requiring several hours for digestion, fermentation is certain to take place. So the man finally comes to eat nothing but beefsteak and other evil things.

Thus we Americans, as well as the English and Australians, have come to be great meat eaters; at the same time we have reached the point where we are recognized as a "nation of dyspeptics." It is my opinion that this use of cereals is largely responsible for the extensive use of meats. The widely advertised "breakfast foods" that are ready for use after fifteen minutes of cooking are a delusion and a snare. It is impossible to prepare cereals properly even by any length of kettle cooking; they must be cooked dry, at a temperature of about 300°. There are three ways of preparing cereals; *viz.*, kettle cooking, oven cooking, and roasting. Kettle cooking produces only paste; oven cooking is a great deal better; but roasting, by which the starch is cooked until thoroughly browned, is the *only complete* cooking.

We were never intended to eat raw starch, but we are in a situation where we must accommodate ourselves to our difficulties, and in this emergency we must make the best of it, and in order to do that with starch, we must cook it until it is brown. If we are to use grains, we must bring the starch as nearly as possible to the state in which we find the carbohydrates in fruit. We can carry it through the first three principal stages of dextrinization by heat alone, and by the action of vegetable diastase we may carry it even one step further,— to that of maltose,— and then it is ready for *immediate* absorption.

THE "ARK."

BY ALICE TURNER MERRY.

THE large awning-topped summer-house was most appropriately named the "ark," and it was certainly appropriated by all the children in the neighborhood.

It stood embowered in trees, bounded on the east by the sweet-pea patch, on the north by the sand pile, and on the south by the croquet ground, while on the west the path led to the house.

The furniture was the hammock, the playroom movable cupboard, a small kindergarten table, and half a dozen kindergarten chairs. In the cupboard were a large-sized set of doll dishes, a small tablecloth, a little dishpan, and towels. This was the center from which radiated the good times of the neighborhood,—the place where the baby lived from sunrise to sunset.

Here comes "Punkins" with sweet peas in a bowl, and "Ladybug" with strawberries fresh from the field; and our good Beta now appears at the house door, and that's a signal for a race to the kitchen to see what Beta has for breakfast.

Here come granose biscuits, warm from the oven, and browned rice with malted nuts,—a breakfast fit for precious children!

"Mother's little man" asks the blessing, and when napkins are safely tucked, such an appetite as we all have, eating breakfast out of doors at the time of day when bird minstrels have hardly finished the psalm of praise.

Each one makes a strawberry shortcake after his own idea, and how good it tastes to a child when he has made it himself. The malted nuts are sprinkled dry on the nicely browned rice, and any one who likes may have a piece of crisp zwieback with which to finish the meal.

Our "Punkins," who is a little inclined to eat too fast, continually stops to remind herself—

"Strong body,
Brave heart;
Teeth, 'member
Do your part,
Chew and chew and chew and chew,
And keep your stomach good as new."

When it becomes evident it's all talking and no eating, Beta quietly puts a little tin bucket of warm water on the doorstep, and forthwith the children are washing the dishes in the little dishpan, and putting everything in order in the cupboard.

While "mother's little man" is busy dusting the railing and the gate, I hear "Punkins" ask,—

"How many times have you used that dishrag?"

"Two times," answers "Ladybug."

"Throw it away; it's full of germs."

This sage advice is followed, and a new supply laid in.

It 's the "stocking darning morning," and the children come running back to report that five more chairs will be needed.

Here come the mothers! smiles and babies and stockings. Welcome, one and all!

We mothers settle down to the stocking darning, and our talk, which at first is haphazard and desultory: —

Mrs. S.—"I 've been reading Leviticus, chapter seven, and that seventeenth verse has been running in my head ever since, and adding all the dreadful facts in that 'Shall We Slay to Eat?' book you loaned me, I feel you certainly have the best of the argument, so another scalp for the hostess."

Hostess.—"Dear Mrs. S., I shall doubt the lasting qualities of your vegetarianism unless you use vegetarian figures of speech, but we 'll agree to give you time to complete the cure."

Mrs. B.—"I have been reading that article that says, 'Pure food is the only blood purifier there is.'"

Mrs. W.—"I suggest we begin to make out daily meals for a week, and try this thing with completeness, and see how it works. For a week let's give our children what these 'ark' children eat."

Mrs. C.—"That reminds me to thank our hostess for the loan of her fomentation cloths. They are being carefully washed, and will be returned to-night."

Mrs. W.—"Now, dear, don't change the subject; we are going to make out menus. Our 'mother in Israel' has the floor."

Mrs. S.—"It seems to me there is such an everlasting sameness about your health reform stuff."

Hostess.—"Now, friends, I will answer myself; none of you need take up the cudgels for me. Mrs. S., I blush for you —to call my delicious, healthful, life-inspiring food, 'stuff.' I notice you have always been 'too busy' to stay to dinner with me, and the penalty I impose is that you stay to-day, and even help me and Beta prepare it. We 'll have dinner at two o'clock, and we 'll need only fifteen minutes to prepare it."

Mrs. S.—"Well, I will stay out of curiosity, but I won't promise to eat."

Mrs. C.—"I 'd like to hear a list suggesting variety, especially for children's meals."

Hostess.—"Nuttolene spread on granose biscuit; crystal wheat softened with nut soup stock and warmed in the oven; baked apples and granola; bromose cut up fine and mixed with browned rice; granut and strawberries; fruit toasts—strawberry or banana; grape juice on slices of zwieback; granose flakes and meltose. There are dozens of things—the greatest variety; but the children like all of these so well they enjoy them often. A warm drink of malted nuts after your boy's nap, Mrs. C., will be a help to his temper, and 'keep' him until dinner; and why not try the two meals a day on all but the baby?"

Mrs. C.—"Why, won't it be too long from 3 P. M. until 7 A. M?"

Hostess.—"I understand it takes five hours for a dinner to digest; that brings it to 8 P. M., and the stomach needs eight hours of rest the same as the body, and that brings it to 6 A. M. By the time the children have their spray and are dressed, I think it will not lack much of breakfast time. Perhaps the best time for a willful child to begin the meal with dry food is about fifteen minutes before breakfast is served. A piece of zwieback eaten in the hand with relish is quite a successful edge to the health wedge. You all know my rule of finishing the meal with dry food, to prevent overeating. But truly, friends, what is the use of our boasted higher education for women unless we apply it in that most scientific of ways — to sanitary

science and the hygienic living of the little child?"

Mrs. K.— "I say 'hear,' 'hear,' and give my hand and heart to this vote, 'that daily menus be made out, and a daily cooking class of our maids begin under Beta.'"

Hostess.— "The 'ark' will hold us all, and we will have the class out of doors every morning at nine o'clock. All in favor say 'aye.' The 'ayes' have it."

Mrs. S.— "I am very much impressed with the way the children have gone from one thing to another, and I noticed they all washed their hands first. I wish we all had a Beta like yours."

HYDROTHERAPEUTIC MEASURES APPROPRIATE TO SUMMER.

The Chest Pack or Compress.

THIS treatment, while not differing essentially from packs to other regions, is confined to the chest. It is usually applied to the entire chest, both front and back, extending from the neck to the level of the floating cartilages. A sort of jacket fitted to the patient is the best means of application, or better still, a bandage made of one or two thicknesses of linen, or four to six thicknesses of cheesecloth. The bandage should be eight or ten inches in width, from six to eight feet in length, and should be loosely rolled up, dipped into water at the proper temperature, and wrung out without unrolling. Apply this bandage in a sort of "figure 8" fashion. Have the nurse take the roll of bandage (Fig. 1) in his right hand, and the end of the bandage in his left. Let him stand in front of the patient, who should sit or stand with his clothing removed to the waist. The end of the bandage should be placed under the patient's left arm, and the latter pressed against the side to hold it in position. The attendant should then carry the bandage obliquely across the chest and over the right shoulder; then it should be passed obliquely across the back to the point of starting, and horizontally under the left arm, across the chest in front, and under the right arm obliquely upward to the left shoulder, over which the end should be drawn and tucked under the transverse fold. This transverse portion of the bandage is then pulled up toward each shoulder and fastened as snugly as possible by means of a safety-pin. The wet bandage should be made to fit the patient tightly everywhere (Figs. 2, 3, 4).

FIG. 1.

The attendant should then apply a flannel bandage of the same width and a lit-

tle greater length over the moist bandage in precisely the same manner, care being taken to cover the wet bandage completely, and to make all fit snugly at every point so as entirely to exclude the air. The flannel bandage may be long enough to extend several times about the chest, so as to protect the wet bandage with as many layers as are needed. A bandage of mackintosh may be added to complete the protection in cases requiring it.

The Throat Compress.

In this compress it is desirable to bring under the influence of the application the skin covering the lower jaw from the chin backward, the sides of the face from the angle of the jaw to the ear, and the sides and back of the neck. The compress wound about the neck is of very little use for the ordinary sore throat in which the fauces and perhaps the tonsils are involved.

Fig. 3.

The compress is prepared as follows: For the wet compress, fold a piece of cheese-cloth to four thicknesses, four inches in width, and in length sufficient to reach one and one-half times around the neck. For the flannel covering, provide a piece of soft flannel blanket eight inches wide and long enough to reach around the head and beneath the chin, and overlap an inch. Fold the flannel crosswise, and split down the middle to within an inch of the fold. Open, and split again each of the two legs of one end. Apply first the wet bandage, from behind, crossing the ends under the chin, and folding up against the sides of the neck, covering also the back of the cheek to the ear. Now apply the flannel bandage. If protection is required, apply a strip of mackintosh next the wet cloth.

Fig. 4.

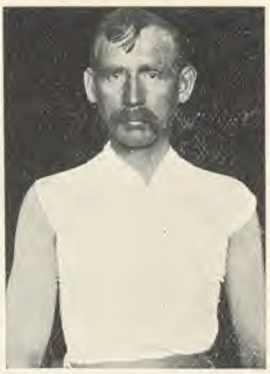

Fig. 2.

This is a very excellent application for the relief of chronic sore throat, especially such as is contracted by exposure of the back of the neck, or by getting the feet chilled or damp. It may be applied at bedtime and removed in the morning. On removal the parts should be rubbed with very cold water.

The throat compress in chronic inflammation should be covered with flannel only. If it seems necessary to apply gutta percha or oil-cloth, dry flannel should be placed outside the mackintosh to prevent too rapid radiation.

The Wet-Sheet Pack.

This procedure consists in enveloping the body with a wet sheet, and preventing evaporation by careful protection with dry wrappings.

Requisites.—One large double blanket, one single blanket, two large sheets, one of which should be linen, a large linen towel, two or three gallons of water at a temperature of 60° to 70°. Water at a higher or lower temperature may be used when indicated, but is seldom required.

Method.—The pack may be applied in various ways. The following method, employed by Winternitz, was shown to the author by Dr. Strasser, assistant to Professor Winternitz, and lecturer at the Polyclinic in Vienna. This, in the writer's opinion, is the most satisfactory:—

1. A sheet is folded once lengthwise, and laid across a couch near its head. The upper edge of the sheet should cover the lower third of a thin cotton or hair pillow placed at the head of the couch.

2. Next, the double blanket should be spread out, and placed across the couch so that one end will hang about two feet over the side opposite the attendant. The upper edge should fall about two inches below the upper edge of the dry sheet.

Applying the Cold Friction Mitt.[1]

3. Two persons should grasp the linen sheet at the ends and wring it out by twisting it in opposite directions until it is as dry as possible. They should then spread out the sheet upon the blanket, the lower end falling an inch or two below the upper edge of the blanket.

4. The patient should lie down upon the sheet in such a way that the upper edge of the wet sheet projects three inches above the shoulders.

5. The patient now raises both arms above his head and the attendants draw one side of the sheet across the body, turning it well up under the arms and tucking it in closely all along the side of the body. Care must be taken that from the hips down, the edge of the sheet is tucked snugly around the leg of the corresponding side, leaving the other leg uncovered. The patient lowers his arms and holds them close by his side while the other side of the sheet is passed over and tucked in. A fold should be made in the sheet over each shoulder so that it may fit the neck closely, but not so closely as to constrict the vessels.

6. The farther edge of the blanket should now be drawn across the patient and tucked carefully under the shoulder, the side, and around the legs. A fold should be made over the farther shoulder, so that the blanket may fit closely about the neck.

7. The attendant should now seize the long underblanket, and pull upon it in such a way as to bring the coverings everywhere in close contact with the body. The loose end is then thrown over and tucked around the patient, being wound about him two or more times.

8. The blanket should now be doubled under at the foot, and the dry sheet at the head brought around with a neat fold over each shoulder, and tucked under the shoulders.

9. For additional warmth, a woolen blanket may be folded once, laid lengthwise upon the patient, and tucked under the shoulders and sides and about the legs. Two or more blankets may be ap-

[1] For method of applying the cold friction mitt, see April number.

plied at first, if necessary, one or more to be removed later.

When the pack is administered in this way, the patient rarely complains of long delay in "warming up." Chill in the pack is usually due to the fact that at some points the wet sheet is not in perfect contact with the surface, and as a result, evaporation takes place with cooling, instead of accumulation of heat and vigorous reaction. The cooling effect thus started in small areas extends to the whole surface, and the patient is made exceedingly uncomfortable. But when the cold sheet is brought everywhere in close contact with the skin, reaction occurs immediately, and the disagreeable effects resulting from prolonged chilling are avoided.

In case of very feeble or very nervous persons, one or both arms may be left out of the wet sheet, but should be included in the blanket, to avoid chilling.

Care must be taken to see that the whole surface of the body is warm when the pack is applied. If the feet do not warm up readily in the pack, they may be left out at the first application, and until reaction is improved.

The head should be thoroughly cooled by wetting the scalp, face, and neck with cold water before the patient goes into the pack, and a towel, or better, a cheese-cloth napkin, saturated with cold water, should be placed upon the face and wrapped around the head, or the neck, if the patient will not permit the wetting of the hair. The towel should be changed at intervals of ten or fifteen minutes during the pack. The duration of the pack depends upon the effect desired. For tonic effects the usual length of the application is twenty minutes, or until the patient feels a general glow induced by the return of the blood to the skin and a sensation of comfort and well-being, which marks the beginning of reaction. If *exciting* or *heating* effects are desired, the patient should remain in the pack until perspiration begins. If the effect desired is *elimination*, then the pack may be continued for one or two hours or even longer, if the strength of the patient will permit.

The cold wet-sheet pack employed in the manner directed has an advantage over the cold bath in that its effects are more durable, being somewhat slowly developed.

The Wet Girdle.

Requisites.—A linen bandage eight or nine inches wide and about three yards in length, or sufficiently long to pass three times around the body; a flannel bandage three or four inches wider, and a waterproof covering of oiled silk or other impervious material.

Method.—The application is to be made in accordance with the principles already pointed out in relation to the heating compress. The girdle may be wide enough to reach from the nipples to the hips, when it is termed the *trunk pack.* In some cases also it is better to reduce the size of the bandage at the start, covering only the abdominal surface instead of passing the bandage around the whole trunk.

There is no more serviceable measure in the treatment of chronic indigestion in all its forms. In *hypopepsia*, it should be applied very cold, wrung very dry, covered just sufficiently to secure good reaction, superheating being avoided by omitting the impervious covering. This is also true in each of the conditions above mentioned.

In *hyperpepsia*, the bandage should be wrung out of water at a temperature of 60° to 70°, very dry, and should be well covered with flannel; the impervious covering being also applied when necessary to secure good reaction, as it is desirable to secure the most powerful revulsive ef-

fects possible, and also the atonic thermic effect of heat.

For *flatulence* of the stomach or intestines, a cold, well-wrung bandage with a moderate amount of the flannel covering should be employed.

The moist abdominal bandage, either with or without the impervious covering, is a most excellent means for combating *insomnia*. The reaction should be strongly pronounced, so as to divert the largest possible amount of blood into the skin of the trunk as well as into the portal circulation, which alone is capable of holding all the blood in the body. As this system is associated with the venous vessels of the abdominal wall, it is possible by means of the heating compress to divert a large portion of the blood into this portion of the circulatory system, thus causing contraction of the cerebral vessels and an accumulation of lymph beneath the dura mater, whereby conditions favorable for sleep are secured.

For the relief of insomnia the wet bandage or girdle should be applied at bedtime, and may be renewed to advantage at least once during the night, as the bandage must be kept moist in order to be effective. The patient is apt to be nervously irritated when the bandage becomes perfectly dry. It is also highly important that reaction should take place promptly, as otherwise prolonged chilliness may result, and the patient become so nervous and disturbed that the hypnotic effect of the application is wholly lost.

The wet girdle, when properly managed, is a more valuable hypnotic in insomnia than any or all of our hypnotic drugs.

The Wet-Sheet Rub.

This treatment consists in a thorough rubbing of the body while enveloped in a wet sheet.

Requisites.— A linen sheet, a Turkish sheet, two towels, a tub containing hot water for the feet, a pail of water at 60° to 70°. Water at a higher or lower temperature may be employed when indicated.

Method.— The patient should be prepared in the usual way, the head cooled and protected with a cold wet towel. He then stands in the tub of hot water with the dry sheet wrapped about him. The attendants prepare the wet sheet, which should be wrung so dry it will not drip.

When the sheet is ready, let one assistant, holding one end of the linen sheet gathered in the right hand, and taking the upper left-hand corner of the sheet with the left hand, step in front of the patient, while the other attendant withdraws the dry sheet. The patient holds up both arms. Let the attendant in front place the upper left-hand corner of the sheet beneath the patient's right arm (Fig. 5); the patient then lowering the right arm, holds the sheet in place, while the attendant passes the sheet quickly across the front of the body beneath the left arm, which is then also lowered. The sheet should then be carried around the body by the assistance of the attendant who stands behind the patient. As the sheet is brought across the back of the patient, behind his right shoulder, the attendant in front reaches over and seizes the upper edge of the sheet just above the point of the right shoulder, and pulls it first upward, then down upon the patient's chest (Fig. 6), while with his other hand he carries it across the chest, covering the fold, and over the left shoulder, deftly tucking the corner under the edge of the sheet behind.

The attendant behind tucks the sheet between the patient's legs, which are then brought tightly together. The sheet is thus brought everywhere in close contact with the skin. As soon as the patient is thus enveloped,— an operation which

FIG. 5.

FIG. 6.

FIG. 7.

should be completed in from five to eight seconds,— both attendants begin to rub vigorously, covering the whole surface as quickly as possible, one the legs and hips, the other the trunk and arms (Fig. 7). The rubbing should be continued for from one to three minutes, or until the one sheet is everywhere thoroughly warmed. The attendant should bear in mind that *the patient is not to be rubbed with the sheet, but over the sheet.*

The Cold Towel Rub.

This procedure (Fig. 8) consists in friction movements made upon a cold wet towel spread out upon the surface.

Requisites.— A towel for the head, several linen towels for the application; a sheet and a towel for drying; a pail of water at the temperature desired for the application, and a basin of water at a temperature ten degrees lower.

Method.— The patient should lie in a recumbent position with all his clothing removed, and wrapped in a Turkish sheet and a woolen blanket, a portion of the covering being laid aside so as to expose the portion to which the application is to be made. The head, face, and neck are first bathed with the colder water, in which one of the towels is also wet, and wrapped about the head. A linen towel is then wrung very dry out of the water prepared for the purpose in the pail. After being quickly shaken out, it is applied smoothly to the part to be treated; and with the hands applied so as to cover as large a portion of the towel as possible, the attendant moves from point to point with firm pressure, so as to bring each part of the towel successively in close contact with the skin. The rubbing should be continued until the skin is warm, when the wet towel may be removed; the dry towel is then placed upon or wrapped about the part, and it is rubbed until the skin is dry and well reddened by reaction. The corresponding part of

the opposite side is then treated in like manner. If the patient is decidedly neurasthenic, special attention should be given

FIG. 8.

to the back; while if the case is one of cardiac insufficiency, special attention should be given to the chest, arms, and legs.

The hands are rubbed upon the towel, but the towel is not rubbed upon the skin. Particular attention should be paid to this. The effect desired is not produced by mechanical irritation of the skin, but by the assistance rendered the circulation by the intermittent pressure upon the tissues. The hands are applied with long, rapid, alternating strokes, falling upon the surface with sufficient force to give a decided percussion effect. The friction movements may be alternated every few seconds with gentle percussion. The whole surface should be gone over constantly, so as to avoid chilling by evaporation.

In order that the desired therapeutic effect may be obtained, the temperature of the water must be maintained at the initial temperature. This may be accomplished by employing a number of towels, so that no towel is used twice in the same application. A plan which the author prefers as more practical, however, is the following: Two pails or bowls of water are prepared, one of which is ten degrees lower than the temperature at which the application is to be made. The usual temperatures will be 60° and 50°. The face, neck, and head are cooled with the cooler water. After a towel has been applied to a surface and rubbed until warm, it is dropped into the cooler water, where it remains while the part is being dried and rubbed. In preparing the towel for a new application, it is gathered and squeezed, then dipped into the other pail (60°), wrung out, and applied to the surface next in order.

COMPANY DINNERS UNDER A VEGETARIAN REGIMEN.

BY MRS. E. E. KELLOGG.

"WE get along very nicely upon our new diet, and scarcely miss the meats we used to be so fond of," said a recent convert to vegetarianism, "but how to arrange a menu and serve a dinner to invited guests, without oysters on the half shell, and with no beef, mutton, fish, or fowl, is still a perplexity."

Presuming that other housekeepers are confronted by a similar problem, it is purposed in this article to present some points concerning the preparation and serving of dinners when company is to be entertained. At the same time it should be stated that the mode suggested is only one of many, and that each hostess can

best please her guests by making her dinner attractive so far as possible through its own individuality. If the guests are those not accustomed to a bloodless diet, the repast, if well planned and cooked and daintily served, will commend itself by its novelty as well as its taste, and there will be no occasion to regret the absence of flesh foods. It is possible by artful flavoring and the skillful combination of materials so to simulate meat dishes that one not in the secret can with difficulty distinguish the mock article from the genuine. But why attempt to counterfeit cooked corpses when nature's provision for our fare is so ample and varied? Let us serve our friends from her larder with some of the genuine luxuries she offers.

Plan to provide not only for the refreshment of the inner man, but a feast for the mind as well; we have read of one enthusiastic apostle of the better way in diet who prepared a chart with the following facetious inscription to hang in the dining-room as food for thought:—

Marbled Beans.

"Man is a frugivorous, not a carnivorous animal; *vide* Cuvier, Linnæus, and other modern scientists. The animals we eat suffer from disease as we do; your chop may have belonged to a consumptive sheep; your steak to a scrofulous ox; your pork tenderloin to a gouty pig; your breast-cut of wild fowl to a lunatic canvasback; your dainty wing to a dyspeptic prairie chicken; and your mayonnaise cutlet to a salmon with incipient paralysis. . . .

"A healthy man should eat no more than he wastes per diem.

"The various dishes that will be set before you will furnish your system with a liberal store of flesh-forming, muscle-strengthening, bone building, heat-giving, force-creating substances.

"Be not downhearted because a dish seemeth bald; there is more meat within than meets thine eye."

We do not commend this as an example to be followed. If some stimulus for conversation seems needed, appropriate quotations neatly written on cards to be placed at each place, with or without some dainty favor, will serve the purpose admirably. The following are a few of the many excellent thoughts which may be thus used:—

> The living herbs,
> But who their virtues can declare; who pierce,
> With vision pure, into those secret stores of
> health and life and joy,— the food of man;

STRAWBERRY SHORTCAKE.

While yet he lived in innocence, and told
A length of golden years, unfleshed in blood,
A stranger to the savage arts of life,—
Death, rapine, carnage, surfeit, and disease,—
The lord and not the tyrant of the world.
—*James Thompson.*

There is nothing men take such pains to keep as life, and nothing they take so little pains to keep well. — *Sir John Lubbock.*

He prayeth best who loveth best
All things both great and small;
For the dear God who loveth us,
He made and loveth all.
—*Coleridge.*

No flocks that roam the valleys free
To slaughter I condemn;
Taught by the Power that pities me,
I learn to pity them.
—*Goldsmith.*

In the arrangement of the table, there is opportunity for the display of much taste and artistic skill. Fruits are an essential requisite of a hygienic meal, and nothing can be a more appropriate accompaniment than flowers as decoration for the table. A rose bowl filled with delicate ferns and roses, apple blossoms, sweet peas, or carnations make a very pretty centerpiece. A mound of violets arranged in moss; a jardinière filled with white lilacs, snowballs, golden rod, or asters; a clump of some low-growing plant, as pansies or forget-me-nots, arranged in a glass dish on a bed of feathery asparagus vine; a block of ice wreathed in ferns with an outer circle of water lilies, are some of many pleasing designs which may be employed for the adornment of the dinner table. Low dishes filled with cherries on the stem; a basket of oranges mingled with orange leaves; dishes of vari-colored grapes or plums resting amid the bright leaves of the foliage plant, or plates of rosy-cheeked peaches and golden Bartlett pears interspersed with light and dark foliage, give an equally pleasing effect. The amount of space occupied by decorations must depend upon the style of service employed. If no calculation need be made for placing the different dishes composing the dinner upon the table, a centerpiece of flowers, with two harmonizing dishes of fruit placed diagonally equidistant from the centerpiece and corners of the table, if a square one, affords a simple and easily arranged decoration for a table already laid with spotless linen, bright silver, glass, and china. A very pretty custom is to place fruit plates of hand-painted china or other

dainty ware on the table just beyond the dinner plate. These help to decorate the table, and when the dessert is to be served, require only to be drawn forward into place as the dinner plate and accompanying dishes are removed. A glass of fruit juice, an individual dish of cooked fruit or fresh berries, a tiny pitcher of almond cream or dairy cream, may be placed at each place along with the silver and napery. If desired, some special color may be made to predominate throughout. If there is a waitress, the breads may be served from the sideboard. Roasted almonds, ripe olives, bromose, and other similar accessories to the meal are best placed on the table in ornamental dishes. As to the menu, custom has established the usage of a soup for the first course. Any of the soups, recipes for which were given in recent numbers, are suitable, or a purée of asparagus, corn, or green peas may be used. A pretty accompaniment is a half dozen bread sticks tied in a bunch with baby ribbon, and laid on the napkin at each place. If, for hygienic reasons, it is preferred to dispense with soup, a plate of granose flakes, made crisp by placing for a few moments in the oven, in the center of which is piled a mound of fresh berries or sliced peaches, to be eaten with or without a dressing of almond cream, makes an excellent beginning for the meal.

A fish course, which is generally understood to be something easy of digestion, customarily follows the soup. With the same purpose as regards digestibility, we may use either browned rice with tomato sauce, macaroni with kornlet, poached eggs in tomato cases, or some of the grain preparations, as crystal wheat, grānut, or granola, with a cream, nut cream, or fruit dressing.

The *pièce de résistance* to follow this course may be a vegetable, nut, or legume roast, a dish of cooked peanuts, savory peas, or marbled beans. It should be an article containing a high percentage of nitrogenous food elements, since this is the predominating element in the flesh foods for which this course is substituted. It may have as an accompaniment either vegetables or some dish prepared of grains according to choice. Preceding the dessert a simple fruit salad may be served.

It goes without saying that breads in variety should form a part of the menu. Granose biscuit, wafers, crisps, puffs, and sandwiches, fruit or nut, are among the desirable kinds.

Fruits are the simplest dessert. If something more elaborate is desired, fruit tarts, a nut cake, granose fruit dessert, or individual berry shortcakes are novel and pretty.

Marbled Beans.—Cook equal quantities of white navy and black beans until tender and the moisture has become mostly evaporated. Rub each separately through a colander, and season with salt and half a cup of nut cream to the pint of bean pulp. Arrange in any preferred way, so as to give a marbled appearance, in a slightly oiled, circular baking dish, smooth the top with a knife, and bake until nicely browned on top, and dry and mealy throughout. Invert the baking dish over a plate, and the beans should come out a perfect loaf. Garnish with walnuts and slices of lemon.

Individual Berry Shortcake.—Prepare a simple sponge cake by any preferred recipe, and bake in thin layers. When done, cut into fancy shapes, put a layer of whole or chopped berries, with or without sugar, between two cuttings of the sponge cake, and serve on individual plates with or without a dressing of almond cream.

TASTY DISHES PREPARED FROM BATTLE CREEK SANITARIUM HEALTH FOODS AND SANITAS NUT FOODS.

(For illustrations, see colored plates.)

BY EVORA BUCKNUM.

IN reply to the many inquiries for ways of using prepared foods, and to supply something in place of flesh foods, which many who make no pretensions to vegetarianism think it best to drop from their dietary during the summer months, we present the following dishes, which, we trust, will also serve as suggestions for the preparation of many more: —

Protose Timbale with Spinach Soufflé.—

1½ cups whole-wheat breadcrumbs.
1 cup water.
½ a pound can of protose.
½ cup sifted nut meal.
¼ teaspoonful powdered bay leaf.
½ teaspoonful powdered sage.
⅝ teaspoonful salt.
2 small eggs.

(The nut meal may be omitted, and two cups of crumbs used, with two large eggs.)

The breadcrumbs are those of what we call a stale loaf, not very dry. Use the crust as well as the center of the loaf. Soak the crumbs in the water until soft, then heat over a moderate fire, stirring until smooth and creamy, and dry enough to leave the sides of the pan. Then remove from the fire and add the finely chopped protose, the bay leaf, sage, salt, the yolks of eggs, and the nut meal. Beat until well mixed, and if convenient, rub through a fine colander. Then add the whites of the eggs, beaten a little. Press into the mold well-oiled, set into a steamer, and steam just one and one-half hours.

After taking it from the steamer, let it stand a moment, then invert upon the center of the platter.

The timbale may be made in a round mold, and served on a chop tray.

The nut meal is sifted by rubbing through a wire strainer, with a spoon. A pound bottle, sifted, makes about five cups.

The Molds and Daisies. — The molds described in the May GOOD HEALTH, in "Soups and Soup Garnishes," are just the thing for these individual soufflés. First, oil them well with cold oil, and keep them standing in a cool place.

Prepare the daisies by cutting a small round piece from a slice of the yolk of a hard-boiled egg and six diamond-shaped pieces from the white, for each, and arrange like daisies, in the bottom of the mold, the oil holding them in position.

Spinach Soufflé. — One peck of spinach and two eggs. Wash the spinach in several waters, using a large quantity each time, rinsing the spinach up and down, lifting it out of the water rather than draining the water off, as the sand settles to the bottom. Then put it to cooking in boiling water, slightly salted (the salt preserves the bright green color).

Spinach cooked in its own juice is very nice if it is in just the right condition; but if not, it is bitter and acrid, so I have come to the conclusion that it is safer to cook it in plenty of water and drain it. Cook only until tender, from fifteen to forty-five minutes, according to the age of the spinach. When done, drain, pressing it well, and rub through a fine colander.

When well dried over a moderate fire, let it cool a little, and then beat in the yolks of the eggs; lastly, chop in the whites, beaten to a light froth. Press into the molds, taking care not to displace the daisies. Fill the molds about three fourths full. Set in a pan of water a little below the boiling point, and put all into a

Dainty Dishes

PREPARED FROM

Battle Creek Sanitarium
and Sanitas Health Foods

Malt Honey and Toasted Whole Wheat Wafers.

Lemon Pie with Granola Crust

Nut Butter with Whole Wheat Zwieback

Granut with Almond Cream.

Nut Bromose and Sanitarium Sticks

Granose Flakes with Poached Egg

For Circulars

describing these ready-cooked foods which may be prepared in hundreds of delicious and attractive ways, address the

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Battle Creek, Michigan

Granose Biscuit Strawberry Shortcakes

Protose Timbale with Spinach Soufflé.

Sliced Protose with Jelly.

Broiled Nuttolene with Peas.

moderate oven. Cover for a time, then remove the cover, and finish the baking without it. The time of baking will vary with the heat of the oven. A slow baking is desirable, as, when baked rapidly, the soufflés will puff up quickly, and fall correspondingly quick; whereas, if baked slowly, they retain their lightness. Thirty or thirty-five minutes is better for them than fifteen or twenty. When they puff up a little rounding and feel firm to the touch, they are sufficiently baked. If they remain in the oven too long, they will fall. When done, set the molds out of the hot water, and let them stand a moment, to settle, then invert them upon round pieces of zwieback, previously prepared, and place them around the protose, on the platter. The peck of spinach will make seven soufflés of this size. If desired, two teaspoonfuls of nut oil may be added to the spinach before drying, or one fourth of a cup of the Nut French Soup or Nut Bouillon (MAY GOOD HEALTH) which has been boiled down until quite rich.

The following sauce combines well with both the timbale and the soufflé:—

2 tablespoonfuls nuttol
3 " No. 1 (cream color) browned flour or 2 tablespoonfuls white flour
2 cups water
yolks of 2 eggs
1¼ teaspoonfuls salt

Let the nuttol become hot, but not brown, in the frying pan; add the flour, and stir until smooth; then add the boiling water, a little at a time, and stir smooth. When well cooked, dip a few spoonfuls of the hot liquid over the yolks of the eggs, stirring, then turn the whole into the pan, and heat all together just long enough to set the egg, but not to cause it to separate. Add the salt, and pour just enough on to the platter to cover the bottom, if desired, and serve the remainder separately.

Broiled Nuttolene with Peas.— Cut nuttolene into slices of halves or quarters, as desired, after the method described for cutting protose, in Protose with Jelly. Broil it in a wire broiler over the coals, under a gas blaze, or on a griddle which has been heated slowly to a moderate heat without oiling. Place fresh lettuce leaves on one side of an individual platter. (This is especially for a café service. At home the nuttolene may be served on a large platter, or on the chop tray, with the peas in the center.) Lay the broiled nuttolene in the center, and put two or three spoonfuls of stewed green peas on the lettuce, around the nuttolene.

Billy, our old English gardener, used to talk of "spring chicken and asparagus," and "spring lamb and green peas," two favorite combinations in England. But when we use nuttolene with our green peas, the innocent little lamb can go on enjoying life, frisking about at his mother's side.

Sliced Protose with Jelly.— For the arrangement in the design, melt the currant or any good firm jelly the day before it is to be served, and put it into the mold. Set the contents of a pound can of protose upright, and with a sharp, thin-bladed knife, cut carefully down, dividing it into halves. Lay the halves the flat side down, and cut them into five even slices, then cut each slice in two. Lay these quarters, overlapping one another, around the jelly, on the tray, and garnish with small sprigs of parsley, as in the illustration.

Poached Eggs on Granose Flakes.— Heat the flakes in the oven for a few moments, but do not brown. Arrange a few of them (too many make a dry, tasteless dish) on an individual platter, and carefully slide on to them two eggs, nicely poached. Sprinkle the eggs with salt. Garnish with parsley, and serve at once.

One lady said, "I shall never want any more eggs on toast after eating them on granose flakes."

For an invalid, the flakes may be put on to a small round dish with one egg only, and for the family, the flakes and eggs (either poached, curdled, or soft boiled) may be served separately, preserving, more perfectly, the crispness of the flakes.

Zwieback and Nut Butter.— This is an individual serving of "bread and butter" (Sanitarium zwieback of whole-wheat bread). As nut butter is usually served, it is not as attractive in appearance as the dainty little pats and molds in which dairy butter used to come to us. But I am sure there can be nothing prettier than the nut butter roses, like the one in the illustration, made with a pastry tube.

To prepare the butter, put half the quantity desired into an earthen bowl, add to it a very little water, and rub it in thoroughly. Continue adding water, scraping out the spoon occasionally, of course, until the butter is just smooth, but not soft. Do not add salt.

Wring the pastry bag out of cold water, and use the tube with a star-shaped opening. Press the butter on to the butter chips. A very little practice will enable one to make perfect roses.

The butter ought not to be prepared long before serving, and should be set in an ice box or be covered while it stands.

Nuttolene is also excellent with zwieback, as butter or cheese, whichever you prefer to call it.

Shortcake of Granose Biscuit. — Heat the biscuit in a warm oven until crisp. Split them carefully, and toast them on the inside, over the coals, and when just ready to be served, lay one half of each on the dessert tray, cover with the fruit, and place the other half on top. If the shortcake stands at all after being prepared, the biscuit lose their crispness. The flakes are even more desirable with fruit than the biscuit. They need to be prepared on individual plates.

Some fruits, as whortleberries and plums, are better to be stewed for a few minutes.

I have had people tell me that they had used granose all through the summer, with every fruit that came, from strawberries to late fall peaches, and it was good with them all.

Lemon Pie with Granola Crust. — For a large pie, take three fourths of a cup of granola, mix a little salt with it, and pour over it quickly a cream made by rubbing two teaspoonfuls of peanut or almond butter smooth with one fourth of a cup of water (or one fourth to one third of a cup of rich dairy milk or thin cream may be used), just enough to moisten it slightly.

If too moist, the crust will be soggy. Turn immediately on to the pie tin, and spread and press evenly with a spoon, over the bottom and sides of the tin, dipping the spoon occasionally into cold water. A teaspoon is best for the sides, and holding the finger above the edge, as you are pressing with the spoon, makes the edge firmer.

Do not let the crust come over the edge of the tin. Bake in a quick oven, then have ready the —

Lemon Filling—

4 tablespoonfuls lemon juice
1½ cups granulated sugar
1⅓ cups water
6 tablespoonfuls white flour
yolks of 3 eggs
¼ teaspoonful salt

Flavor the sugar by rubbing it firmly over lightly scored lemons (June GOOD HEALTH, "June Specialties"). Blend the flour with part of the water. Heat the sugar, lemon juice, and the remainder of the water to boiling, and stir in slowly the blended flour. Let it all boil up well. Add to the slightly beaten yolks,

a spoonful at a time, three or four spoonfuls of the hot mixture, stirring. Pour the yolk mixture into the other, and let it heat just enough to set the egg. Stir in the salt, and pour all into the baked crust. Spread the filling around the edges so as to touch the top of the crust, as all that is not held in place by the filling will crumble off when it is served.

Let the pie stand where the top will keep warm, to help cook the meringue.

Beat the whites of the eggs, with a little salt, to a moderately stiff froth. Add one tablespoonful of lemon juice, and beat stiff. Chop and beat in three or four tablespoonfuls of powdered or confectioner's sugar. Spread evenly over the top of the pie, and brown the meringue delicately, with a salamander, a shovelful of hot coals, or on the top grate of the oven.

In serving, the pie should be cut into pieces not larger than eighths, and should be put on to the individual plates before sending to the table, as it requires careful handling in removing to the plates.

When you try this lemon pie, you may be led to exclaim, as did a gentleman who had traveled and was accustomed to rich living, "That is the finest thing I ever tasted." And it was not only the filling, but the delicacy of the granola crust, that he enjoyed.

Malt Honey and Whole-Wheat Wafers. — The little jar in the picture contains meltose, or malt honey. Malt honey contains no cane sugar, glucose, or any other artificial sugar. It is a natural sweet, produced by the diastatic digestion of the starch of cereals; consequently, when taken into the stomach, it is all ready for absorption, the same as the sugar of fruits.

It is delightful eaten with whole-wheat wafers, granose flakes or biscuits, or crystal wheat porridge, and makes a perfect combination with nuts, each being the complement of the other.

For a pudding sauce it is excellent, and it may be used in cooking, in place of sugar or molasses.

Bromose with Whole-Wheat Sticks. — The pile of blocks on the small tray is our famous bromose, the complete food, a pound of which equals in nutritive value, a pound and a half of bread, a pound of meat, and two thirds of a pound of butter, giving us bread and butter and meat all in one dish.

With a good supply of bromose, combined with the fruits of the season, the tourist can be independent of hotels and restaurants, with their pasty porridges, grease-impregnated vegetables, and roasted portions of the bodies of dead animals.

A certain high-school professor took with him, in his trunk, a few summers ago, nearly a case of plain graham crackers and over twenty pounds of bromose for a month's stay in Yellowstone Park. He had been very ill, even at death's door, before he went, and the change wrought in the six weeks on a diet of simply graham crackers, bromose, and fruit, was marvelous.

Grānut and Almond Cream. — Grānut is one of the things which will reconcile us to parting with our time (but no other way) honored "porridge," that great promoter of the famous Scotch "water brash," and of American amylaceous dyspepsia.

In grānut, by a process of predigestion, the starch has been converted into dextrin and maltose, thus being easy of digestion.

It is in itself a perfect food, and when freely used, produces a normal action of all the digestive organs.

Its delicate sweetness comes from the meltose, or digested starch. It contains no cane sugar or glucose.

When it is served with almond cream, as in the illustration, we have a royal dish.

THE AMERICAN PET.

BY J. H. KELLOGG, M. D.

THE American horse is a beautiful creature; the American buffalo, before his extermination, was a magnificent and noble beast; according to many reports, the American man, when inhabiting the forests of this great country, was a glorious specimen of the animal man until he became degenerated by being compelled to subsist largely upon government trichinæ- and tapeworm-infected pork. The modern American man, as he appears on the great prairies of the West, tall, broad-shouldered, deep-chested, browned by the sun and wind, strong of limb, and generous of heart, is certainly a fine specimen; and many splendid specimens of fine animals might be mentioned, but none of these have ever sufficiently attracted the attention of the general American public to be able to rise to the distinction of a national pet. The creature which enjoys this honor is one of the most insignificant, the least beautiful, and most repulsive of the products of American soil — the American hog.

An anonymous writer, in a recent number of a sanitary journal, wields his cudgel in a very vigorous fashion in defense of the scavenger beast, which, he asserts, has been maligned and abused. The hog is represented as naturally a clean and tidy animal, in its native haunts a vegetable feeder, and a scavenger and subject to disease only because of the unwholesome conditions to which he is exposed in his associations with man.

The article referred to is embellished with a portrait of this beautiful animal which is so true to life we here reproduce it.

The pig assuredly can thrive on a vegetable diet, and seems to be naturally a vegetable feeder; but that the animal takes readily to a flesh diet, and consumes with gusto carrion of all sorts, is well enough known to all keepers of pigs. Some years ago the writer received a letter from the health officer of Erie, Pa., telling of an incident which came under his observation. Two pigs which had died, presumably of trichinosis, were eaten overnight by the other members of the herd, which happened to be stopping near the city, en route to market. A citizen purchased a young hog from the herd; fattened it in his own pen, later killed it, and several members of his family were made very sick; the trichinæ were thus communicated from one hog to another hog, and from the latter to a whole family of human beings.

Instances have frequently been reported in the newspapers in which children have been run down and eaten by hogs. We quote as follows from a recent newspaper in illustration of the natural disposition of the hog:—

"With the flesh completely torn from his face and neck, the body of Henry Martin, a Prairieville farmer, was found in a field on his farm yesterday afternoon. Martin had been absent from the house only a few hours, and it is the supposition that he died of heart disease. Hogs are responsible for the mutilation of his body. He was sixty-five years of age." In another recently reported case a child which fell into a pig pen was eaten up, only its bones being found a few hours later.

After reading the foregoing, will our sanitary friend still insist that the hog is naturally a vegetarian like the sheep, the camel, or the rabbit? Who ever heard of a rabbit, a sheep, or a cow eating a human being?

While dictating this article, a gentleman reported to the writer a case which came under his observation a day or two ago. An acquaintance asked his advice as to what to do with his hogs. He had noticed that his chickens were disappearing one by one, and to his astonishment made the discovery that they were being killed and eaten by his hogs. A few days ago he discovered a hog eating a chicken which had died of itself more than a week before. "This discovery," the gentleman declared, "spoiled my appetite for pork." Being a conscientious man, he does not feel willing to sell to his neighbors what he would not wish to eat himself, so he is in a quandary what to do. Our critic will perhaps advise him. Even he would not recommend such animals to be eaten, for we are able to quote from the article referred to:—

"But by restriction and neglect, particularly in the precincts of dense populations, where swine are cultivated for quick marketing, and sometimes in country places, collectively, they are used as domestic scavengers; made to live upon all sorts of food refuse as a means of disposing of it; are stinted in water supply; without any attention to the bedding or the floor of their pens. . . . That the meat of hogs raised under such conditions is not wholesome might, after what has been said already, go without saying." To this we heartily say, Amen.

THE AMERICAN PET.

The suggestion is added that "good cooking effectually destroys all danger from infection." Even "good cooking" can not change the loathsome fact that the most toothsome spareribs may have dead hens, putrescent calves, and even other long-neglected-to-be-buried dead pigs in its pedigree.

A BEAUTIFUL TRIO: PIG, TAPEWORM, TRICHINÆ.

Incidentally, we would call attention to the fact that the portrait of the pig is incomplete. Along with the picture of the hog should always appear the portraits of his most faithful and intimate associates, the trichina and the tapeworm. "Pig," biologically, if not grammatically, may be considered, if not plural in number, at least a collective noun, for it represents more than one. "A pig," for example, often means a mixed multitude of *pig, young tapeworms,*

and embryo trichinæ exceeding the total population of Greater New York. The originator of the phrase, "*Multum in parvo,*" may have had in mind the American pet, *sus scrofa,* when he coined this classic phrase.

Our critic complains that we have misrepresented the hog in describing an issue found upon the inner side of the limb near the foot. The article referred to was written more than a quarter of a century ago; and if the writer had had the opportunity to review it before it was republished, it would have been subjected to some criticism in the light of modern and more exact knowledge. But being in a foreign country at the time, this opportunity was not afforded. The statement was made upon information furnished by numerous raisers of hogs. Since the statement has been denied so strongly by our good friend, we have taken the pains to make careful inquiry of a veterinary surgeon, and find the facts to be that the issue is to be found, as stated, in a great number of hogs. It is so common a result of the diseased conditions in which most hogs live that it is by many considered a natural condition. When once established, the issue must be kept open, otherwise the animal becomes sick. A hog raised in a reeking sty, under the conditions described by the writer, is very certain to be found in the condition pictured. In a future number of this journal we shall publish an exact photo-reproduction of such a leg, so that our friend may have the privilege of seeing that it is not a "colt's leg," as suggested,— nor any other leg than that of his pet pig.

We entirely agree with our critic that the way in which the hog is treated is cruelty to animals of the grossest sort, but a still greater cruelty is to slay and swallow the beast; for any pig possessed of ordinary swinish intelligence would much prefer to live in a pen, ever so dirty, than to be buried in the stomach of the most aristocratic biped.

Our critical friend seems to agree with the venerable conscript fathers of the Roman Senate, who replied in response to the emperor's question, "Is it possible to live without pork?" "O, sir, it is better to die than to live without salt pork." To our critic it appears the world would be sad and dreary without roast pig. He quotes a trite saying, "Without pork there could be no bacon, . . . without bacon there would be no ham, and without ham there would be no test of accomplished cookery"!!! Evidently in the mind of our pork-loving friend, the art of cookery revolves about pork. Fried bacon, ham sandwiches, stewed tripe, pickled pigs' feet, sausage, spareribs, pork chops, and bacon fat may be a sufficient dietary for a connoisseur of pork; but the writer would prefer a bill of fare covering a wider range, though with the exclusion of dead carcasses of all sorts. Do not the luscious fruits, the nourishing grains, the sweet and toothsome nuts, and other wholesome products of the vegetable kingdom afford ample opportunity to test the dexterity and skill of the most highly accomplished culinary expert? In the degenerate days of Rome, as in modern New York, it seems that popular cookery consisted chiefly in the carving and serving of dead beasts, for Plutarch, the author of "Plutarch's Lives," complains about "those layers out of dead corpses, the butchers and cooks;" but modern scientific cookery has certainly advanced beyond the carnivorous era. Let us not lapse into savagery.

Our friend endeavors to convince us of the legitimacy of pork as an article of the human dietary by a scriptural quotation: "Every moving thing that liveth shall be meat for you; even as the green herb have I given you all things." Gen. 9 : 3. It is evident that Noah had permission to

eat everything if he chose to, grass, even, if he liked it; and certainly a man who desires to eat everything, will find in pig a veritable menagerie of comestibles, good, bad, and indifferent, and of every sort, for the pig has a decidedly miscellaneous appetite. A few days ago a farmer's wife said to him, "I have been told that hogs sometimes eat snakes. If I thought it were true, I should never taste pork again." "Ah," said the farmer, "certainly it is true. I saw one of our hogs catch and eat a blue racer just the other day." The assortment of things which one swallows along with his pork chops is quite graphically represented in a cartoon which will be found on the last page of this number.

One thing interests us very much. Our critic recommends the pig species because, as he says, "They are almost wholly vegetable feeders, rarely or never feeding upon unsound food of any kind, only when forced by starvation." Would that men were as wise! The pig will not eat dead pigs, dead calves, dead hens, or any other dead things, according to our friend's assertion, unless driven to it by starvation under conditions which sometimes compel human beings to resort to cannibalism. Let us learn a lesson from the pig. If a pig will not eat a man unless driven to it by dire necessity, if the pig prefers sweet clover, grass, and corn to dead beasts of any sort, and a pig thus fed is a better pig, why should man turn away from his natural and wholesome bill of fare, for he is by nature also a vegetable feeder, to feast upon the carcasses of dead and decomposing beasts? If the flesh of a hog fed upon meat becomes unsound and unhealthy, as our critic suggests, what about the flesh of a man who subsists upon the same sort of diet? Let us, my friend, give a moment's thought to these considerations.

Is it not possible that we are becoming a little bit too partial to the pig? In the issue of the sanitary journal in which the criticism referred to appears, fully a dozen pages are devoted to extolling the virtues of pig and pig fat. The first article in the journal is entitled "Bacon and Butter." Likewise on the last page of the cover, in the most conspicuous position, we find a striking advertisement of pork, —"Famous Hams and Boneless Bacon," —a suggestive coincidence. Has it come to this, that the beginning and the end of sanitary knowledge is *pig?*

In his essay on "Roast Pig" (to which our kind friend refers), Charles Lamb facetiously congratulates the pig that "he hath a fair sepulcher in the grateful stomach of the judicious epicure, and *for such a tomb might be content to die.*" Granting that an ambitious pig might aspire to be buried in the stomach of a sanitarian, may we not very properly raise the question whether the said sanitarian might not wisely seek some more elevated end than to be *the sepulcher of a pig?*

When the body is made the tomb of a dead beast, it naturally comes to partake more or less of the nature of the animal. Oliver Wendell Holmes observed that men who had eaten largely of pork became swinish in their appearance, and that the hair and beard even became bristly.

CONVENTIONAL DRESS.

BY ABBIE M. WINEGAR, M. D.

IT is not correct to speak of fashionable dress as necessarily unhealthful. A fashionable dress may be perfectly healthful; and a dress which is not fashionable may be at the same time very unhealthful.

The Venus de Milo is as nearly a perfect model of a woman's form as can be

found. The proportions of the body, as represented by this figure, are natural and normal. The waist measure of the Venus de Milo is 47.6 per cent of the height.

1. Venus de Milo.

2. A Woman of Fashion.

If we reckon the waist measure upon that basis, we find that in very few cases do the waists of women come up to the standard. The average height of woman is five feet four inches, or sixty-four inches, hence the average waist measure should be about thirty inches. Of course the size, height, and other dimensions vary somewhat in different individuals, but the proportions should not differ greatly. But to-day we find women of the ordinary height with waists only eighteen inches in circumference, while the average is not more than twenty-three or twenty-four inches. About the age of thirteen or fourteen the waist of most girls ceases to grow, while the rest of the body continues to develop until they are twenty or twenty-one years old, or even older. Now, why should one part of the body become stationary at the age of thirteen or fourteen years, while the other parts continue to grow for from eight to twelve years longer? This is an abnormal condition, but there is a reason for it. When one part of the body is confined so that it ceases to develop, it follows that the muscles of that part can not be properly matured. If the muscles of the arm are tied up, or if the arm itself is kept in a sling for two or three weeks or a month, the muscles begin to atrophy or grow smaller and smaller from lack of use. In the same way, when the waist portion of the body is confined, it ceases to grow.

The evil results, however, are not exhibited alone in the lack of development of one part of the body. The entire system is injuriously affected.

A compression of any part of the lungs interferes with respiration; and respiration is so much interfered with by the present mode of dress that abnormal breathing is now almost universally considered normal. It is really astonishing to think that we have dressed in an improper way so long, and by this means have so changed our mode of respiration that a condition which is altogether abnormal has come to be considered normal, and is so classed in works on physiology to-day. If you will look through some of our physiologies, you will find it stated that the normal mode of respiration for woman is costal respiration, while that given for man is abdominal respiration. Now the fact is, the whole of the lungs should be used by women as well as men. The lungs extend to the lower border of the ribs, and fill almost the entire chest cavity; being large, and filling such a

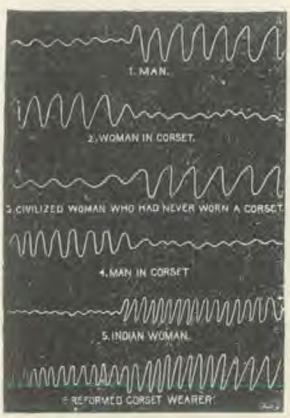

Fig. 3.

large space, if there is any interference with this portion of the body, the lungs are not properly exercised, we do not take in a sufficient amount of air and oxygen, we do not receive the necessary amount of the life-giving power of the body, and the result is a general poisoning of the whole system. That is the reason why so many people go about in a listless, lifeless way. It is because there is a lack of oxygen in the system, due, oftentimes, to the compression of the lower portion of the lungs. So common has this condition become that many people think the lungs occupy only the upper portion of the chest, and many are very much surprised when they see how large a space the lungs really require—that they fill almost the entire chest cavity.

The lower illustration on page 438 shows tracings representing respiration. In figure 3, tracing 3 represents the normal respiration of a woman. You will observe that the respiration of the upper part of the lungs, or the costal respiration, is rather light, while the respiration of the lower part, at the so-called waist line, is much heavier. I ought not to say "waist line," because in the normal figure there is no such thing as a waist line.

FIG. 5.

Tracing 2 of the same figure shows the respiration of a woman in a corset,—a woman with the waist portion of the chest so constricted that there is interference with the respiration, the air entering only the upper half of the lungs; hence the costal respiration is very much exaggerated, while the abdominal respiration is almost entirely absent. Observation of the respiration of the two sexes shows that in the breathing of woman there is a constant raising of the muscles, particularly if there is very much compression at the waist. In the effort to breathe, the muscles of the neck and of the upper part of the chest are strained and contracted in trying to enlarge the chest capacity. In the breathing of man there is not this strained effort. It is true that there are errors in the dress of man as well as of woman, but they do not ordinarily interfere with his breathing apparatus.

FIG. 4.

But men as well as women ought to recognize the fact that the present mode of dress is actually a serious and destructive evil. Women often make the remark that they would like to change their unhealthful mode of dress, but they know their husbands would not allow it. If these women could persuade their hus-

bands to wear their clothing for just one day, they would not be likely to hear any more objections to their adoption of a rational dress.

The breathing of a civilized woman who has never worn a corset is abdominal, as shown in tracing 3. This tracing compares exactly with that of a man,— the costal respiration is light, while the abdominal respiration is heavy. Tracing 4 shows the respiration of a man in a corset. The breathing is just like that of a woman in a corset; the costal respiration is heavy, because he had to make an extra effort to breathe with the upper portion of the lungs.

In tracing 5 of figure 3, we have a representation of the respiration of an Indian woman. Indian women do not interfere with or compress the waist. The costal respiration of the Indian woman is light, just like the costal respiration of the man, while the abdominal respiration is heavy, like the abdominal respiration of the man.

A tracing of the respiration of a reformed corset wearer, "before and after," is shown in 6. Here the costal respiration is greatly exaggerated, the tracing having been taken after the reformation; the muscles of the abdominal portion of the body had been exercised, and the abdominal respiration was increased until it became much greater than the costal had been, because, if there is no obstruction, it is easier to expand the abdomen than the chest, there being no bony framework to prevent.

Figure 4 shows a figure standing in an incorrect position; it is an incorrect figure, and it is just such a figure as one almost invariably has when the abdominal part of the body is weakened. Weakness of the waist portion of the body causes a dropping down of the whole. It can not be otherwise, because if there is any interference with the waist portion, it causes a weakness of the muscles of the abdominal wall; there is a sensation of weight and pressure; one feels as if she wanted to drop down in order to relieve the bearing-down feeling. Notice also that the back of this figure is straight; that is abnormal; it is one of the deformities which arise from the use of the conventional dress. The round shoulders, the protruding abdomen, and the flat chest are others. Heavy skirts and tight bands lead to incorrect attitudes, and pave the way for all sorts of evils.

There are three kinds of posterior curvature of the spine caused by conventional dress, — curvature of the upper, the middle, and the lower portion of the spine. There are also lateral curvatures, with which a bad mode of dressing has something to do, but not so much as with posterior curvatures. We have curvature of the spine, round shoulders, flat back, and a flat chest, also prolapse of all the abdominal viscera, which is probably one of the most serious of these evils, all traced to one cause, — the conventional dress. I may say also this, — that an interference with the function of one of the abdominal organs is also an interference with the function of every other organ in the abdominal cavity; and not only that, but the whole body is affected by the same cause, for when respiration is interfered with, the circulation is also interfered with, and the action of all the organs is retarded, so that there is an interference with every function of the body. If one organ is prolapsed, that condition destroys the relation of that organ to every other organ; and so soon as there is a disturbance of the relation of the organs, there is disease; this is the inevitable result. Figure 5 represents the outline of a perfect figure.

THE BATTLE CREEK SANITARIUM AND ITS BRANCHES.

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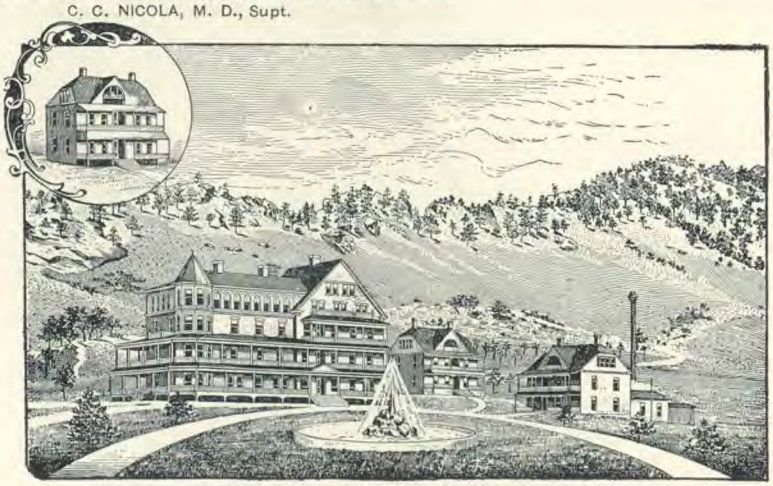

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Apia, Samoa.
F. E. BRAUCHT, M. D., Supt.

THE CLAREMONT SANITARIUM,
Cape Town, So. Africa.
R. S. ANTHONY, M. D., Supt.

NEW SOUTH WALES SANITARIUM,
Summer Hill, N. S. W., Australia.
EDGAR CARO, M. D., Supt.

INSTITUT SANITAIRE, Basle, Switzerland.
A. P DE FOREST, M. D., Supt.

EDITORIAL.

THE BATTLE CREEK IDEA.

A FEW weeks ago the writer had the pleasure of addressing a large audience of the intelligent and cultivated citizens of a Western city. No subject had been announced. It was stated simply that Dr. Kellogg would speak on some health topic. A well-known university professor in a few kind introductory remarks supplied a subject. He said in substance, "The speaker of the evening is to tell you about 'The Battle Creek Idea.'"

Thirty-four years ago the present summer, an enterprise was set on foot in Battle Creek, the influence of which has extended over the whole civilized world. This movement consisted in the organization of an institution then known as the Health Institute, the purpose of which was to represent to the world the art and science of health getting, and health preservation on the highest level made possible by the present state of human knowledge. The promoters of the enterprise were a few persons who had had a vision of better things, and who recognized the need of active missionary enterprise in behalf of the various reforms pertaining to the habits of life, especially diet, rest, and the substitution of a rational method of healing for the prevalent, almost universal confidence in and resort to nostrums, magnetic healing, and quackery under various guises. The writer, then a boy, sat under a small tree on the lawn at the opening exercises.

From the small beginning, made in a little dwelling, established in 1866, the work has grown until it has assumed world-wide proportions. There are at the present time institutions in more than a dozen different countries, numbering in all, with their various branches, more than forty establishments, in which the rational principles of diet, dress, and the treatment of the sick taught and practiced at the Battle Creek Sanitarium are faithfully represented by physicians and nurses who have been trained at Battle Creek, and who have gone out from this institution as pioneers of one of the most needed reformatory movements which has appeared in modern times.

A fundamental principle of this work is that sickness is not an infliction of Providence nor a possession by an evil spirit, but simply the consequence of the operation of the great bibliological law, "Whatsoever a man soweth, that shall he also reap;" in other words, disease is the result of wrong habits of life.

Another foundation principle of the Battle Creek idea is that there is no healing power, so far as an individual is concerned, outside of himself; that the body is its own physician, or rather, that the divine living energy which dwells in every human being is the healer as well as creator of the body; that the office of the physician or nurse is simply to co-operate with this healing power by the use of those agencies which scientific experiment and practical experience have shown to be most potent and permanently efficacious.

A simple non-flesh dietary, the avoidance of tea, coffee, and cocoa, total abstinence from alcoholic beverages and tobacco, the discarding of mustard, pepper, and other condiments, and close adherence to a natural dietary of fruits, grains, and nuts,—these are a few of the Battle Creek ideas respecting diet.

Radical reforms in cookery are included in the Battle Creek idea. The old régime of fried foods, rich pastry, highly spiced and sweetened comestibles, is altogether condemned, and a new order of toothsome, dainty, and easily digestible dishes presented in place of the cookery of olden times. Cheese and animal fats are wholly tabooed, and even milk is looked upon with some degree of suspicion because of its liability to contamination.

Dress reform, based on rational and scientific principles, and free from fads, whimsicalities, and ultra notions, is brought prominently to the front, and is promulgated by both precept and example.

Scientific physical culture is another feature of the Battle Creek system which receives no little attention, and the methods in use have been largely adopted in many famous university gymnasiums.

Battle Creek has come to be respected as a center for health ideas wherever the English language is spoken, and its principles are being disseminated in more than a dozen other tongues. Splendid institutions, some of which are shown on another page, are located at St. Helena, Cal.; Boulder, Colo.; So. Lancaster, Mass.; College View, Lincoln, Neb.; Portland, Ore.; Spokane, Wash.; Chicago, Ill.; Guadalajara, Mexico; Claremont, Cape Town, So. Africa; Sydney, New So. Wales, Australia; Christchurch, New Zealand; Skodsborg, Copenhagen, Denmark; Basle, Switzerland; Friedensau, Germany. A beginning has recently been made in England in a suburb of London, and there is a fine representation of the work in Calcutta, India; Honolulu, H. I.; Apia, Samoa; Oklahoma City; Toledo and Cleveland, Ohio, and a score or more of other places. Arrangements are being made to establish the work in the near future at Denver, Colorado Springs, and Pueblo, Colo.; in Omaha, Neb.; Atchison and Topeka, Kan.; St. Louis, Mo.

Pure food restaurants and health food cafés are being established in various places with flattering success. Splendid restaurants are now conducted in San Francisco and Los Angeles, Cal.; Butte, Mont.; Detroit, Mich.; Chicago, Ill.; Des Moines, Ia.; Portland, Ore.; and several other places. There are at present three restaurants in Chicago where thoroughly hygienic food can be obtained, the Workingmen's Home and the Good Health Hotel both furnishing an excellent bill of fare at prices which make these foods available to the poorest man. Besides these there is the vegetarian restaurant, which is managed as a high-class establishment.

Schools of Health conducted by trained nurses, and lecture courses are being organized and held in various parts of the United States.

Battle Creek is also a center from which goes out a vast amount of literature helpful in various lines of sanitary reform. No fewer than eight periodicals owe their existence and prosperity to the Battle Creek idea. Among these are a French, a Spanish, a Danish, and a German health magazine. GOOD HEALTH, the *Pacific Health Journal*, the *Herald of Health*, of Australia, the *Journal of Health*, of South Africa, and *Life and Health*, of London, are other monthly periodicals which voice these principles in the English tongue. The salutary influence in promulgating principles of health of the thousands of tracts and pamphlets also published under the same auspices could not be estimated.

INFANT FEEDING.

"WHAT shall we feed our babies?" is becoming the burning question with American mothers. The expectation of life for the average American baby born at the present time is considerably less than for babies who were born a few years ago. The mortality among infants seems to be increasing. More than half of all the human beings born in the United States, according to the statistics recognized as authoritative, die before the seventh year, and a large proportion of these unquestionably die of tuberculosis in some form. Tuberculosis of the brain, intestinal tuberculosis, and tuberculosis of the skin are grave maladies, the frequency of which is increasing. Children suffer greatly also from hip-joint diseases tubercular in character. The mortality of children is without doubt in large part due to deficient feeding, to digressions in diet, and to the use of contaminated

foods. A large part of the so-called summer complaints or bowel disorders which occur during the heated season must be attributed to wrong feeding.

It is not the purpose of this article to go into the details of infant feeding in an exhaustive way, but to call attention to a few important and practical facts:—

Germs.—The young infant is born into the world with an alimentary canal entirely free from germs. If its stomach and intestines could be kept in this condition, it might probably pass through life practically free from digestive disorders and from other disorders which are the outcome of the fermentations and decompositions which take place in the alimentary canal. The smaller the number of germs contained in the food given the child, the better for its welfare. Milk contains multitudes of germs. Cream contains a larger proportion of germs than does milk. Cheese contains not only germs of various sorts, but molds. The stomach of the adult is often able to destroy these germs, but frequently the feeble stomach of the child fails to disinfect the food given to it, and as a result the germs grow, various irritating poisonous substances are developed, and great mischief follows. An aseptic dietary requires first, that the foods given the child be thoroughly sterilized by boiling; secondly, that both bottle and food be kept scrupulously clean. A bottle with a tube should never be employed. The child's mouth should be washed after feeding. The bottle should be scalded after each feeding, and the whole feeding apparatus should be kept immersed in a solution of soda (two heaping teaspoonfuls to the quart of water), which should be freshly prepared daily.

When to Feed and How Much.— Great care must be taken in the regularity of the feeding and the determination of the proper quantity for the child.

Age of Child.	1 W.	1 M.	2 M.	3 M.
Amount of each feeding, in ounces	1	1½-2	3	4
Number of feedings	10	8	6	6
Amount of food daily, in ounces.	10	12-16	18	24
Interval between feedings, in hours	2	2½	3	3

Age of Child.	4 M	6 M.	9 M.	12 M.
Amount of each feeding, in ounces	5	6	7½	9
Number of feedings	6	6	5	5
Amount of food daily, in ounces.	30	36	40	45
Interval between feedings, in hours	3	3	3½	3½

Artificial Food for Infants.— Thousands of children die annually as the result of attempts made by mothers and hired nurses to substitute artificial food for the natural sustenance of the child. The markets are flooded with infant foods of various sorts. It will be of practical interest to our readers to know something of these preparations. The following table shows the composition of a number of popular infant foods, according to the analysis made by Rach,—

	Water.	Sugar.	Dextrin.	Starch.	Fat.	Albuminoids.	Ash.	Solubility in water.
Malted milk	3.27	46.63	17.16	.....	6.78	22.26	3.90	Very soluble.
Nestlé's milk food.	4.51	37.47	4.84	33.22	5.37	13.00	1.59	Insoluble.
Carnrick's soluble	5.93	30.12	9.14	38.08	2.96	10.75	3.02	"
Lacto preparata.	5.80	63.38	.....	.....	12.35	14.51	3.((	"
Lactated food	7.80	28.66	10.33	35.17	1.82	13.48	2.77	"

A large share of the so-called infant foods are farinaceous preparations which are dextrinized by the application of heat by means of heat combined with diastase, and by one or the other of these processes with the subsequent addition of milk and water, which is evaporated. Of the first class, Imperial Granum, Ridge's Food, Shumaker's Food, Blair's Wheat Food, and Flour Ball are examples.

Imperial Granum consists of about three-fourths starch. Flour Ball, even when boiled for a long time, contains scarcely more soluble starch than ordinary wheat flour. Leeds reports malted milk as containing 5.57 per cent of starch, 16 per cent of dextrin, 50 per cent of sugar, nearly 17 per cent of albuminoids, with 3.30 per cent of fat, and nearly the same amount of salts.

The malt-digested cereals, or so-called "Liebig" foods, contain a large amount of

dextrin and no starch, with 10 per cent albuminoids. In the manufacture of these foods, bicarbonate of potash is used in the proportion of 1 per cent. This chemical substance is certainly a very undesirable addition to the food of infants. The ultimate effect must be to impair the digestive vigor of the stomach. Malted milk consists of a mixture of milk with wheat gruel which has been digested by malted barley; after the wheat flour is dextrinized, the whole is dried in a vacuum.

Nestlé's Food consists of zwieback mixed with fresh cow's milk dried and pulverized.

Carnrick's Food consists of a mixture of desiccated milk and dextrin in equal parts, with 10 per cent milk sugar.

Home-Made Infant Foods.— Any mother can easily prepare a food equal to most of the above by simply toasting ordinary bread in the oven until it is nicely browned throughout — not burned, but uniformly browned; grind this as fine as possible in a coffee mill, and mix with boiling water to a thick paste, which, after being thoroughly softened, may be diluted with sterilized cow's milk until it can be fed from a spoon or a feeding bottle.

Neither adults nor infants can digest raw starch, but by thorough dextrinization by exposure to a high temperature in an oven for a long time, the starch may be converted into achroödextrin, which is much more readily digestible, especially in a weak stomach, than farinaceous foods which have been cooked at a boiling temperature (212°) only. The addition of this dextrinized starch prevents the milk from forming hard curds in the stomach, a very common cause of indigestion in young children.

Granola, granose, and grānut, especially with the addition of a little milk, are excellent foods for children. A thin porridge made with either of these foods with the addition of a little milk constitutes an excellent food for a child who has attained the age of three or four months.

Malted nuts in the form of bromose, ambrosia, or malted nuts, has often demonstrated its value by saving the life of a child who has been given up to die of starvation through inability to obtain proper nourishment from other sources. The vegetable casein found in nuts does not form hard curds in the stomach, but is readily digested by contact with the digestive fluids in the stomach and intestines.

Fruits a Wholesome Food for Infants.— The question is often asked, "May young children use fruits?" There can be no question that the juices of most fruits are well adapted to the digestive organs of young children. Fruits contain chiefly sugar and dextrin, and in a condition ready for immediate absorption. They furnish just the sort of material needed for making the plump little body which is characteristic of infancy, and for padding the tissues with a thick layer of fat for protection against cold, especially in the winter months. The juices of fruits are highly valuable as a means of cleansing the stomach and the alimentary canal. Disease-producing germs can not grow in them to any extent. Fruit juices are remarkably efficient in cleansing the stomach and intestines, particularly ripe raw fruits, such as strawberries, peaches, and even the scraped pulp of apples and pears may be taken by most children at a very early age without injury. Cooked fruit, such as baked apples, prune purée, and other soft fruit pulps, may be used without injury, provided they do not contain a large quantity of cane sugar for sweetening, and are not administered with cow's milk. Milk and fruit do not agree in the feeble stomach. Fruit should be taken at regular times, not between meals. It is especially well combined with cereal foods, with which fruit juices may be used instead of water. Very acid fruit juices should be avoided. The juice of sweet grapes, sweet apples, and other sweet fruits may be used freely by infants as well as by adults.

TEA AND COFFEE DISORDERS.

THE observations of reliable medical men have within the last twenty-five years repeatedly shown without room for doubt that the habitual use of tea and coffee is one of the most prolific causes of common disorders which are generally attributed to other disease-producing influences. Dr. Bock, of Leipsic, long ago pointed out that the petulance and nervousness of the Chinese may be fairly attributed to their use of tea, but the average Chinaman uses much less tea than the average American, saying nothing about the still greater quantities of coffee consumed in the United States as well as other civilized countries. It is hence fair to attribute to the use of tea and coffee, in part at least, the great prevalence of nervousness in the United States and other countries peopled by English-speaking races. Nervous headaches, trembling, sleeplessness, confusion of thought, melancholia, and even such grave disorders as delirium tremens and insanity, have in scores of instances been traced directly to the use of tea.

That tea and coffee drinking are responsible for many cases of indigestion is clearly shown by the interesting experiments of Sir William Roberts, of England, some years ago. He demonstrated by laboratory experiments that tea and coffee prevent the action of the saliva upon starch, an element which constitutes about one half the solid constituents of bread and other cereal foods. The indigestion of starch, resulting in sour stomach, flatulence, and other symptoms of gastric disorders, is practically the most common of all gastric ailments. This fact certainly affords strong grounds for the condemnation of these common beverages.

Out of indigestion come a host of ailments which are the natural consequences of lowered vital resistance resulting from the impoverishment of the blood and the flooding of the body with poisonous substances produced by the processes of fermentation and putrefaction set up by the various species of germs in stomachs that have been weakened by the use of tea and coffee and by other dietetic errors. Among these may be mentioned Bright's disease of the kidneys; cirrhosis of the liver; the so-called "gin liver," which has been found by recent observations to be more often due to indigestion than to the drinking of gin (the writer has found many cases of this sort); consumption, or tuberculosis of the lungs, joints, and other parts of the body, and tuberculosis of the glands, commonly termed "scrofula," and other forms of tuberculous disease; catarrh of the bowels; premature senility through degeneration or hardening of the arteries; apoplexy from the same cause; rheumatism; diabetes, and other cachexias. Even cancer may be attributed to the lowered vital resistance resulting from the contamination of the body with decomposition products.

Viewed in the light of modern scientific discovery, the use of tea and coffee must be regarded as one of the most pernicious practices common among civilized nations.

TOBACCO HEART.

A FEW weeks ago the writer, while conversing with one of the trainers connected with the athletic club of one of our large Western cities, a stalwart young man, observing that the gentleman smoked, remarked that he thought smoking hardly consistent with the highest degree of physical development. Said the athlete, "You are certainly right. I am aware of this fact, and I do not believe in smoking. I gave up smoking three years ago, having noticed its injurious effects, and I have only recently returned to the habit. I am going to relinquish it." Wishing to obtain information from a practical observer respecting the influence of tobacco upon physical endurance, we asked, "What evidence have you that tobacco injures you?" The prompt reply was —

"Tobacco at once impairs the wind."

"Do you find that after smoking a single cigar your breathing capacity is diminished?"

"Certainly. After having smoked a cigar I can not run or engage in violent exercise without getting out of breath. I learned long ago that I must never smoke before engaging in a boxing or fencing bout or any other vigorous exercise."

"Have you noticed the same effect in others?"

"Oh yes, it is universally the case. I have always noticed that men who smoke before they go on the running track in the gymnasium are out of breath after they have made two or three laps, while the same men, if they abstain from smoking before exercising, have good wind."

Tobacco is recognized by all medical authorities as a heart sedative; that is, it is a poison which paralyzes the heart. The heart is the great central engine which drives all the machinery in the body. Any agent which weakens its force, even though the effect may not be immediately apparent, must be in the highest degree detrimental and dangerous to life and health. The fact that tobacco weakens a man's wind and lessens his endurance, affords the most positive proof that it must shorten his life, for the power to live long means simply the power to endure long the physical strains and emergencies to which the body must be continually subjected during life. The body breaks down only when its capital of vital resistance has been lowered to such a point that the system has no longer the ability to meet the demands made upon it. No man who cares to live long and well can afford to smoke or use tobacco in any form. The same may be said of alcohol, tea, coffee, and all other narcotics and stimulants, for these substances are poisons which serve no good purpose in the vital domain, and are evil, and only evil.

ANSWERS TO CORRESPONDENTS.

The No-Breakfast Plan.— A subscriber asks: "1. Are not the gastric juices ready to work at any time, provided the stomach has had sufficient rest? 2. Is it not better for a delicate person to eat breakfast before he goes to work, and omit supper, if three meals have been his habit?"

Ans.— 1 and 2. The no-breakfast plan is good for people who eat supper, as people who go to bed with supper in their stomachs are not prepared to digest their breakfasts; but by far the better plan is to take breakfast about eight, and dinner about three, and discard supper. It is certainly much better for a delicate person to take some food before engaging in work. The muscles are found, by actual experiment, to be much stronger a half hour after eating than before, so that a person has much more energy at his disposal the first half of the day if he takes breakfast than if he does not, provided, of course, his stomach is strong enough to digest breakfast, which it should be if he does not take supper.

Pain in the Anus.— L. E. H., Indiana: "1. I am troubled with slight aching in the anus, especially marked in the latter part of the night. After exertion, there is a feeling of heaviness in the lower part of the rectum; frequently slight protrusion of membrane, but no irritation. What is the difficulty and the cure? 2. Do you advise an operation for one of sixty-five?"

Ans.— 1. Probably hemorrhoids or collapse of the rectum. A short cold shallow sitz bath. Place water, at a temperature of 50° to 60°, in the tub, about two inches deep. Sit in the tub for fifteen to twenty minutes, twice daily.

2. An operation is doubtless necessary for a radical cure. The remedy suggested may render you sufficiently comfortable so that you may not need to run the slight risk of an operation.

Water-Drinking—Superfluous Hair—Peanuts — Sneezing.— Mrs. T. A. P., Kentucky: "1. How much water should one in ordinary health drink daily? 2. What will permanently remove superfluous hair? 3. How should peanuts be prepared before grinding in a mill? 4. What causes violent attacks of sneezing, lasting from one to three days?"

Ans.— 1. Two to three pints.

2. Electrolysis.

3. They may be boiled or steamed, then dried. They should not be roasted.

4. There is evidently a nasal irritation. Possibly a polypus may be present. Continued violent sneezing is one of the symptoms of hay fever.

Smallpox — Fruit — Broken Hip.— M. P. B., Kansas: "1. Please outline treatment for smallpox. 2. Should fruit be eaten alone or with bread? 3. Is rolled corn good for bronchitis? 4. What should be done for a broken hip? The person so afflicted has not walked for a year."

Ans.—1. In the case of smallpox a competent physician should be consulted. The cooling pack is best for lowering the temperature. The prolonged pack relieves cerebral congestion, sleeplessness, and delirium. The prolonged neutral bath aids elimination of the poisons, and lessens the risk of inflammation of the kidneys. No one should undertake the treatment of a case of smallpox without a competent medical adviser.

2. It may be eaten either way.

3. Yes and no. All good food is beneficial by aiding in building up the body and increasing its resistance to disease.

4. In a case of such long standing, fomentations followed by massage, the heating compress, the graduated compress, and electricity are the most serviceable means.

Foods.— F. E. B., Connecticut: "1. What foods are best for one who wishes to avoid starchy foods? 2. Does simply toasting or baking bread twice make good zwieback? 3. Will nuts and fruits alone sustain one in health?"

Ans.—1. Fruits and nuts. In the majority of cases it is not necessary to avoid starchy foods. It is only essential that mushes and starchy vegetables be avoided.

2. Yes, if the bread is good, and the slice is exposed to a temperature sufficiently high or the baking be continued sufficiently long to brown the slice throughout.

3. Yes. Fruits and nuts are without doubt the natural dietary of man.

Palsy.— H. R. C., Wisconsin, asks (1) if there is any cure for shaking palsy of the head; (2) if electricity from a dry cell battery and induction coil machine would be beneficial; (3) if electricity is harmful in any nerve disease; (4) when, where, how, and for how long should a current be applied for shaking palsy; (5) for other nerve disorders.

Ans.— 1. Such a case rarely recovers.

2. Some benefit may be received.

3. Some persons, especially nervous individuals, have an idiosyncrasy against electricity.

4 and 5. To answer these questions would require more space than can be allotted to the discussion of technical questions in these columns. We will say briefly, however, that the galvanic current may be applied to the back of the neck and the epigastrium in the case of shaking palsy.

What Will Replace Pork in Cooking Beans? — Mrs. G. H. P., Ohio, asks what will take the place of pork in cooking beans.

Ans.— Nut preparations, such as protose and nuttolene. Address for catalogue the Sanitas Nut Food Co., Battle Creek, Mich., or the Sanitarium Health Food Co., who furnish canned beans containing no pork.

Massage versus Osteopathy.— J. M. M., California, wishes to know the distinguishing characteristics between massage and osteopathy.

Ans.— Osteopathy does not differ essentially from massage and the Swedish gymnastics in combination.

Calculus.— C. D. S., Colorado: "1. What can be done to relieve one troubled with calculus until he can visit a sanitarium? 2. Are lithia-water tablets beneficial? 3. Is calculus curable? 4. Is hot bathing to be recommended in kidney and bladder troubles? 5. Is the Boulder Sanitarium good for such diseases as this? 6. What will keep the bowels open when health foods are impossible and fruit scarce? 7. Is spring water containing considerable iron and sulphur bad for the kidneys?"

Ans.— 1. A warm sitz bath, temperature 100° to 104°, copious water-drinking, the enema, and irrigation of the bladder are the necessary measures.

2. No.

3. Yes, by removal of the calculus, correction of the habits of life, and improvement of the general condition. The calculus is due to a general systemic disorder.

4. The hot bath is essential in acute inflammation of the bladder or kidney. For chronic affections of these organs, water at a lower temperature should be employed, but not in such a way as to induce congestion of the bladder and kidneys; that is, a long, cold bath should be avoided. The cold applications should be very short, and should be partial applications, such as the wet hand rub and the wet towel rub.

5. It is most excellent.

6. The use of nuts is very helpful in maintaining activity of the bowels.

7. Water used for drinking purposes should be as pure as possible. The more ingredients water contains, the more unwholesome it is.

Shoes.— F. W. B., Nebraska, asks where he can obtain shoes made to fit the foot.

Ans.— Such shoes can be obtained from most first-class shoe stores at the present time. There are a few specialists in foot-wear who manufacture shoes especially to fit the person's feet. A high price is usually charged for shoes thus made to order. We do not happen to have the address

of any person engaged in this business at present, but will endeavor to obtain the same and publish in the advertising columns of GOOD HEALTH.

Protose — Substitute for Cow's Milk — Fats — Butterine — Cottonseed Oil. — A subscriber: "1. Does protose cause heartburn? 2. What besides nut foods will replace cow's milk? 3. Is it not necessary to use fats in some form? 4. Is butterine fit to be used? 5. Is cottonseed oil adulterated with lard?"

Ans. — 1. No.

2. We know of nothing.

3. Yes.

4. Butterine is certainly not the fittest kind of fat.

5. Probably not.

Heartburn — Hunger — Wind in the Lower Bowel — Constipation. — A. J., Nebraska: "1. What is the philosophy of heartburn? 2. What causes an intense hunger when one has sufficient food, and which ceases in an hour or so? 3. Is wind in the lower bowel caused by prolapsed colon? 4. Outside of health foods, what is the best diet for constipation?"

Ans. — 1. The fermentation of food in the stomach.

2. Probably excessive secretion of hydrochloric acid.

3. It may be that the direct cause is the retention of fecal matters which have not been promptly discharged.

4. One consisting of an abundance of fruits and nuts and coarse grain preparations.

Peanut Butter. — A. W., New York: "1. Is peanut butter made of roasted peanuts? 2. If so, is it not indigestible? 3. Will it answer for shortening? 4 Will it take the place of dairy butter? 5. Why can we not grow peanuts in this locality? 6. Do they need rich soil?"

Ans. — 1. As far as the writer knows, all the peanut butters on the market are manufactured from roasted peanuts, with the exception of that manufactured by the Sanitas Nut Food Co.

2. It is less digestible than that made from boiled nuts.

3. It may be so used, but we do not recommend it.

4. Yes, but is less wholesome.

5. The season is not long enough.

6. They need a soil especially adapted to their culture. They are a product of subtropical countries. They grow especially well in the South, and in Oklahoma and Southern California.

Peanuts. — A. S. M., New Mexico, asks how long peanuts should be boiled to be thoroughly done.

Ans. — From eight to twelve hours.

Chewing Milk — Dry Cereal vs. Oatmeal — Does Water Facilitate Absorption? — Digestive Juices — Granose — Hypopepsia — Water — Butter — Osteopathy vs. Massage — Cannon-Ball Massage. — V. S. L., Michigan: "1. What are your reasons for saying that milk should be chewed when an infant without teeth thrives on milk? 2. If dry cereals are easily digested, why do you recommend ("The Stomach," page 234) oatmeal gruel, etc., for fever when the digestion is weak? 3. Does not the Encyclopedia Britannica under 'dietetics' argue in favor of water for facilitating absorption? 4. If the digestive juices do not need diluting, why do natural foods contain so much water? 5. Are not different foods taken at the same meal absorbed in the order of digestibility? 6. If so, why do you in "The Stomach," page 78, have milk wait before meat before leaving the stomach? 7. Will granose digest quicker than boiled rice? 8. If predigested foods weaken the normal stomach, why do you recommend granose and similar foods? 9. If one finds exercise necessary after every meal, is he safe in dieting for hypopepsia? 10. How long does water remain in the stomach? 11. If cold water is drunk one-half hour before meals, will it stimulate or chill the stomach? 12. Are you not more favorable to butter than formerly? 13. Is osteopathy better than massage? 14. Is cannon-ball massage as helpful in weak digestion as walking? 15. What should be the weight of the balls?"

Ans. — 1. The child, as well as calves and other young animals, makes constant movements with its jaws when suckling, equivalent to mastication, and which aid in the secretion of saliva.

2. In fever there is little or no saliva formed, and the digestion of starch in the stomach is practically impossible. The digestive work is done particularly by the pancreatic juice. Granola and grānut, with fruit juices, are better foods than gruel. Fruit juice alone is a capital food in fever.

3. It is astonishing how little the Encyclopedia Britannica knows about dietetics. Recent modern experiment shows that little or no absorption takes place from the stomach. Water is necessary to aid absorption, but should not be taken in such a way as to interfere with digestion.

4. Those nut foods which contain the most water require practically no digestive work. Food stuffs ready for absorption require no digestion.

5. This is true, but not altogether, for some portion of the digestible food is retained in the stomach with the undigested food. Absorption does not take place from the stomach, but from the intestines, chiefly the colon.

6. The casein of milk adheres to the particles of meat and other substances, which may be long retained in the stomach.

7. Yes, for the reason that it is more quickly broken up into fine particles.

8. The term "predigestion" as applied to cereal foods perhaps communicates a wrong idea. The

human stomach is made for the digestion of dextrin, and not starch. Human saliva has no effect whatever upon raw starch. Fruits contain starch in the form of dextrin. This is true of grains in their green state, and the grains which have been converted into achroödextrin, that is, thoroughly cooked until they have assumed a brown color. By the thorough cooking of grains the starch is brought to a condition closely resembling that in which it is found in fruits and nuts, which renders them natural foods for human beings.

9. No, it is simply not a natural dietary.

10. Until the stomach contracts, when it passes it out of the duodenum. There is little absorption from the stomach.

11. It will stimulate it.

12. Recent experiments have shown that cream always abounds in germs. As the cream rises to the surface of the milk, it captures the germs and carries them along, so that when the milk is skimmed, the germs are removed. Butter on this account is looked upon as a most undesirable article of food.

13. Osteopathy includes massage and Swedish gymnastics.

14. No.

15. The weight of the ball must depend upon the strength of the abdominal muscles and the degree of abdominal tenderness, say from two to ten pounds.

Diarrhea.— S. S., Mexico, asks (1) why sweet raw California apples should cause pain and gas in the bowels, and diarrhea; (2) a remedy for the same; (3) if a good electric belt would help.

Ans.— 1. They are probably swallowed without being properly masticated, so that particles of undigested apple find their way into the intestine, producing fermentation and eructations. The apple should be scraped into a pulp or stewed before eating.

2. During the attack a very hot compress followed by a cold compress, and the enema at 110°.

3. No.

Erysipelas.— E. W., Alabama: "1. What causes erysipelas in the nose? 2. What will cure it? 3. Is the use of a moderate amount of sage hurtful? 4. Is the use of nut butter injurious to the kidneys?"

Ans.— 1. Infection from germs, which are always found in the air, upon the skin, or in contact with the mucous membrane. An abrasion or lowered vital resistance is the cause of infection.

2. Improving the general vital resistance, and bathing the nose in hot water.

3. We know of no evil results from the use of a small amount of sage.

4. No, unless the nuts are roasted. If the nuts are roasted, some evil may arise from this source.

Asthma.— F. K., Texas: "1. One who took a severe cold three years ago has since had what seems to be asthma, having labored breathing, and is continually expectorating. He has lost thirty pounds. Appetite varies. What is it? 2. What will cure it?"

Ans.— 1. The patient has either bronchial catarrh or tuberculosis of the lungs.

2. He should be thoroughly examined by a competent physician at once, and should probably make a change of climate immediately.

Food for Old People.— H. S. T., Minnesota, asks what is the best food for a man of seventy-eight.

Ans.— There is nothing better than granose, granola, and zwieback, with fruits. The zwieback may be softened by the addition of stewed fruits a little time before it is to be eaten, making the so-called "fruit toast."

Prepared Foods—Shredded Wheat Biscuit.— E. N., New York, asks (1) if we can suggest any already prepared foods; (2) the food value of shredded wheat biscuit.

Ans.—1. Granose flakes, granose biscuits, grānut, granola, the various nut products of the Sanitas Nut Food Co., and nearly all the cereal products of the Battle Creek Sanitarium Health Food Co., are prepared foods, ready to eat at once.

2. The food value of shredded wheat biscuit is probably the same as that of whole wheat, as it is made from wheat.

Bad Taste in the Mouth.— S. W., Michigan: "What causes a bad taste in the mouth, and a coated tongue?"

Ans.— General lowered vital resistance and deteriorated body. The stomach is usually disordered, but not always.

Dysentery.— Mrs. H. M. B., Missouri, asks what will strengthen one after an attack of dysentery.

Ans.— The cold wet hand rub or wet towel rub and the wet sheet rub are excellent measures for this purpose.

Watery Eye.— F. S., California, asks what home treatment should be given an eye that "weeps" all the time.

Ans.— The patient should consult a skilled oculist. Some relief may be obtained by the application of hot water two or three times a day.

LITERARY NOTICES.

In a brief illustrated paper of great charm, Christine Terhune Herrick gives, in the June **New Lippincott,** a timely description of a Swiss Passion Play, less known but no less interesting than that of Oberammergau.

"The Battle of Bunker Hill," treated in the clear and brilliant style of Stephen Crane, is another winning feature. This forms the fourth in the series of "Great Battles of the World," wherein Crane worked with a real love of his subject, and therefore with unusual power.

Ernest Seton Thompson has written a play for the **Ladies' Home Journal,** in which the characters are chiefly wild animals. Lobo, Wabb, Blanca, Cottontail, Redruff, Silverspot, and all the other animals of the plain and forest that this sympathetic writer has known and written about, will appear as stage characters. The play appears in the July number.

Among the thirteen articles in the June **Forum,** there are at least seven which will be widely quoted and discussed: Consul-General Ho Yow's vigorous criticism of "The Attitude of the United States toward the Chinese;" "Do We Owe Independence to the Filipinos?" by the Hon. Charles Denby; Sir Charles W. Dilke's paper on "U. K., U. S., and the Ship Canal;" "The Present Position of the Irish Question," by the man best qualified to speak, J. E. Redmond, M. P.; Edward Emory Hill's essay on "Teaching in High Schools as a Life Occupation for Man;" Professor Hall's arraignment of "College Philosophy;" and the Hon. John Charlton's paper on "American and Canadian Trade Relations."

The Kindergarten Review announces that with the beginning of the next volume, September, 1900, the price of the magazine will be reduced from $2.00 to $1.00 a year, while the standard of literary and professional merit will be higher than ever before. The *Kindergarten Review* is one of our most valued exchanges, and we are glad to note that it is to be placed within reach of a larger class of readers. The June number contains a beautiful allegory called "A Little Rough Stone."

In one editor's opinion "The Little Boy and his Pa: The Story of How They Got Acquainted with Each Other," by Ellsworth Kelley, in **Mc Clure's Magazine** for June, is the best short story of the month. The first article is "A Cadet at the Battle of the Yalu," by Apachi Kinnosuké, author of "Iroka; Tales of Japan," and is a story of the Japanese-Chinese War.

An article by Daniel Gregory Mason in the July **Scribner's,** on "The Tendency to Health," contains some good-humored advice to those who are always bothering both themselves and their friends about their symptoms rather than trying to help nature along.

Barrie's masterpiece, "Tommy and Grizel," reaches a most interesting situation in this number. The speculation is growing as to how Grizel is going to fare at the hands of this interesting but exasperating young literary gentleman.

"My Mother's Life: the Evolution of a Recluse," or, in other words, the promised biography of the late Mrs. S. M. I. Henry, by her daughter, Mary Henry Rossiter, has just come from the press of Fleming H. Revell Company, of Chicago.

The volume abounds in touching, stirring, inspiring incidents. It is largely autobiographical, Mrs. Rossiter having made extensive use of an unpublished manuscript found, after her mother's death, among her papers,—a manuscript, the existence of which was a great surprise.

This biography reads almost like a novel or romance. Mrs. Henry's early life was spent on the frontier, when Illinois and Iowa were the far West; and the story of her girlhood and early married life is full of the coloring of those thrilling times.

Mrs. Henry has herself given the history of her first public work, in association with Miss Willard and other W. C. T. U. leaders. Mrs. Rossiter has shown the domestic and personal side of her mother's character, giving many illustrations, drawn from their own home life, of the "all-around" possibilities of a literary woman.

The book is illustrated by half-tones of Mrs. Henry at different periods of her life, reproduced from old daguerreotypes.

The book contains 350 pages, and will be sold by subscription at $1.50. Readers of GOOD HEALTH who wish to make sure of a copy of the first edition should send their orders at once to Miss Anna C. White, Battle Creek, Mich.

PUBLISHERS' DEPARTMENT.

MR. J. J. WESSELS, one of the founders of the Claremont Sanitarium, of South Africa, recently made a flying visit to America, and was warmly welcomed by his old friends in Battle Creek. Mr. Wessels is a representative of one of the wealthiest and most distinguished of the Boer families of South Africa, and has a large number of relatives in the war in that country. His brother, General Wessels, conducted the siege of Kimberley. Mr. Steyn, President of the Orange Free State, is his cousin; the two Generals Botha were his mother's brothers. Mr. John Wessels has taken no active part in the war, as he has been in Australia, promoting the establishment of our Sanitarium in that country.

The Claremont Sanitarium, the funds for which were furnished chiefly by the Wessels family, is very full of patients at the present time, fully half the space being occupied by British officers, who speak very highly of the care which they have received there. One old British general, through contact with the nurses and physicians while under treatment for his wounds, has renounced the use of tobacco and spirituous liquors, and become a strong adherer to the principles which the institution represents. Lord Roberts, a staunch advocate of temperance, was much pleased with the institution, and, as mentioned in a previous number, his indorsement of the work has done much to extend the fame of this excellent establishment, not only in South Africa, but in other English colonies as well. Dr. Anthony, who has been the medical superintendent from the opening, has recently returned after a few months spent as a volunteer surgeon on the battlefield. Dr. Davies, who recently returned to South Africa laden with medical honors from the London schools, took charge of the medical work of the institution during Dr. Anthony's absence. Mrs. Davies, also a physician, a niece of President Steyn, of the Orange Free State, and who is now in London, will soon connect with the work in South Africa. During his visit, Mr. Wessels made arrangements for the development of the health food business in South Africa, and for other extensions of the work which will soon be put into operation.

THE GOOD HEALTH PUBLISHING COMPANY.

BELIEVING that our readers will appreciate a better knowledge of the general work of the Good Health Publishing Company, we give the following brief sketch:—

The Good Health Publishing Company is the outgrowth of the publishing department of the Battle Creek Sanitarium, having been founded in 1866, at which time it began the publication of the *Health Reformer*, now so widely and favorably known as the GOOD HEALTH MAGAZINE.

At the present time this Company is issuing three monthly and two quarterly periodicals, the principal one being the magazine from which it takes its name. The medical periodicals issued under its supervision are *Modern Medicine*, and the *Bulletin of the American Medical Temperance Association*. It has also under its charge a thirty-two page monthly journal entitled *The Medical Missionary and Gospel of Health*, besides the *Haskell Home Appeal*, a little quarterly paper published in the interests of the Haskell Memorial Home for Orphans, situated in Battle Creek. In addition to the foregoing periodicals this Company publishes Dr. J. H. Kellogg's standard medical and health works, of which many thousand copies have been sold throughout the world. Their 1900 catalogue lists over seventy-five different bound books, pamphlets, and tracts.

To-day GOOD HEALTH enjoys the largest circulation of any health periodical in existence. It not only reaches every State in the Union, but it also has a good representation in foreign countries. As most of our readers well know, GOOD HEALTH is in no sense a medical or a technical publication, but strictly a magazine for the home. For a number of years it was published in larger form than it now appears, but was reduced in 1896 to standard magazine size, since which time it has filled a prominent place in the magazine world, both for the high character of its text and advertisements and for its wide circulation.

Branch offices are located in New York, London, England, and Melbourne, Australia.

WHAT DR. KELLOGG SAYS ABOUT "MY MOTHER'S LIFE."

THROUGH the courtesy of the author, I have had the much appreciated pleasure of reading the advance sheets of "My Mother's Life," a biography of Mrs. S. M. I. Henry, written by her daughter. I knew, from intimations of the unusual richness of material, and from my personal acquaintance with the subject of the sketch, that the work would be both profitable and interesting; but I was quite unprepared to find a volume so replete with most intensely interesting incidents and experiences told either by Mrs. Henry herself or by her gifted daughter, in a most impressive and attractive way.

I deem it most fortunate for the world, for the men and women who live in this generation, and especially the young, that this volume has been written, so that the useful lessons which may be drawn from a remarkably consecrated and Heaven-blessed life may be brought to bear upon many thousands of lives which may be thereby influenced to nobler and more purposeful living.

Mrs. Henry's daughter has brought to the task of portraying her mother's life a large measure of her mother's literary talent, and an intimate knowledge of her character, her labors, and her views and sentiments possessed by no other living person, and has shown great literary wisdom and intelligence in the selection and arrangement of the large amount of material in her hands.

"My Mother's Life" is a book which ought to be placed in the hands of every young woman who knows the English language. It is a strong and beautiful picture of a strong and beautiful life, and its perusal can not fail to impart to the reader something of the Christian grace and womanly sweetness and strength of the noble and gifted soul of whose life work it is a simple and truthful record.

The book must have a large circulation. Mrs. Henry's ministry of soul-healing has been so widely extended that if only those whose hearts have been gladdened and whose spiritual lives have been quickened by her writings and her public services as an evangelist should possess themselves of this volume as a wreath of "immortelles" plucked from a life rarely glorious and fragrant with bloom, many thousands would draw comfort, counsel, instruction, and inspiration from its pages.

J. H. KELLOGG.

THE New England Sanitarium at South Lancaster (Mass.) is well filled with health seekers. Under the able management of Dr. C. C. Nicola, the institution has been a success from the beginning. The management have found it necessary to rent and equip a large adjacent building as an annex to accommodate the large and growing business.

THE St. Helena (Cal.) Sanitarium is enjoying a good patronage the present season. The health food department is growing. The branch sanitariums established at Los Angeles and San Francisco

are exceedingly prosperous. California has, for many years, been a Mecca for invalids, and is a fruitful field for sanitarium work.

THE patronage of the Sanitarium at Summer Hill, Australia, has grown so rapidly that the management have been obliged to rent several large buildings in order to accommodate the patients.

The recently organized treatment-rooms at Brisbane and Cooranbong have their capacity taxed to the utmost to care for the patients daily applying for treatment.

THE Sanitarium treatment-rooms established within the last year at Toledo, Detroit, and Seattle are already doing a flourishing business. The interest in sanitary and hygienic reform is everywhere rapidly increasing.

THE Sanitarium treatment-rooms established at Madison, Wis., by invitation of leading citizens, are now ready for active work, and are even now taxed to meet the demands. Rational and natural methods of dealing with the sick are becoming more popular year by year.

THE Walla Walla Health Food Company reports a flourishing business. The young and enterprising institution is making an excellent quality of foods, and is already supplying half a thousand patrons with these wholesome products. The management contemplate the establishment of a branch business in the thriving city of Spokane at an early date.

THE splendid advantages of the Guadalajara Sanitarium, Guadalajara, Mexico, as an excellent all-year-round resort for invalids who are unable to bear the rigors of winter or the heat of summer of the temperate zone, are well attested by the excellent patronage which the institution has enjoyed during the past year. Nowhere else in the world can invalids find better conditions for health-getting than at the Guadalajara Sanitarium.

THE recently established Sanitarium at Spokane Falls reports every room full, and many applying for admission who can not be received. A movement is on foot among the citizens to secure the erection of a large and well-equipped institution where the sick can have the benefit of rational and scientific treatment, and which may be a center for the promulgation of wholesome ideas in relation to natural habits of life. It is reported that there is a great interest among the people of this intelligent and prosperous community in hygienic and sanitary reform. Judge Arthur is giving public lectures in one of the largest halls of the city, which are enthusiastically received, and Mrs. Arthur is holding parlor meetings with the ladies in the interest of diet and dress reform, and with great success.

VISITORS to the Paris Exposition who wish to avail themselves of the services of trained Sanitarium nurses, either man or woman, should call on or drop a card to Mr. or Mrs. Paul Roth, Rue Dangeau 5, Paris, France. Mr. and Mrs. Roth are thoroughly competent, having been trained at the Battle Creek Sanitarium.

Health Foods can be obtained at the same place.

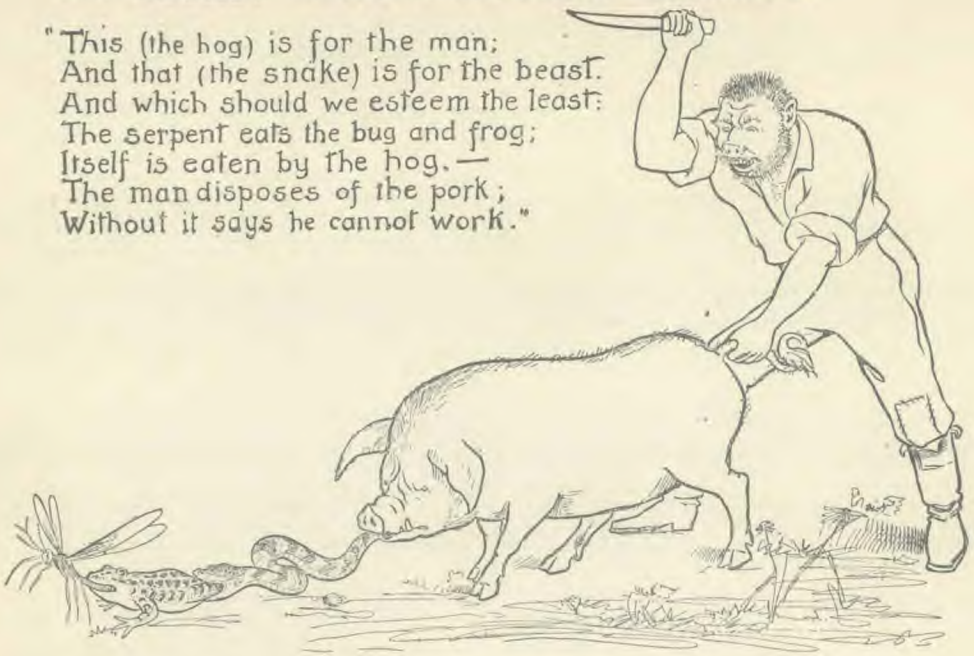
SANITARIUM patients who wish can obtain a supply of health foods from the London Health Food Co., 451 Halloway Road, London, N., England. Any one wishing to consult a Battle Creek Sanitarium physician can do so by calling upon or addressing Dr. D. H. Kress or Dr. Lauretta Kress, Dunedin, Meadville, Redhill, Surrey, England.

THE Skodsborg Sanitarium at Copenhagen, Denmark, enjoys a large patronage the present season. Dr. Ottosen and his colleagues are doing excellent work in the three Scandinavian countries in instructing the public in the rational principles of living, and in training young men and women for medical missionaries and other lines of philanthropic work.

THE LITHIA SPRINGS CHAUTAUQUA ASSEMBLY in Shelby County, central Illinois, is one of the most interesting summer gatherings about which we know. From one thousand to fifteen hundred people camp here every summer, and devote their time to learning how to be wiser, healthier, and better, how to help in the great work of lifting the standards for home, country, and mankind. This year the Assembly will meet from August 8 to 27. Among the speakers advertised are Father Cleary, Lou J. Beauchamp, General Booth, Sam Jones, John G. Wooley, and George E. Vincent. A School of Health will be conducted by trained teachers from the Battle Creek Sanitarium.

BILL NYE said that he once met "a young man from the salons of Paris, Ill., who could pass cigarette smoke entirely around through the inside of his head, and out at the nose, without injuring the brain, although the flavor of the smoke was somewhat impaired."

AN OBJECT LESSON ON MEAT-EATING.



ACCOUNTED FOR.

I AM not feeling well to-day,
But why I can not see.
I had some ice cream 'cross the way,
And pancakes home for tea.

I also had some caramels,
And sugared almonds, too;
And when I met with Tommy Wells,
A stick of fine tulu.

But I was careful with each one,
Too much of none I ate —
It can not be that penny bun,
And yet the pain is great.

I had six cookies, but I 've had
Six cookies oft before;
They 've never left me feeling bad,
Nor pickles,— three or more.

The soda water could n't make
Me ill — 't was Billie's treat;
I sort of think this fearful ache
Comes wholly from the heat.

— *Harper's Young People.*

A NATURAL APTITUDE FOR THE PROFESSION.— *Dr. Bolus* (to his patron's little son) —"Well, Johnnie, what are you going to be when you grow up?"

Johnnie —"A doctor. Watch me kill a toad now."

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WE SELL THIS RANGE DIRECT TO YOU AT ABOUT ONE-HALF DEALER'S PRICES, AND WE PAY THE FREIGHT.

Send for Catalog and complete price list. The range here illustrated is within the reach of every home. Write to-day for prices. You will be astonished at the small amount of money required.

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The Desire of Ages

BY MRS. E. G. WHITE.

The author treats the life and work of Christ and his disciples in this volume from the standpoint of a believer to believers, and as a Christian to Christians.

"The Desire of Ages" is more than a biography of the life of Christ: it is the story of the life of lives, revealing the breadth, height, and depth of the Father's love in the gift of his only begotten Son for the fallen race. This gift of love was recorded by the seers of old in Sacred Writ long before the Messiah came to the deliverance of his people.

The scenes and incidents in connection with the Saviour's birth in Bethlehem of Judea, the appearance of the angels to the shepherds; his presentation; the visit of the wise men; the childhood and youth of Jesus; his mother his first human teacher; Christ's baptism; choosing his disciples; the Great Teacher; his miracles and labors; nearing the end; in Gethsemane; before Annas; in Pilate's judgment-hall; Calvary; in Joseph's new tomb; and the resurrection and ascension are dwelt upon in such a way as to enable the reader to obtain a new glimpse of the divine character revealed in the earthly life of Christ.

"The Desire of Ages" is a book for parents, educators, Sunday-school officers, teachers, and students. It is an invaluable reference book, and should be in every home and library.

It is printed on extra finished, supercalendered book paper, contains 866 pages, beautifully illustrated, handsomely and substantially bound. The following various styles and prices bring the book within the reach of all:—

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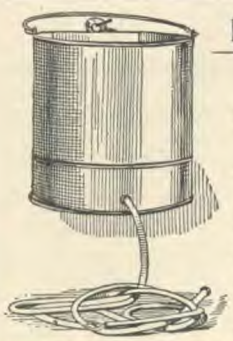
This is a First-class Fountain Syringe, which may be quickly changed to a Water Bottle by detaching the tubing and substituting the metal Cap.

WE have recently arranged for the manufacture, for our special trade, of this convenient combination in an improved form. It consists of a substantial water bottle with funnel neck, a safe and durable cap, and six feet of fine improved tubing, with suitable attachments for connecting with the bag. An outfit of the usual syringe tubes is supplied with the syringe, and the whole is packed in a neat and substantial wooden box.

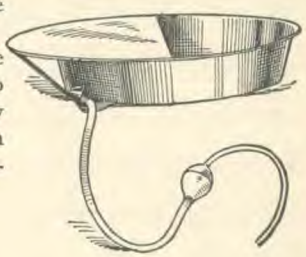
Price, complete, postpaid, - - - - - - - - - - - $2.00
Fountain Syringe only, postpaid, - - - - - - - - - - 1.75



Perfection 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 can not 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.

Price, complete, - - - - - - - - - $2.00
Douche Pan, without fountain or tubes, 1.00

Sent by express.

Address **GOOD HEALTH PUB. CO., Battle Creek, Mich.**

☞ See pages 430-431 for three-color insert showing some palatable dishes which can be easily prepared from these foods.

modern conveniences, including a steam heating plant, an electric-light plant, an elevator, commodious bath apartments, treatment rooms, etc.

Our mode of treatment includes Hydrotherapy in all its forms, Electrotherapy, Massage, Swedish Movements, Electric-Light Bath, Scientifically Prescribed Dietary, etc. Also a Laboratory of Hygiene, where chemical and microscopical analyses are made of the stomach fluids, blood, and urinary secretions. The principles underlying the natural and hygienic methods relative to the securing and maintaining of the health and happiness of humanity which are set forth throughout the pages of this journal, are carefully adhered to and generously taught to the patrons of the Nebraska Sanitarium.

A very encouraging patronage has already been built up, and a very prosperous future is predicted for this institution. Especially during the past three months the patronage has been more extensive, and the outlook for the future more encouraging than at any other previous time. Circulars free on application.

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Or A. N. LOPER, M. D., Supt. **COLLEGE VIEW, NEB.**

A Health Food Factory

Is also connected with this institution, from which a large output of scientifically prepared health foods finds its way to the increasing list of patrons in all directions. These wholesome and palatable foods are found to be indispensable in the successful treatment of the large variety of digestive disorders with which we have to deal in our Sanitarium. Among our foods are found **Granose, Granola, Caramel-Cereal, Health Crackers** of all kinds—**Oatmeal, Whole Wheat, Fruit, Gluten, Graham, etc.;** also the toothsome and delicious **Nut Preparations** manufactured by the Sanitas Nut Food Co., connected with the Battle Creek Sanitarium. Orders from a distance receive prompt attention. For price lists and further information, apply to the business manager,—

J. J. ALLEN,

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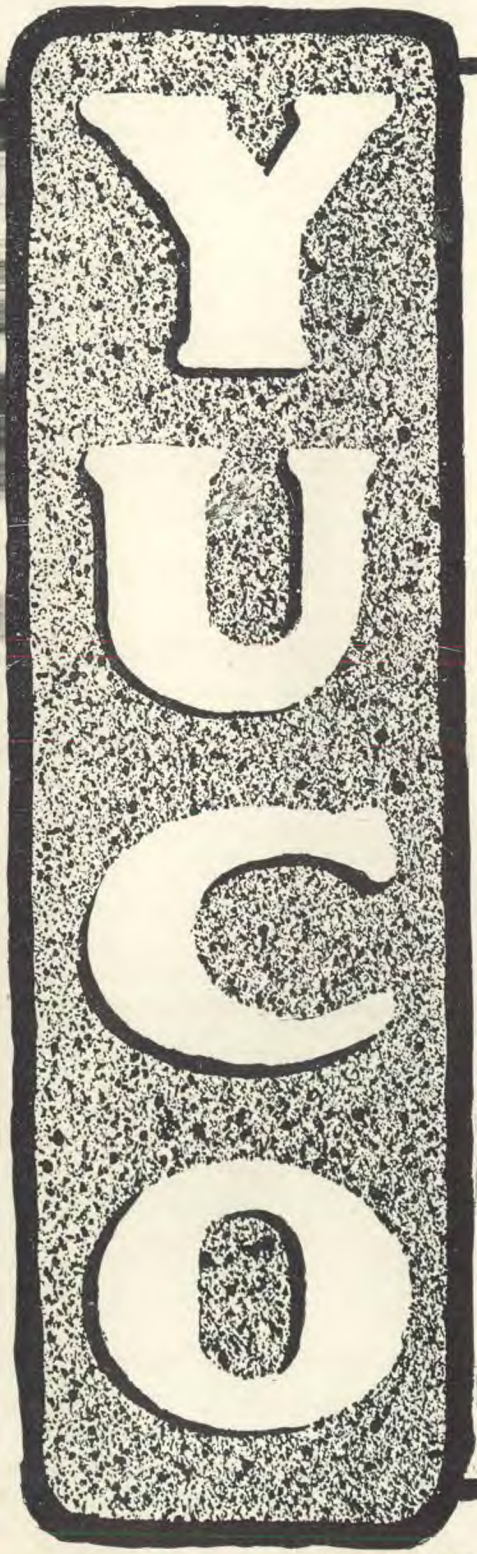
THE BEST FOOD FOR SUMMER



Have you tried the New Wheat Food?

It's different from any other prepared cereal. Rich in all the health producing and retaining qualities of whole wheat. Sterilized and parched in an improved scientific way.

Yuco

This is The New Wheat Food.

A delicious and healthful dish for many meals. The best for breakfast. Satisfying and substantial for dinner. Dainty and delicious for dessert.

Ask your grocer for Yuco. If he does not keep it send us his name and we will write you where it can be purchased.

The recipe book which accompanies every package tells how to make a variety of new dishes from Yuco. Sold everywhere in 2 lb. packages.

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Makers of the famous Gold Medal Flour.

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THE institution is situated on an elevated site, overlooking the city of Lincoln, which lies three miles to the northwest, and with which it is connected by an electric street railway.

One of the most healthful locations between the Mississippi River and the Rocky Mountains.

A well-regulated institution for the treatment of all chronic diseases.

Buildings with modern improvements and perfect sewerage, lighted with electricity, heated by steam, and well ventilated. Several thousand dollars have been expended during the past season in refitting our buildings, including elevator, and improvements in our lighting and heating systems.

Commodious, well-equipped bath-rooms.

Baths of every description, including the **electric-light bath.**

Electricity in all forms.

Massage and **manual Swedish movements** by trained manipulators.

Scientifically classified dietary.

Aseptic operating-rooms and surgical wards.

Laboratory of Hygiene for bacteriological and microscopical investigation.

Three physicians, well-trained, with large experience in sanitarium medical work.

Trained nurses of both sexes.

Best of advantages for the treatment of all forms of chronic diseases.

SKILLFUL ATTENTION GIVEN TO THE TREATMENT OF

DISEASES OF THE STOMACH AND DIGESTIVE SYSTEM,

DISEASES OF THE EYE, EAR, NOSE, THROAT, AND LUNGS,

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