# GOOD HEALTH

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## THE CHIEF CAUSE OF NERVOUSNESS.

BY J. H. KELLOGG, M. D.

NERVOUSNESS is simply the morbid expression of a sensation. If a man is in perfect health, all his organs are in a normal state, and he has no consciousness of their existence. As Carlyle says, "The healthy know not of their health, but only the sick." One is unconscious of his entire internal structure until some part or some organ becomes diseased. This is because the sensibility of the internal organs is so small that when they are quite normal they are not able to express themselves with sufficient emphasis to be felt; it is only when the nervous sensibility is enormously increased by disease that we become aware of their existence.

On the other hand, the nerves of the external parts and organs are especially intended to express sensation, to make us conscious of our environment. Hence the keenest sensations experienced as the result of the activity of external nerves may be perfectly healthy and normal, while any kind of feeling in the internal part of the body is evidence of an unnatural condition.

These morbid expressions of sensation are of various sorts. If I place my hand upon the table, I experience a normal sensation of touch; but if I feel something touching my hand when there is nothing there, I am nervous — I am the victim of an abnormal action of the sense of touch. One may sometimes feel feverish, and have a burning in the palms of his hands and the soles of his feet, when there is really no rise of temperature. This is an abnormal sensation; a nervous chill is not a chill, but a sensation of chill. When one suffers from cold when he is not cold, and from heat when his body is not even warm, his nerves are acting abnormally, and his condition indicates disease.

Sometimes the difficulty is with the sense of sight. Specks or sparks appear before the eyes when there are no specks there. Sometimes the apparition is a violet or a green light, or a sudden blackness coming before the eyes. People often think they are going to die of apoplexy; they have crawling sensations in their legs, and are sure they are going to be paralyzed. These sensations may be only the morbid expressions of a nervous condition — not because the nerves are necessarily diseased, but because they are in some way disturbed.

The causes of these nervous disturbances are varied; the most common of all, however, is indigestion. Yet the majority of people who suffer from these morbid sensations feel no pain or discomfort in the stomach. But when the mouth and the contents of the stomach are examined,

they are found to contain poisons generated by decaying food substances. The tongue of a person affected in this manner is covered with germs. This is positive proof that poisons are being absorbed into the blood, and that the whole body is disturbed by them. The physician knows that this is the root of the trouble, but it is hard to make the patient believe it, because, according to his opinion, he has no difficulty with his digestion.

There are thousands of people living under a terrible burden of nervousness simply because their stomachs have fallen into such a state that the food they eat becomes poisoned, and the poisons distributed throughout their bodies manifest themselves not only in all these various nervous sensations, but in dulness of thought, irritability, and numerous other disagreeable ways. Perhaps the sufferer is a business man. He runs up a column of figures, and forgets how much it is. He has to go over it two or three times before he gets it right. He is perplexed and confused in various ways, and spends twice as much time as he ought on everything he does, just because he can not concentrate his mind upon his work. Perhaps he falls into a chronic state of inattention, and finally becomes incapable of doing business. Or the sufferer may be a woman, a housekeeper. Nothing goes right in the home. She has "nervous spells," and is obliged to go off by herself and "have a good cry."

Now these manifestations do not grow out of a diseased condition of the brain or spinal cord, as is often supposed, but they come from a foul stomach, which is sending poisons to every part of the body.

One is just as surely poisoned in this way as if the poison were injected beneath the skin by a hypodermic syringe. This theory has proved true in so large a proportion of the cases coming under my care that I am convinced that these morbid conditions of the alimentary tract are responsible for at least ninety-nine per cent. of all the nervousness of which people complain.

I ceased, long ago, to try to treat nervous symptoms except in a palliative way, but have made it a point to strike at the root of the trouble,— the stomach. When you find a Canadian thistle growing in your yard or garden, you do not stop with cutting it off even with the ground. It is of no use to touch it unless you dig it up, roots and all. Every fiber must be destroyed or it will surely spring up again. It is just as necessary to strike at the roots of stomachic ills.

Of course there are other causes of nervousness besides indigestion. Some people are born with diseased nerves. There are also reflex causes which affect the nerves. Local irritations of various sorts may become so great as to produce a chronic condition of nervous exhaustion. But in the vast majority of cases this disagreeable and dangerous state may be traced directly to the poisoning resulting from indigestion. When the causes of indigestion are removed and the stomach is allowed to resume its normal action undisturbed, the nervousness, the irritability, the headaches, the dulness, disappear, and the stomach becomes once more a silent, unconscious organ.



MOUNT SAN MATEO, ON THE SUMMIT OF WHICH THE PRAYER SPRING OF THE PUEBLO INDIANS IS LOCATED.

# THE PUEBLO INDIANS AND THEIR PRAYER SPRING.[1]

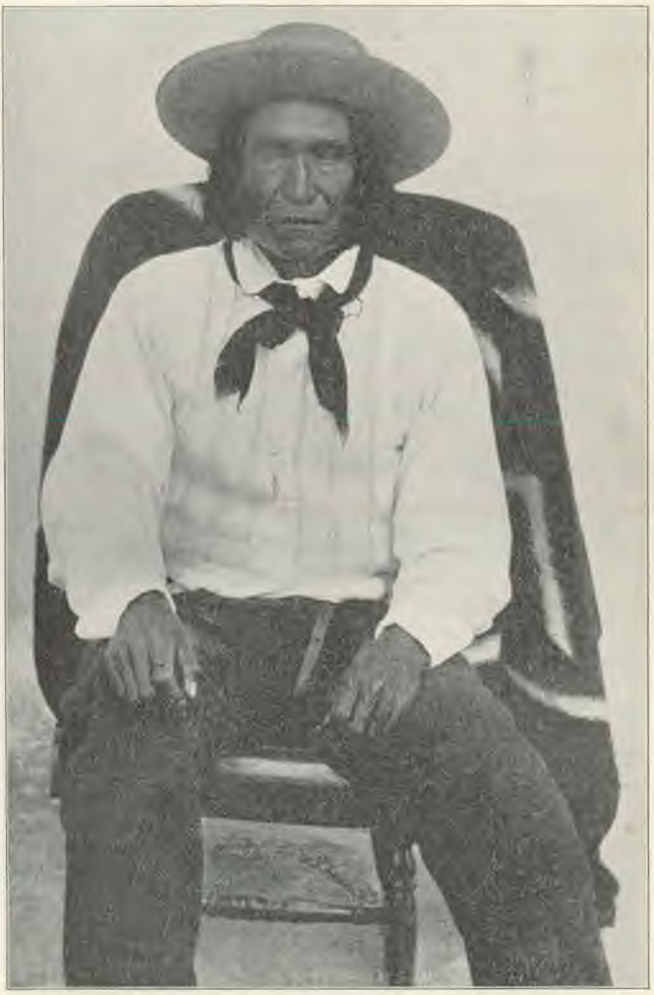
BY GEORGE WHARTON JAMES.

BOLD, proud, and beautiful, the San Mateo Mountains rise above the whole surrounding region. The transcontinental traveler going toward the Pacific Coast on the Santa Fé line will see, as he reaches Albuquerque, and continue to see, on the right hand side of his car, this glorious pile, apparently a short distance away. At Laguna — the quaint Indian pueblo by which the railroad passes — it is nearer at hand, and at Grants, thirty miles farther along, it seems to stand so close as to be brooding over the tiny settlement so named.

Yet to reach its summit one must ride in a wagon or buggy or on horseback twenty-five miles to the small Mexican town of San Mateo, and there take a horse and spend a day in making the ascent and the return to the village.

But before making the ascent, and on the very summit visiting the wonderful prayer spring of the Pueblo Indians, let us take a glance at the Pueblo Indian villages near at hand, to the inhabitants of which this spring is of importance.

Three of the largest pueblos are located not very far from Mount San Mateo. To the eastward is Laguna; almost due south is Acoma, "the city of the cliffs," and southwest is Zuni, where Lieut. Frank H. Cushing lived so long, learning something of the inner life and history of this interesting people. Laguna is the oftenest seen, and yet, perhaps, the least known of any of these three pueblos. It stands on a slight sandstone eminence, above the Santa Fé Railway, and overlooking the muddy San José Creek. As you walk up from the railway station over the bare sandstone, you see where the passing feet of the In-



PAISANO, GOVERNOR OF LAGUNA.

[1] The illustrations used in connection with this article are all copyrighted by George Wharton James.



LAGUNA, NEW MEXICO.

dians for many centuries have worn a path, six inches deep, and more in places, in the solid rock. You pass, to the right, the village reservoir. This is not an excavated spot like our city reservoirs, but a natural receptacle hollowed in the sandstone by the erosive forces of nature. It is about one hundred and fifty feet in diameter, surrounded by a rude wall, and entered by two gates. The sandstone bed of the reservoir is perfectly clean, and is in its native hillocky and seamed condition, irregular and uneven, but all the seams, or little channels, terminate in one of three deeper hollows on the eastern side. Here, as the rain falls into this tiny watershed, all the water gathers, and with no possible source of contamination in this high altitude and clear atmosphere, it remains remarkably pure and sweet.

PUEBLO WOMEN GRINDING CORN.

The most prominent house, as we pass the reservoir and near the pueblo, is that of Paisano, the former governor of the Laguna Indians, who live in eight villages scattered over the whole of the Laguna Grant, the chief and parent of which is Laguna. The whole tribe numbers, so I am told, about twelve hundred souls. Paisano is a tall, well-built, dignified Indian, unable to speak a word of English, but he talks Spanish, or Mexican, with fluency. His house is a long, white building, with a commodious portico and retaining wall in front, which rises from the slope of the hill below. It surrounds a small patio, or inner court, from which you enter a neat, clean, commodious storehouse. Hearing a grinding noise accompanied by the gentle and melodious voices of women, I quietly entered the storehouse, and there found Paisano's wife, his son's wife, and a woman friend engaged in grinding corn. The instrument with which they grind is called a *metate.* Oftentimes one may see four metates permanently fixed in a box-like arrangement, each metate in its own box, and so placed that the grinders can kneel at the rear, in slight elevation, and thus press more firmly upon the rock as they grind the meal. The first metate is very coarse, the second a little finer, the third finer still, while the last makes the flour almost as fine as any modern mill. The grinding is done by holding an almost flat piece of coarse rock across the metate, or rock slab, which is tilted to an angle, and working it up and down, placing a handful of the grain between the two stones as the up-and-down motion continues. The corn and wheat so ground are baked into bread of a variety of styles. Sometimes it is mixed with ground red *chillies*, which

are by no means "chilly" to the taste, a little salt and water, and then rapidly rubbed over a hot stone. The result is a fine wafer-like bread, a number of layers of which are placed together, folded, and thus served. Tortillas are made of flour, water, and salt. When well kneaded, a piece of the dough is patted, worked, and pulled until it is as thin as a wafer and as large as can be handled. I have seen one from fifteen to twenty inches in diameter. Thus flattened, the dough is dexterously thrown upon a large, flat, hot rock, or a hot sheet of tin or iron, and in a few moments is ready to turn. This is the way the Indians I have seen prefer to make their tortillas. The Mexicans often make them smaller, but much thicker.

PUEBLO WOMAN BAKING BREAD.

Much of the Indian's bread is baked in the large outdoor ovens, of which there is an accompanying picture. These ovens are made of stones and adobe, with an adobe floor, and a tiny opening at the top for a chimney. When the bread is ready to bake, the housewife lights a fire in the oven, and as soon as the wood is reduced to ashes, she scrapes everything out, takes a wet mop or "swab," and cleans out the inside, throwing in a few handfuls of sand to help out the scouring process. The bread is then placed on the oven floor, the front opening closed by propping up against it a slab of stone and sealing it with clay, and thus it remains until the baking is complete.

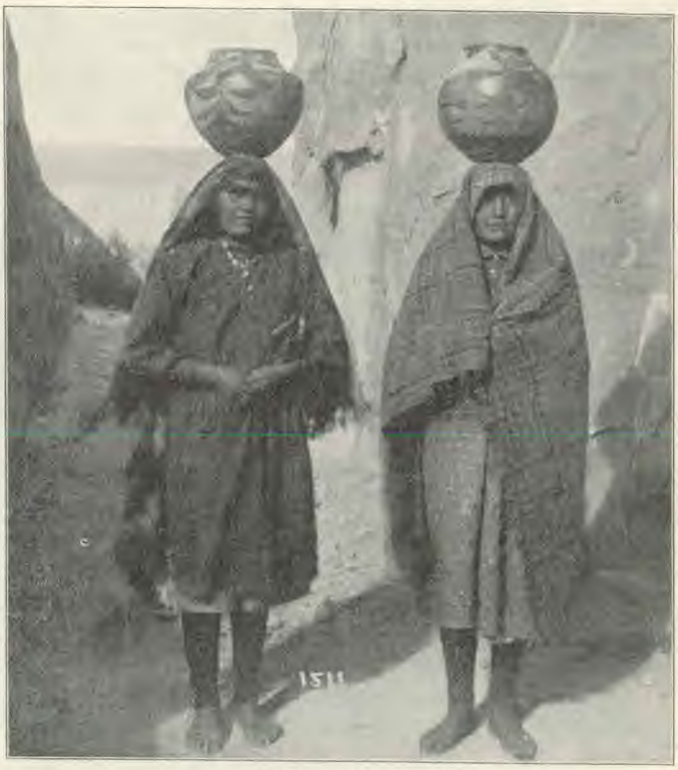
The major portion of the Laguna houses are built of flat sandstone rocks, laid in a kind of adobe mud or cement, and while many of them are connected, they are not "community houses," as at Taos. Irregularly built, one must wander about in a maze of roofs, streets, alleys, plazas, churches, and front yards, finding it hard to tell where he is or whither he is going.

Many of the young Laguna Indians of both sexes have attended school at Carlisle, Pa., or Albuquerque, N. M., and they speak and write English fairly well. The houses of these young people are generally well kept. Many of them are married, and have houses of their own, or they live with their parents, and thus improve upon the housekeeping plans of the latter. As a rule, benches are found on one side of the rooms, on which are placed the mattresses and blankets, these forming the bed on the floor when night comes. The floors are of adobe, which, wher broomed clean, and then sprinkled with water, make quite a tolerable pavement. In the corner is the quaint fireplace, placed anglewise, with a simple little mantel. The wood is generally stacked upright in these fireplaces, and thus burns more freely, as

there is no grate, and no "dogs" are used to raise the wood from the hearth.

In some of the houses glass windows have been introduced, but in many, large and small slabs of selenite or mica answer the purpose. The doors are heavy and clumsy, most of them swinging on pivot holes made in the upper and lower casings of the framework, the hinge side of the door having projecting ends,— top and bottom,— which are pointed to fit the pivot holes before mentioned.

The women, as well as the men, are straight, lithe, and active, a little flat-faced, with large brown eyes and swarthy skin. As the women of the Orient carry burdens gracefully and easily upon their heads, so do these women. A tinaja, or olla, full of water is placed upon the head, and is carried, apparently without effort, wherever required. The dress they wear is a square, home-woven piece of cloth, generally dyed a dark blue, called *jot-sitz*. It is simple and easy to put on, and exceedingly picturesque. It reaches a little below the knees. The lower portions of the legs are wrapped around and around with wide swaths or strips of buckskin, the last one being tied at the knee.



ACOMA WATER-CARRIERS.

Many of them are devout Catholics, but combined with their religion are many strange and singular superstitions, one of which is connected with their rain and water supply, and is associated with the prayer spring on Mount San Mateo.

Of course, in this brief sketch I have outlined only a very small portion of the life and habits of the Laguna Indians. With many differences in small matters and also in language, the life of the Acomas and the Zunis is much the same.

Hearing of their tradition and superstition about the prayer spring on the summit of Mount San Mateo, I determined to make a visit to it. Obtaining the services of a Mexican as a guide, we started early one morning, on horseback, up the San Mateo Cañon. Past springs and babbling brooks, through groves of pine, fir, cedar, cottonwood, and aspen, we rode, ascending all the time, until we came into a region of grassy parks, which continued all the way to the highest peaks. These were carpeted with rich, tall, fine grass, that our horses bit at with avidity as we

rode along. After three hours' climbing, we came to a saddle which connected one of the lesser with the main peaks, and here our horses were left, as the remaining part of the journey had to be made on foot. It was not a long but a rather steep climb ere we stood on the summit, by the side of the monument of rude stones erected by the U. S. Government Survey. What a sublime panorama was offered to our gaze! To the north a severe rain-storm was raging, while to the northeast the long line of the Sierra Santa Fé was presented. To the east was the Sandia range above Albuquerque, and bearing southward the Manzana range, while to the direct south were the Sierra Socoro and the Sierra Magdalena, standing bold and clear against the noonday sky. Westward, the Zuni range, flanked by another severe storm, nearly completed the circular survey, except for a portion of the Sierra Chusca and the Chaca Mesa, which were now visible toward the north.

Grand and majestic as this outlying circle of mountain ranges, seventy-five, one hundred, and one hundred and fifty miles or more away, certainly was, it embraced a variety of "country" that words fail to describe. Yonder, near Santa Fé, was the Cerro Cabazon, a peculiar rounded rock which stands like a giant sentinel, solitary and alone. A score or more of such rocky masses were seen, some of them shaped like a shoemaker's awl, and one of which, quite near to view, bears that name; viz., Cerro de la Alesna. Southward is the Mesa Encatada, the enchanted mesa, where tradition says the Acomas once made their home. The present pueblo is also dimly discernible, as is that of Laguna and many of the neighboring villages. Cañon after cañon, streams, tiny lakes, farms, ranches, foot-hills, forests, are all combined to make a picture of supreme loveliness.

But now our attention is turned to the mountain top itself. Here, seven feet from the monument, is a rock-lined hole, about five feet deep, which ordinarily would have no attraction for us, but, knowing as we do that this is the prayer spring of the Indians, we proceed to examine it most carefully. At the time of our visit it was dry, but I am told it often sends forth a supply of pure, sweet water.

Annually, in the early spring, the Pueblo Indians visit it. They come to worship, bringing votive offerings of corn, wheat, etc., and after indulging in sacred ceremonial dances, they plant a number of their prayer-sticks, or *bahos*, all around the spring, in order to remind the god of the rain and of water that their prayers have been duly offered. Then, digging a small channel from the spring in the direction of their particular home, and lining its side with prayer-sticks, they leave the mountain top, content that all needful supply of water will be given to them during the year. Should they, however, for any cause turn and look back in the direction of the spring, as they journey homeward, ill luck will follow them for the space of seven long years.

We found three of these "direction channels" at the spring, one aiming toward Laguna, one toward Acoma, and the other toward Zuni, thus showing that each of these three peoples had sent a praying contingent to ask for "mucha agua" for the ensuing year.

In searching for prayer-sticks we found a large number of very small and fine turquoise beads, also some red and white ones of glass, together with several pieces of coral, obsidian, quartz, etc., bored as beads.

The prayer-sticks used at this spring are generally made of two rounded sticks of wood, two inches long, to which feathers are tied with cotton strings. These are made by the "Shamans," or medicine men, prayed over, breathed upon and smoked by them, and are then ready for use.

# DR. ALCOTT AS AUTHOR AND HUMANITARIAN.

BY HIS SON, WM. P. ALCOTT.

## HIS BOOKS.

THERE is scarcely an old house in New England in which one or more of Dr. Alcott's one hundred and thirteen publications can not be found. Though these volumes are not often read in our time, they have, of course, done their work for human progress. Work was certainly put into them. In "The Youth's Book on the Hand" the author, when illustrating the rapidity and number of muscular movements, says: "During some of the early years of my life I wrote occasionally ten thousand words in a day." This must have been, in part at least, the easier work of copying manuscripts, yet it illustrates the writer's industry, as well as his facility in book-making.

Readers need not expect a specific account or even a list of all these volumes. Nearly sixty different ones may be found in the libraries of Boston, and investigators of these subjects can easily find light. It is my purpose, here and now, merely to give hints as to the names and contents of the more notable volumes. I shall follow the order of publication, in general, any deviation from this being indicated by the dates given.

In 1832 and 1833, as assistant of Wm. C. Woodbridge, Dr. Alcott edited the *Juvenile Rambler*. This was a children's weekly paper designed largely for supplementary reading in schools, and was, I think, the first paper of that kind published. "The Young Man's Guide," 1832, more than any other work, gave my father his reputation as an author. It passed through twenty-two editions, and "being the first popular book of this class that was perfectly reliable, and which expressed in a lucid manner, and in such a style as not to offend, some of the physiological dangers of our young men, was written throughout in such a spirit of fatherly kindness, and such a simple style, as to win attention and secure an extensive sale." The suggestions of this book, and similar warnings from Sylvester Graham and others, led young men to seek my father's help, in increasing numbers, till his work for them formed no small element of his burden and his usefulness.

"A Rational View of the Asiatic Cholera, by a Physician," was an anonymous pamphlet of 1832. By myself and others it has sometimes been confounded with "A Lecture on . . . Spasmodic Cholera," by S. Graham, first published in 1833. My father's essay had no reference to vegetarianism, while Mr. Graham's made the first strong argument, in this country and century, for that reform.

For four years, beginning with 1833, my father was associated with S. G. Goodrich in the "Peter Parley" books and magazines. One had the name, the other did most of the work. In 1834 appeared another notable book, "The House I Live In," a small popular physiology. The title was then original, if not enigmatical. Ten editions were printed, and it was translated into other languages. It was designed in part for a class-book, and was sometimes thus used.

From 1835 to 1842 were issued monthly "tracts," essentially small magazines, containing a variety of articles upon health and other reforms. These were subsequently sold, in bound form, under such names as "Library of Health," "Moral Reformer," etc. In 1836 appeared "The

Young Mother," the first of numerous titles beginning with "young," as "Young Wife," "Young Housekeeper," "Young Husband." "Tea and Coffee," a small volume of 1839, passed through many editions, and is still printed and sold by a New York firm.

"Vegetable Diet," a duodecimo of three hundred and twelve pages, appeared in 1853, and was one of the earliest extended arguments for the disuse of flesh-food. It is based on the answers of a large number of physicians and other prominent men to a list of questions and upon the author's own experience, also bringing together a large amount of scientific and ethical testimony.

We pass in silence numerous books on health and morals, nearly fifty Sabbath-school volumes, mostly small, and various literary ventures.

"The Physiology of Marriage," 1855, ran through fifteen editions, and was followed the next year by his last completed volume, "The Laws of Health," a solid book of four hundred and twenty-four pages in which are categorically given our author's final judgments. One volume, nearly finished, appeared after his death — a collection of experiences, observations, and suggestions drawn from all parts of his life. The title is, "Forty Years in the Wilderness of Pills and Powders."

### BREVITY OF HIS LIFE.

On his own theory, Dr. Alcott should have lived much longer. He was wont to say that men should reach at least one hundred years, as suggested in the Bible, and it would seem that one whose ideas and habits were so excellent should have come nearer that mark.

But it has been seen that the experiences of early life had weakened his constitution. Probably, also, he "took life too seriously," for we are all pretty sure to err on one side or the other. Unfortunately, my father had little opportunity to *play* when a boy, and he never learned how. He often expressed a desire to wear out rather than rust out, or to die with the harness on.

In November, 1857, while Dr. Alcott was getting apples into the cellar, a barrel threw him over and he fell upon one limb. The resultant fracture confined him to his bed till spring, and he was never able to invigorate himself by pedestrian trips as fully as before. The suffering and the inability, for so long a time, to exercise as he had been wont were a serious blow to his health. Old lung troubles revived. These considerations may throw light on his decease at not quite sixty-one.

As he had often requested, an examination of his lungs was made after death. But the doctors for some reason did not settle certain questions he hoped the autopsy would answer. He also believed strongly that we should not shrink from benefiting men in such ways.

### HIS UNSELFISHNESS.

Beyond any man I ever knew, my father had a passion for doing good. Even as a boy this was seen in his efforts to gather a juvenile library and in other ways encourage useful reading. His altruism, even at that time, extended beyond human beings. He says: "Once I had been addicted to trapping, snaring, angling, *et cetera*, but moral considerations, at the early age of eleven, had compelled me to abandon all such cruel sports forever."— "*Rambles at the South.*"

School-keeping was chosen, in large part, as a means of usefulness. He was ready to teach for little or nothing. In 1829, when he had spent three years in successful medical practise in a more populous community, he returned to this former employment at common prices. He gives ("Confessions") as the first reason for this: "My mind was prone to

dwell, with great pleasure, on the idea that I was born for the purpose of improving the condition of my fellow men." Though he explained to the people his benevolent desires, some strongly suspected mental aberration in one who could "descend" from a profession in which he was "doing well," and "making money"— as was supposed — to teaching at fifteen dollars a month, boarding around, and keeping no horse! But as a student and physician he had felt more than ever "the indispensable necessity of improving, to the highest possible pitch, every form of elementary education and instruction."

In this school he was able to try many methods, then new, if not original, now familiar enough. The term was successful, but such were his labors for his pupils by day and night, such were also the influence of opium using and other physical sins, that ill health again "called him down."

But whether teaching or "physicking," in all these years his dream and efforts were always to make his beloved Wolcott, though rude, unenlightened, and obscure, another Switzerland or Ban-de-la-Roche. Therefore he co-operated with others in all possible ways, even superintending a Sabbath-school while professedly a free-thinker. Singularly enough, at the same time he was most earnestly and unselfishly seeking to spread his religious errors, though doubtless not in the Sabbath-school. Indeed, at last, the missionary apathy of liberal Christians in general seems to have awakened doubts as to their foundations.

The congruity of all these facts is not plain. But I know that in later years this beneficent spirit struck at deeper roots of human evil and found a higher joy in the personal sympathy and aid of Jesus Christ. Thus unselfish was all his life, never seeking as first ease, money, reputation, office. His meat and drink were to do good — to a child, a despised foreigner, a pauper, a dumb animal. He brought on the pleurisy, which resulted in death, by needless efforts for usefulness, when already weary and heated by similar toils. His dying message to his absent son, alas! but partially followed, embodied what he considered the one secret of worthy, Christian, blessed living: "Tell William to live for others, not for himself."

In all this, I should feel my testimony prejudiced and unreliable did not more impartial judges indorse me in calling his life a wonder of self-forgetfulness. Surely he was one through whom God wrought for the welfare of man.

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Now is the high-tide of the year,
And whatever of life hath ebbed away
Comes flooding back with a ripply cheer,
Into every bare inlet and creek and bay;
Now the heart is so full that a drop overfills it,
We are happy now because God wills it;
No matter how barren the past may have been,
'Tis enough for us now that the leaves are green.

— *Lowell.*

# THE EFFECT OF ALCOHOL UPON THE FUNCTIONS AND STRUCTURES OF THE STOMACH.

BY W. H. RILEY, M. D.,

Superintendent of the Colorado Sanitarium, Boulder, Colo.

IN considering the effect of alcohol and alcoholic liquors upon digestion and the digestive organs, we may deal with our subject under two general heads: —

1. The effect of alcohol, when present in the stomach, on the digestion of food, and —

2. The effect of alcohol upon the structures of the stomach and other digestive organs.

The first of these two divisions naturally falls into the following sub-heads: —

(1) The changes produced on the food by the action of alcohol.

(2) The effect of alcohol upon the secretion of gastric juice.

(3) The influence of alcohol upon the chemical changes in food during digestion.

(4) The influence of alcohol upon absorption.

(5) The effect of alcohol upon the muscular movements of the stomach.

We will first consider —

*The Changes Produced upon Food by the Action of Alcohol.*

Without any reference to the effect alcohol may have upon any of the digestive processes, such as the secretion of gastric juice, the chemical changes taking place in food on account of the gastric juice, etc., it is well to consider briefly the effect alcohol has upon food alone and by itself, independently of the natural digestive fluids or any artificial digestive agent.

One peculiar physical property of alcohol is that of abstracting water from tissue or any other substance that may contain water. This property is often made use of in the arts. Likewise when alcohol is applied to the skin or mucous membrane, it abstracts water from these tissues, and leaves them white and dry.

It is a well-known fact to workers in the physiological and chemical laboratory that alcohol coagulates albumen, such as the white of egg. If the white of egg be mixed with water so as to form a watery solution, and to a small portion of this some alcohol be added in a test-tube, it coagulates the albumen, and produces a white, semisolid mass known as coagulum. The stronger the alcohol, the more pronounced, of course is the coagulation of the egg albumen.

The same thing will happen if the albuminous part of meat be put into a solution of water, and alcohol added to this. The alcohol will coagulate the albuminous part of the meat the same as it did the albuminous part of the egg.

Alcohol and alcoholic liquors have the same effect on vegetable albumen, such as is present in wheat, oats, barley, peas, beans, and other cereals and foods containing vegetable albumen. Alcohol coagulates all kinds of albumen, both vegetable and animal.

This coagulation is undoubtedly accomplished through action of the alcohol in abstracting water from the food substances. The only difference is that when a large amount of alcohol is added to the albuminous solution, it coagulates a larger amount of the food substance, while when only a small amount of alcohol is added, a less amount of albumen is coagulated. However great or however small the amount of alcohol added, the fact still remains that alcohol does coagulate this class of food substances.

It is a well-known fact also to the worker in the physiological laboratory that all coagulated albumen is more difficult to digest or dissolve with artificial or natural gastric juice than is albumen in its fluid or natural condition. Now since alcohol coagulates albumen, and coagulated albumen is more difficult to digest than albumen not coagulated, or in its natural condition, it follows of course that alcohol, so far as it affects albuminous or nitrogenous food, is a hindrance to their digestion. In fact, all experiments, which have been carried on over and over again in almost every civilized country, prove this fact. So far, then, as the effect of alcohol upon albuminous foods is concerned, we can say with all positiveness that alcohol puts the food in a condition which makes it more difficult to digest, and therefore in the same degree retards its digestion, either in the test-tube in the laboratory or in the stomach where alcohol and the food are together present.

*The Effect of Alcohol upon the Secretion of Gastric Juice.*

The gastric juice, as the reader doubtless knows, is secreted by glands which lie in the mucous membrane of the stomach. The active principles of the gastric juice are hydrochloric acid and pepsin. In a healthy stomach hydrochloric acid is present in the proportion of .2 per cent., which, when expressed in figures, looks like a very small portion, but which nevertheless gives to the gastric juice a decidedly acid reaction.

If alcohol by its presence in the stomach causes any change in the secretion of gastric juice, the change must be made in one of the following ways: (1) An increase in the quantity with or without change in the quality. (2) A decrease in the quantity with or without change in the quality.

The experiments along this line have been conducted on the lower animals, especially the dog, and on man.

The investigators with reference to this part of our subject are divided in their opinion into two classes: One class claims that alcohol and alcoholic liquors, when introduced into the stomach of the lower animals, as the dog, cause an increase in the gastric juice of the stomach; the other class, whose experiments have for the most part been conducted on the stomach of man, believes that alcohol and alcoholic liquors in the stomach diminish the secretion of the gastric juice. The writer, in attempting to arrive at the truth with reference to this particular point, has taken pains to study carefully the work of these various investigators, and to notice the conditions under which their work was conducted; besides this, I am able to bring to bear upon this question a large amount of personal experience and observation relating to the effect of alcohol and alcoholic liquors upon the secretion of the gastric juice in man. These personal observations have been made on men, the contents of whose stomachs have been analyzed,— men who, in a large number of cases, have been addicted to the use of alcohol in varying degrees, from a comparatively small amount taken occasionally to a considerable amount used habitually.

Although the reports of these investigators may be somewhat at variance, yet it is but just to say that these experiments were made under different conditions, and consequently would not allow of comparison. When all the facts are taken into account, it will be seen that the difference in opinion is not so great as might at first be thought from a brief statement of the results attained by the different investigators. We shall not burden our readers by entering into a lengthy report of the work of these various investigators, but shall consider the results of one or two representative men who have done considerable in this field.

Professor Chittenden and Dr. Mendel, both of Yale University, have for some time past been carrying on a series of investigations to ascertain the effect of alcohol upon the digestion of food, and also, more recently, the effect of alcohol upon the secretion of gastric juice; and it is the result obtained by them with reference to the effect of alcohol upon the secretion of gastric juice that we shall now consider.

Their experiments were conducted upon dogs. The animal was prepared by making an opening through the abdominal wall into the stomach, and in this opening was inserted a tube through which water, alcohol, or alcoholic liquors could be injected or withdrawn. The experiments were made when the stomach of the animal was empty. A series of experiments on what are termed control animals was conducted on a number of dogs, where a certain amount of water was injected into the stomach of the animal, and after a certain time the animal was killed and the contents of the stomach were analyzed. Another series of experiments was made in which the fluid injected consisted of an alcoholic solution containing various percentage amounts of alcohol. In this series of experiments the contents of the stomach were subjected to a careful chemical analysis after killing the animal. The results of this series of experiments upon different animals were compared with the first series where water alone was injected. Another series of experiments was carried on in which alcoholic liquors, such as sherry, wine, whisky, Hockheimer beer, claret, lager beer, etc., were used in the place of alcoholic solutions. These different experiments were compared, and it was found that both in the series of experiments where alcohol and alcoholic solutions were injected into the stomach, and in the series where alcoholic beverages were used, the total amount of fluid in the stomach, the total acidity, the free hydrochloric acid, the combined hydrochloric acid, and the salts were all increased over and above those cases in which water alone was injected.

One might think at first glance that in this series of experiments, alcohol was having the best of the question, and that this might be used as an argument in favor of the employment of alcoholic liquors in cases of indigestion, etc. But we must not be too hasty in our conclusions. We are willing to grant, in fact we believe, that alcohol, even in comparatively small amounts, when introduced into an empty stomach, will, by its irritating properties, cause for a time an increased flow of the gastric juice. This is really due to the irritating effect upon the glands of the stomach, and is the result of an effort on the part of nature to protect the stomach against the poisonous and baneful effect of alcohol. The alcohol irritates the gland, and the gland discharges itself in the form of a secretion.

There are several points, however, we must look into carefully. In the first place, we wish to emphasize at the outset that simply the discharge of a gland is but one side of its active life. The life history of a secretory gland is divided into two periods: One period in which it is active in the way of discharging itself and secreting the gastric juice; and the other period in which it is recharging and rebuilding itself preparatory to a second discharge of fluid. It is evident that in order that the gland carry on its work properly, both processes; namely, those of discharging and recharging, must follow each other regularly, and in a proper manner.

So when we introduce alcoholic solutions into the stomach of an animal and note the increase in the secretion for a single time only with each animal experimented upon, as was the case in Professor Chittenden's experiments, we are dealing

with but one side of the question, and that in a very meager way. To determine whether the alcoholic solutions really increase or decrease the secretion of gastric juice in a single animal, it will be necessary for us not simply to make one experiment upon each animal, but to follow this up with a series of experiments upon each animal, and several animals. Professor Chittenden's experiments appear to us faulty, in that the alcoholic solutions were injected only a single time into the stomach of each animal; and although his experiments were conducted upon several different animals, yet this series of experiments deals with but one side of the question; namely, that of the discharge of the cell, and has no reference whatever to the after-effect on the ability of the glands to rebuild themselves and prepare for a future discharge, and therefore they do not answer the question as to whether the alcoholic solutions or liquors increase or decrease the ability of the gland to secrete gastric fluid.

On the other hand, from our own personal observation of men who have been addicted to the use of alcoholic liquors in small and large quantities, and where we have taken pains to analyze carefully the contents of the stomach, we have almost invariably found that in those cases where alcohol has been used, even in moderation, for some time, the normal secretion of the gastric juice has been lessened so that the persons were suffering from hypopepsia, or a deficiency in the secretion of the gastric fluid and hydrochloric acid; and in some severe cases, from apepsia, a complete absence of the normal acid of the gastric juice.

More than this, if we follow Professor Chittenden and Dr. Mendel through their course of experiments, we shall see that although granting that alcohol and alcoholic liquors do increase the flow of the gastric juice of the stomach, another series of experiments made by these investigators with reference to the effect of alcoholic liquors upon digestion, shows unmistakably that digestion was hindered on account of the presence of alcohol in the stomachs of the animals experimented upon. We can not go into details in this series of experiments. We may, however, refer to one or two for the sake of comparison.

(To be continued.)

## THE GRASS.

THE grass so little has to do,—
A sphere of simple green,
With only butterflies to brood,
And bees to entertain;

And stir all day to pretty tunes
The breezes fetch along,
And hold the sunshine in its lap
And bow to everything;

And thread the dews all night, like pearls,
And make itself so fine,—
A duchess were too common
For such a noticing.

And even when it dies, to pass
In odors so divine,
As lowly spices gone to sleep,
Or amulets of pine.

And then to dwell in sovereign barns,
And dream the days away,—
The grass so little has to do,
I wish I were the hay!

— *Emily Dickinson.*

# THE FEEDING OF CHILDREN IN HEALTH AND DISEASE.

BY A. G. HENRY, M. D.

OF all the members of the animal creation, civilized nations furnish the only examples with which we are acquainted, the half of whom are entirely successful in making a specialty of dying before they are seven years of age.

The principal agents in this wholesale slaughter of the innocents are not only the kinds of food that are dealt out to the little ones, but fully as frequently the times at which these foods are given.

With the infant at the breast the kind of food is usually all right. If the child is not breast fed, there are many excellent foods on the market which, as well as cow's milk, are good if properly prepared. As regards frequency of feeding, I should not much exaggerate should I state that children are always fed too often.

Although perhaps it might not be necessary or advisable to follow the pace set by the Rochester Foundling Asylum a number of years ago in the matter of infrequent feeding of children, even that plan would be preferable to the methods commonly employed. For one whole year in the asylum referred to even the youngest infants were fed but three times a day, with the result that for that whole season, and for the first time in the history of the institution, no deaths occurred from cholera infantum or allied troubles of stomach or bowels.

For the first three months of its life the child should be nursed or fed not oftener than every three hours during the day and once or twice at night. The intervals between feedings should now be gradually lengthened until by the fifth month it should receive nourishment but once in four hours during the day and once at night.

After the sixth month no food should be given at night, and by the end of the ninth month but three times a day.

The foregoing directions, of course, refer to the feeding of children in health. And I would state in this connection that if so fed, they will rarely, if ever, have any disturbance of stomach or bowels. But it is in disease that we get the most disastrous results from feeding. And here it is that the "coddling" treatment plays such havoc with the little ones.

The child does not feel very well, and refuses to eat. The poor thing is coaxed by savory and unrighteous dishes to take a little food. As he does not eat much at a time, he must have it often. When he persists in getting sicker, as he certainly will, aided so efficiently by these methods of treatment, he soon begins to reject his food — the only recourse he has against the offending materials taken.

The proud mother becomes alarmed at this new symptom, and feels sure that the loved one will be taken from her if some nourishment is not speedily kept down; hence the frantic but futile search for and trials of something that will stay on or in the stomach.

All the child wishes is cold water, but it is given little if any of that. Why?— Because it vomits it up, and "there is no food in water, anyway." Now here is where I have to break entirely with the laity and with many of the profession. Water, pure cold water, is the best medicine, and affords the best of nourishment, and is the only thing that should be given for a time in the acute diseases of children, attended as they usually are by fever and often by nausea, vomiting, and bowel

disturbance. Water can be given advantageously as frequently and in as large quantities as the child wishes. When the fever has abated and the digestive organs have regained their normal state and are in a condition again to digest and assimilate food, then, and not till then, can it be given safely. The length of time that a child can profitably be kept wholly on a water diet will depend much on the disease we are treating and the symptoms of the individual case,—from a part or the whole of a day in the slighter ailments to from one to two weeks in the more severe cases of typhoid fever and some of the dysenteries. There is with those who have long followed these methods, a feeling of certainty that nothing can shake, as to a favorable outcome in cases treated along the lines thus indicated.

## THE CALF PATH.

ONE day through the primeval wood,
A calf walked home, as good calves should:
But made a trail all bent askew—
A crooked trail, as all calves do.

Since then two hundred years have fled,
And, I infer, the calf is dead.
But still he left behind his trail,
And thereby hangs a moral tale.

The trail was taken up next day
By a lone dog that passed that way.
And then a wise bell-wether sheep
Pursued the trail o'er vale and steep,
And drew the flock behind him, too,
As good bell-wethers always do.

And from that day, o'er hill and glade,
Through those old woods a path was made,
And many men wound in and out,
And dodged and turned and bent about,
And uttered words of righteous wrath,
Because 't was such a crooked path;
But still they followed—do not laugh—
The first migration of that calf,
And through this winding woodway stalked
Because he wobbled when he walked.

This forest path became a lane,
That bent and turned, and turned again;
This crooked lane became a road,
Where many a poor horse, with his load,
Toiled on beneath the burning sun,
And traveled some three miles in one.

And thus a century and a half
They trod the footsteps of that calf.

The years passed on in swiftness fleet,
The road became a village street,
And this, before the men were ware,
A city's crowded thoroughfare.
And soon the central street was this
Of a renowned metropolis.

And men two centuries and a half
Trod in the footsteps of that calf.
Each day a hundred thousand rout
Followed the zigzag calf about;
And o'er his crooked journey went
The traffic of a continent.
A hundred thousand men were led
By one calf near three centuries dead.
They followed still his crooked way,
And lost one hundred years a day;
For this such reverence is lent
To well-established precedent.

A moral lesson this must teach,
Were I ordained and called to preach;
For men are prone to go it blind
Along the calf paths of the mind,
And work away from sun to sun
And do what other men have done.
They follow in the beaten track,
And out and in, and forth and back,
And still their devious course pursue,
To keep the path that others do.

But how the wise old wood-gods laugh,
Who saw that first primeval calf!
And many things this tale might teach—
But I am not ordained to preach.

—*Selected.*


## EXERCISE FOR THE AGED.

OLD age is due to changes which take place in the arteries. The most important of these are a general contraction of the blood-vessels, a thickening and loss of elasticity of their walls, and especially a shrinking in the size of the pulmonary artery. In consequence of these changes the blood supply of every organ is to some extent diminished. Recent observations have shown, however, that the arteries which convey the blood to the brain retain their natural size and take on these changes much later than other parts of the body. Hence it is that the brain maintains its integrity to a more advanced age than do most of the other organs. This very fact shows the value of exercise in delaying the approach of old age. The average brain does more work as years advance, while the average body does less. It is only the brain that has been accustomed to constant systematic activity that is exempt from the senile changes that occur in other parts. A habitually inactive brain always gives early evidence of mental decay.

These degenerative arterial changes which take place in old age result in the loss of the transparency of the tissues as well as in the loss of suppleness and elasticity. Live and highly vitalized tissues are transparent, or nearly so. In advanced age the skin has a muddy appearance. The eye loses its natural luster, owing to the dinginess of the sclerotica and the diminished transparency of the humors of the eyeball.

In the museum at Stockholm there is a very interesting collection of eyes, taken from human beings at different ages. They are cut across in such a way as to exhibit plainly the internal and the external eye. In looking at these specimens it is easy to observe that the eye of the young child is as transparent as water; that of the youth is a little less so; in the man of thirty the eye begins to be slightly opaque; in the man of fifty or sixty it is decidedly opaque, and in the man of seventy or eighty it is dull and lusterless. This gradual development of opacity is due to the increase of fibrous tissue and the deposit of waste matters in the eye.

The degeneration of the eye is simply illustrative of the change that takes place in the whole body. There is the same loss of transparency in the muscles, the bones, the glands, the brain. It is due to the imperfect action of the eliminative

organs, giving rise to the accumulation of débris in all parts of the body. In early life the pulmonary artery is larger than the aorta. This facilitates the circulation of the blood to the lungs, and secures perfect aëration and purification of the blood. With advancing age the pulmonary artery diminishes in size, becoming smaller than the aorta, and thus the blood is less perfectly oxygenated than in youth, and the tissues are less highly vitalized.

The blood-vessels have muscular fibers in their walls. When the individual begins to grow old, this muscular tissue begins to disappear, and fibrous tissue to take its place. The fibrous tissue has an important work to do. It holds in place every cell, muscle, and vein. It thickens the walls of the blood-vessels so that they lose their elasticity and their power to contract. The channel through which the blood flows becomes smaller. When the heart contracts, and the blood current is sent on, the arteries are no longer stretched so as to be able to contract with vigor, but remain rigid. They lose their strength and capacity for resisting pressure. Ultimately the small arteries become withered until the blood can not get through at all. This withering of the arteries results in the shrinkage of all the organs of the body; the lungs contract; the heart becomes smaller; the kidneys are shriveled; the skin undergoes a sort of fibrous change, and loses its bloom; the fibrous tissue becomes calcareous, or chalky.

The right kind of exercise, however, can do much to modify and delay all these changes. It counteracts better than any other agency the tendency of the skin, liver, kidneys, and other eliminative organs to become inactive. It arouses the heart to increased activity, thus pumping the blood-vessels full of blood, distending them to their utmost capacity, and thereby antagonizing the process of shrinking.

But the old person's heart being weak, when he undertakes too violent exercise, that organ can not send enough blood to the muscles, and the latter quickly become fatigued. The lungs and the kidneys, not being able to work as vigorously as in early life, are unable to eliminate the ordinary waste products as they are formed in the body, hence an excess of tissue poison is always present in the body of the old man, so that a smaller quantity of the peculiar poison resulting from muscular overwork is sufficient to produce such a degree of autointoxication, or systemic poisoning, as to cause fatigue and shortness of breath. Hence the exercise of old people should be of the most moderate character. All straining and violence must be avoided, and all such exercises as produce palpitation of the heart or breathlessness.

It must not be expected that the old man's muscles can be made to grow larger by exercise. All that he can hope to do is to improve their quality and to preserve to some degree their elasticity and strength. Neither can the chest capacity be increased to any great extent. But by a large amount of very moderate exercise the old man can greatly improve the flexibility of joints that have become rigid. If the joints have been neglected until all their articulating surfaces have been diminished, their flexibility can not be greatly increased. But by persistent and sensible treatment some slight flexibility can be secured; and it is very important to preserve the flexibility, especially of the spine, so far as possible, because every gain in the flexibility of the spinal column gives increased vigor and strength to the muscles, and helps to antagonize those changes which are almost universal in old age,—the breaking-down of the abdominal organs, prolapse of the stomach and bowels, and the general relaxation of the abdominal muscles.

For another reason the aged should be

careful not to take too vigorous exercise. The lessened sensibility which comes with old age renders the old person liable to consecutive or secondary fatigue,—that is, he is likely to feel the consequences of excessive exercise twenty-four or forty-eight hours afterward rather than at the time it is taken.

Walking is an excellent exercise for the old, because a large amount can be done without causing immoderate excitement of the heart and lungs.

We are learning more and more to reckon age, not chronologically, but physiologically. By rational exercise, careful diet, and suitable occupations, the man who is chronologically old may preserve a physiological middle age long past the time when he is ordinarily considered superannuated.

J. H. KELLOGG, M. D.

## ARTISTIC DRESS.

A GREAT many people think that it is absolutely impossible to make artistic dress at the same time healthful, while others hold the contrary opinion, that a truly healthful dress can not conform to artistic standards. It is our opinion that in the best sense of the words the two are really one, although it is possible to make a garment that is healthful without being artistic. It is not possible, however, to make a genuinely artistic dress that is not healthful.

A great many dress reformers have brought odium upon their work simply because they have ignored the essential union that exists between health and beauty. They have not laid too great stress upon health, for that would be impossible, but they have not sufficiently emphasized the element of grace.

We have reason to believe that "in the beginning" when the Creator had finished his work, the whole earth was beautiful. There was not an ugly or inharmonious feature. Even to-day, after the curse has rested upon the earth for six thousand years, we find abundant evidence that God himself has an intense regard for the beautiful in everything he has made. This is shown in the wonderful colors of the flowers, the foliage, the clouds, the sky; in the natural symmetry of plants and animals; in the variety and grace of bird and beast and man. Even the great rocks and the tiny pebbles exemplify the love of the Creator for beauty of form and detail. Hence we, in striving to find our way back to nature in all things physical as well as spiritual, can not emphasize too strongly the importance of combining the beautiful with the healthful, the artistic with the hygienic.

The Greek nation has always been looked upon as the one possessing the most delicate perceptions of the beautiful. The grandeur of the scenery of that picturesque country, the simple life of the people, and their love of nature, all tended to develop a rational conception of the beautiful in common life as well as in art and literature. Their worship was largely a belief in the growth of the spiritual through the development of the physical. This necessarily called forth a careful study of the human body. To the early Greek the ideal of physical beauty was found not so much in the expression of the face as in the harmony and strength of the entire body. Every line of the human form had a spiritual meaning, and each motion gave

utterance to a thought. The outward body was the expression of the inner man. It was from study like this that the best statues were produced.

In all ages and under all social conditions Greek draperies and Grecian costumes have held their own as combining, with peculiar felicity, grace and sense in dress. This is because the natural human form was taken as the basis or model for the dress. The Greeks had no conventionalized dummies, no wire outlines with wasp waists and exaggerated busts upon which to build up a fashionable gown. They took the unperverted natural body, and adapted the clothing to its evident requirements.

In these days, in trying to cultivate the truly artistic in dress we find two great drawbacks, a degenerate body and a degenerate taste. The average human form to-day does not abound in beautiful curves. Its natural suppleness has largely disappeared, angles have become prominent, and instead of grace and symmetry there are stiffness and deformity. It is almost impossible to make such a figure look artistic, whether dressed healthfully or not. The very first step toward artistic dress must therefore be an effort to correct physical defects, especially of proportion, attitude, position.

Again, we have so far departed from nature in our conceptions of the beautiful and harmonious that we can not trust our own judgment as to the really artistic. One evidence of this is the constant change in the public verdict as to correct and becoming dress. A costume which last year was pronounced "lovely," "so sweet and artistic," "perfectly charming," this year is ridiculed as "ugly," "ungraceful," "absurd."

The most artistic dress, however, is the one that drapes, protects, and warms or keeps cool a natural, undeformed figure. Artistic dress has nothing to do with corsets, bands, tight gloves or shoes, stiff, high collars, skirts drawn tight about the hips or made to flare out by heavy linings or hoops.

If we are ever to have a general and thorough reform in this matter, women as a class, indeed, men and women as a race, will have to wake up to its importance and to a realization of the fact that it is a question not simply of fashion and esthetics, but of the permanent well-being both of the present generation and of all who may come after.

ABBIE M. WINEGAR, M. D.

## LINES OF HEALTH AND DISEASE.

As the lamp gradually burns, there is left behind on the end of the wick sufficient ashes and soot so that if it is not trimmed occasionally, the flame will grow dim and finally become extinguished. The fire in the stove produces smoke, which, if it can not be carried off, will actually smother the fire; and the ashes which are left behind, if allowed to accumulate, will, in time, accomplish the same by shutting off the draft which is so necessary for the maintenance of the fire. In the same manner there are constantly accumulating in the blood of the human body, poisons and waste products resulting from tissue activity and from other sources. Diagram I illustrates this idea.

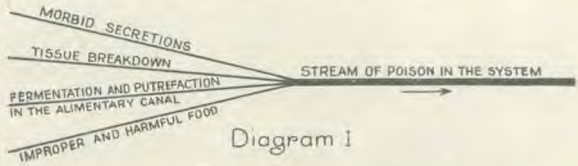


Diagram I

Unfortunately, the human body frequently has to contend not merely with the waste matters formed within, but with those that are taken in from without.

For instance, persons who eat game from which the blood has not been drawn, and which has been hung up exposed to the summer's heat in front of the meat market until it is in a state of semi-putrefaction, are virtually taking ashes right into their own systems. As the result of digressions from proper diet, more or less indigestion is produced, and the natural preservative ability of the digestive tract is overpowered, and it becomes a paradise for germs. Sometimes fermentation and decay take place more readily within the human body than they would outside. In that case the alimentary canal itself becomes a source of poison to the human system. Often in diseased conditions some of the various secretions of the body are either produced in excess, as the bile in some forms of jaundice, or actually become changed until they are a menace to the system itself. Hence, as illustrated in the diagram, there may be four sources of self-intoxication for the individual, and if these products are not promptly carried off by the lungs, skin, kidneys, etc., distressing symptoms will soon begin to manifest themselves in a variety of ways.

We may illustrate this relation in a normal healthy body by letting a straight line represent the line of health, and a wavy line the line of poisoning, as shown in Diagram II.

The latter line is wavy because at some times there are more poisonous substances formed in the body than at others, but so

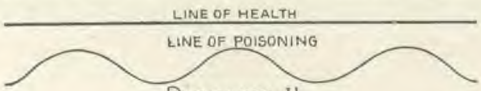


Diagram II

long as it is a safe distance below the health line, or, in other words, so long as only a very small percentage of poison is retained in the blood at any time, the individual may be in the enjoyment of good health and feel the vigor of life; but let him wander into forbidden by-paths where nature never intended him to go, let him forget to take the necessary exercise to help burn up these poisons (for Bouchard has shown by actual experiment that the excretions from the kidneys after a hard day's work are less poisonous when injected into the veins of a rabbit than those after a day of sedentary work), let him remain in a room that is laden with poisoned air, and there is immediate disturbance of the normal relation between these lines. How, then, can his lungs throw off their quota of impurities? To illustrate: Suppose that a room is full of smoke, and the door is opened into a hall that is equally full of smoke; it will take a long time to clear that room. So, if the air of a room is already nearly as full of poisonous products as the blood is, it will be difficult for the lungs to throw off waste matters. Under these

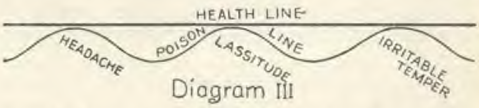


Diagram III

conditions, the poison line begins to approach the health line, and possibly to touch it at various intervals, as is illustrated in Diagram III.

Then the person begins to lose the sweetness and joy of life. It may be headache, lassitude, neuralgia, or mental depression to such a degree that he begins to suspect his family or the world at large of being against him. The only rational way by which such a person can be benefited is either to raise the health line by a vigorous culture of health, which means more favorable conditions, brisk outdoor exercise, perhaps dropping all care and going on an outing; or what is still better, to lower the poison line by ceasing to eat foods which contain these things, and otherwise by seeking to come into harmony with nature's laws.

But when they reach this point, thou-

sands of people continue to live as they have lived, and merely begin to take tonics, headache powders, and otherwise to enrich the already well-to-do patent medicine man, who has invested his money in something more profitable than a mine in the Klondike; and soon the unhappy individual reaches the stage illustrated in Diagram IV.

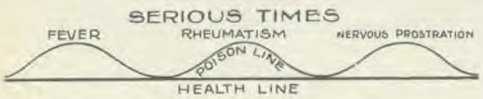


Diagram IV

Now truly "serious times" have overtaken him, for the poison line has completely risen above the line of health; and whatever particular form of disease will overwhelm him depends largely upon his inherited tendencies, and upon weaknesses which he may have acquired or cultivated.

It must be evident that even at this stage, late as it is, such treatment as will assist every eliminating organ in the body to do its best, and such physiological stimulation as can be obtained by bringing the man into touch with nature's own tonics, may yet secure for him the most promising results. Short cold sponges, or alternating hot and cold sponges will tend to transform the tawny skin into a more healthy condition, so as to carry off more waste matter. At the same time these brief applications of hot and cold stimulate in a natural way the nerves in all parts of the body. Abundance of water drinking will enable the kidneys to carry off a larger amount of waste matter in solution. Plenty of pure air will give the lungs a better chance, and not only will a diet consisting largely of fruit, simple toasted breads, and grains stimulate the activity of the digestive tract, but the fruit will actually tend to destroy the germs that are preying upon the alimentary canal.

Bear in mind that the same power that restores the bark on a tree where it has been scraped off, that raises up the grass that has been crushed down, is at work in every individual, keeping his heart pumping, and is the foundation of the functional activity in every part of the body. That same power restores the individual to health, if it only has the opportunity. The reason that we go with our heads bowed down in disease and die before our time is because we have been born and reared in the violation of nature's laws.

In the timber countries, millions of logs are floated down the rivers. At certain places they tend to stop in the stream because of obstructions along the banks. At these points men are employed to push them back with long iron bars into the center of the stream, where the current again carries them on. In precisely the same manner the work of the physician is to direct the patient into the channel of health, and as the stream of water carries on the logs, so nature heals the man; the physician only directs and assists. DAVID PAULSON, M. D.

## WHAT TO DO IN DROWNING ACCIDENTS.

KEEP cool; be quick, but deliberate and methodical. Get the drowning person out of the water; place him on his face with his head down. Send for a doctor. Keep back the crowd; allow no one to interfere with your work.

The first thing to do, if the person has stopped breathing, is to expel the water from the air-passages, and employ artificial respiration; and then restore the animal heat by friction and hot applications. Be gentle in handling the patient, taking care not to break any bones, or injure him in any way.

Loosen the clothing about the neck and waist, so that the chest may have free play. Open the mouth, and with a hand-

kerchief around your finger remove mucus, dirt, or other foreign material that may have gathered in the mouth. Pull the tongue forward, fastening it to the chin with a handkerchief.

There are several excellent methods of producing artificial respiration, but only one will be described; namely, Sylvester's, which is at the same time simple and effective. No assistants are required in using this method, but it is well to have one or two persons assist in turning the body and rubbing the limbs. Briefly, the directions are as follows: —

With the patient lying on his face, stand astride him, facing his head; then placing both hands under the lower part of the chest, lift him without allowing the head to be raised from the ground. While holding him up, give two or three smart jerks in order to cause the water to flow out of the air-passages (first illustration). Now turn the patient over on his back, and take a blanket or shawl or your coat, and quickly folding it, place it under the shoulders so that the head will fall back. Kneel at the head of the patient, and grasping the arms above the elbows, draw them slowly up over the head, holding them in this position while you count three (second illustration). Return them to the side, and make firm pressure on the chest while you again count three (third illustration). Then slowly raise them above the head of the patient, as before,

and continue to repeat the movements from twelve to fourteen times a minute.

Make sure that the tongue is well forward, and that nothing is filling the throat and interfering with breathing. If you have assistants, instruct one to rub the lower limbs and trunk vigorously, and the other to make hot applications to the limbs in order to restore the heat of the body. Meanwhile have some of the wet clothing removed, and the patient wrapped in a dry blanket. It is also well to apply a hot bag to the heart. This will act as a stimulus.

After the patient begins to breathe natu-

rally, remove him to a warm bed, if possible, and keep him warm by giving hot water or hot lemonade to drink. Avoid the use of stimulants ; often they do harm rather than good, because of the after depression that is sure to follow. A glass of hot water is preferable. Keep the patient quiet in bed, and give him an abundance of fresh air.

One of the questions to be decided in a drowning accident is whether the patient is too far gone to be resuscitated. This is sometimes difficult to determine. People almost always exaggerate as to the length of time a person has been under water, and also as to the number of times he has gone down. Of course, if the patient has been under water for any considerable length of time, artificial respiration is useless, and need not be resorted to. But if there is any possibility of restoring life, even though that possibility be very slight indeed, by all means give the patient the benefit of the doubt. This is a very critical time. What is to be done must be done at once. There is a life at stake, and you may be the means of saving that life. Imagine yourself in the condition of the patient, and do what you would like to have some one else do for you under similar circumstances.

Another very important question is how long to continue artificial respiration before giving up all hopes of resuscitation. Again, if there is the least doubt, give the patient the benefit of the doubt. People have been resuscitated after life had apparently been extinct for an hour or two. If there is the slightest chance that life can be revived, continue the artificial respiration for at least two hours before giving up. Think of the possibility of your being in the condition of the patient, and proceed accordingly.

In conclusion, the foregoing instructions may be briefly summarized as follows : —

First, keep cool.
Second, be gentle, but quick.
Third, loosen the clothing.
Fourth, secure the tongue.
Fifth, empty the air-passages.
Sixth, use artificial breathing.
Seventh, rub the limbs vigorously, and apply heat.

A. B. Olsen, M. D.

## AFTER HOUSE CLEANING.

And now for the kitchen! What a delight it is to come down into it the next morning after the cleaning is all over. How sweet is the atmosphere fresh from field and garden, freighted with the early sunlight as it streams in through the windows that have been down from the top all night, and are now, together with the outer doors, opened to the utmost.

It seems just what it is — the very sanctuary of the home. Did you ever think of it in this light, and of the work that is done in it as especially holy? Did you ever realize that you can not have a home without a kitchen? while with it, properly kept, you can have all that is essential to the most happy and successful home filled with comfort, even if lacking much that goes to make up convenience and luxury?

What memories cluster about the old-time kitchen living-room, with its fireplace, Dutch oven, and the long "settle" against the wall! No matter how many other rooms the mansion might boast, they seemed like a strange and barren land, especially to the children; and even the

grown-up folks were more at home in the kitchen of a neighbor than in their own parlor. It was in the kitchen that the family gathered after nightfall; here mother was always to be found with her work, while an atmosphere of indescribable comfort breathed all about her, and drew everybody as into a charmed circle of delights.

But the kitchen has changed. The old-fashioned motherly presence has vanished. I often wonder if it was really the cook-stove that began it, and is therefore responsible for the transformation which has been completed by the advent of oil and gas burners, and which would have made our grandmothers homesick to have seen even in vision.

And yet who shall say that these changes have not been in the line of improvement, that the parlor-mother is any less a mother than her predecessor, or that the kitchen has lost any of its recognized importance?

Whether recognized or not, it is the center from which influences go out that are more potent for good or ill to-day than in any other age of the world. It is the place from which the Word of God is administered in daily bread; it is the seat of such a conflict between the false and true in principle as is found on no other battle-field.

It does not look like a battle-field as we come into it just after the annual cleaning. Peace and quietness reign, and victory is perched on the rim of every pot and kettle, and triumphs over every lurking-place of dirt. But we have learned by tiresome experience that this is only a truce, brief at that; and that unless some new thing happens, the chances are very numerous that before long the same old struggle between order and confusion will begin and threaten the entire domestic world.

Disorder in the kitchen means death to the home. You may keep a house, but not a home, without wholesome, well-regulated, kitchen appointments.

To be able to keep a perfectly orderly and hygienic kitchen is to be equal to statesmanship. Statesmanship consists in carefulness in detail; and this is the secret of success, especially in this department of the home. Disorder does not consist in having one or two large things out of place, but many small ones. Things lying about, just where it happens to be most handy to drop them when you have no more use for them, means things always in the way and yet hard to find when wanted.

The point about which we are concerned at this present time is how to avoid that disorder with its companion evils, which makes the annual earthquake necessary.

First of all, your kitchen should be kept like the deck of a ship that has been cleared for action; and if it must be living- and reception-room as well, do swallow your "esthetic taste," put all, or nearly all, of your pretty things away, except on special occasions, and let your adornment suit the room. Do not try to make your kitchen look like a parlor, or allow yourself to be dissatisfied because it can not be something besides what it must be. Make of it all that a kitchen ought to be, and then it is fit for any necessary use, from a reception to a prayer-meeting.

Do not have one bit of cloth hanging or lying about that can be dispensed with; no draperies at the windows — only plain Holland shades. Let your floor be bare unless you can cover it with linoleum or oilcloth. If it is soft wood, you can paint it, and keep it painted, doing it yourself, at very little cost; and even if the boards are not very smooth, the paint, and varnish if you can afford it, will be a great help. You can fill the cracks with putty, paint over them, and make a very

unpromising floor into one that a damp broom-cloth, whenever needed, and a mop once a week will keep free from dirt.

More litter gathers from keeping supplies in paper bags than any one would imagine, to say nothing of the insect pests and rodents which they invite. To avoid both of these save your best tin cans, cut neatly so as to save the tops. You can use the tops which are cut from large cans for covers to the smaller sizes, and so have good, close receptacles for everything that will keep well in tin, where a mouse can not get at it. Your emptied glass fruit-jars, kept closed tightly and clean on the outside, can be used for any sweets or things that will call ants or roaches. Of all the recipes for getting rid of these pests, the very best is that method of prevention which cuts off all supplies. If a grain of sugar is dropped, wipe it up at once; not even ants will run where they can find nothing to carry away.

It is the sloppy places about the sink or table, the old, soggy wooden pails, or the baskets that keep the roaches. They are often brought in the grocer's basket, and will find their way to your woodbox, chip basket, sink, or the cracks about the baseboards. If the cracks everywhere, in the woodbox as well, are filled with putty and painted, and the old baskets broken up and used as kindling, you will find it an easy matter to keep your kitchen free from these insects, even in a city home.

A soiled dish-cloth, however, will feed droves and swarms; but it is not difficult to keep all necessary cloths so sweet and clean that no living thing will think of trying to make a nest in them. A box of pulverized borax is a good thing to keep handy for your dish-cloths. Do not spare it. It is better than ammonia for the hands, and cleaner to use in every respect. A teaspoonful dissolved in the hot suds for washing up your dish-cloths will keep them free from all odors. The cloths should be washed and scalded every time they are used, and, if possible, hung in the air to dry.

Nothing is much more discouraging than the great pile of cooking utensils, spoons, etc., which accumulate during the process of preparing a meal. At least this was the way it affected me, until I did something to avoid it, and the result is that I never have it any more.

How do I prevent it? — Simply by washing the thing at once, as soon as it is emptied, and putting it away. If you have never tried it, you have yet to learn how easily it is done. Have a pan of hot water convenient as you are taking up your dinner, and before putting the kettle or pan down, wash, if you do not have time to wipe it. If clean, it can be left standing, without being offensive. If you have but the one room for cooking and eating, before making the call to dinner, you can with a few quick strokes of a damp cloth wipe up all slop, pour out the water, put your pan away, your cloth out on the line, and there you are, as tidy as you please, with only the dishes which are on the table to handle after the meal.

A strong solution of sal soda swabbed about the sink twice or three times a week, and allowed to flow down the escape pipe, will keep it, even should it be a wooden cradle of germs, free from every offensive or mischievous thing.

A thick roll of brown paper is a good every-day polish for your cook-stove, and if used vigorously every time you finish up after cooking, the blacking brush will not be needed more than twice a week. The oil, gas, or gasoline burners must be washed often or you will suffer from the soot nuisance beyond endurance.

In taking ashes from the stove a paper spread under the hearth is a protection from dust, and will save many times over the minutes and steps required to put it in

place. The newspaper is a great friend to the busy housekeeper if wisely spread to catch things that you wish to get rid of quickly.

Scraps of food left standing about from day to day will be fruitful in all manner of deadly germs, such as will give an unhealthy savor to everything about the kitchen. One should not, of course, throw good food away; but by a little exercise of mother-wit, scraps can be so combined and made up into some toothsome dish for the next meal that everybody will wonder from what school in cookery you were graduated.

If you consider yourself a kitchen drudge, none of these little suggestions which I have made will work at all; but if you have a regal nature and delight in your woman's kingdom, the smallest little coop of a room may be made beautiful and redolent of that cheerful and instinctive carefulness that will leave no place for a general annual breaking up, but will make the opening of all doors and windows to the balmy breezes and the warm sunshine the only necessary spring cleaning.

S. M. I. HENRY.

## SUMMER VEGETABLES AND SALADS.

AT this season of the year, when the system demands an abundance of water to supply its needs, the green foods and vegetables which nature provides are largely composed of this necessary fluid.

The following analysis, showing the composition of some of the more common garden vegetables, will serve to illustrate this point: —

| | Water. | Albuminous Elements | Starch. | Non Nitrogenous Substances. | Salts. | Cellulose. | Total Nutr. Value. |
|---|---|---|---|---|---|---|---|
| Asparagus | 93.7 | 1.8 | | 2.3 | .5 | 1. | 5.3 |
| Cauliflower | 90.9 | 2.5 | | 3.4 | .8 | .9 | 8.2 |
| Fresh Tomato | 92.4 | 1.6 | | | .6 | .8 | 6.8 |
| Green Peas | 78.4 | 6.4 | 12. | | .8 | 1.9 | 19.7 |
| String Beans | 88.7 | 2.7 | 5.5 | | .6 | 1.2 | 10.1 |

Owing to the large percentage of water, these foods very quickly become stale. To be perfectly wholesome, green vegetables should be freshly gathered, crisp, and juicy; those which have lain long in the market are very questionable food. In Paris, a law forbids a marketman to offer for sale any green vegetable kept more than one day. The use of stale vegetables is frequently the cause of serious illness.

If it be necessary to keep green vegetables, do not cover them with water, as that will dissolve and destroy some of their juice; but lay them in a cool, dark place, as on a stone floor, and do not remove their outer leaves until needed. Peas and beans should not be shelled until wanted. If, however, they are not used as soon as shelled, cover them with pods and put in a cool place.

The best way to freshen withered green vegetables having stems is to cut off a bit of the stem end and set only the cut part in water. The vegetables will then absorb enough water to replace what has been lost by evaporation.

In selecting corn for the table take that which is young and tender and has well-filled ears, from which the milk will spurt when the grain is broken with the finger nail. Beans and peas are fresh only when the pods are green and plump, snap crisply when broken, and have unshriveled stems. Corn, peas, and beans are whole-

some and nutritious when thoroughly cooked and sufficiently masticated, but they are almost indigestible unless the hull or skin of each pea, bean, or grain of corn be broken before swallowing. If necessary to wash shelled peas, it can best be done by putting them in a colander and dipping in and out of a pan of water until clean. Spinach, lettuce, and other leaves may be cleaned in the same way. All green garden vegetables, as spinach, cauliflower, asparagus, peas, string beans, should be put to cooking in boiling water, boiled for a few moments, then placed on the range where they will just simmer until tender. If salt is used, it may be put into the water before introducing the vegetables.

If it is desired especially to preserve the green color of the vegetables, an abundance of water is necessary, and the kettle should be left uncovered during the cooking process. Ordinarily, however, the flavor of the vegetable is better if it is cooked in a rather small proportion of water. For green peas when young and tender, one-half pint of boiling water for each quart will be sufficient. Spinach is best cooked in its own juices; this may be accomplished by cooking it in a double boiler or steamer, or if placed in a pot and slowly heated, it will in a short time yield sufficient juice to cook itself. It must, however, be stirred frequently at first, to prevent burning. Cover closely, and cook until tender. If water is used, a plentiful supply should be ready, the greens boiled rapidly until the leaves are tender, then very thoroughly drained in a colander.

The length of time required for cooking is approximately as given in the following table:—

| | | | |
|---|---|---|---|
| Green corn, young | (boiled) | 15 to 20 | minutes. |
| Peas | " | 25 to 30 | " |
| Asparagus, young | " | 15 to 20 | " |
| " old | " | 30 to 50 | " |
| String beans | " | 45 to 60 | " |
| | | | [or longer. |
| Spinach | (boiled) | 20 to 60 | minutes |
| Cauliflower | " | 20 to 40 | " |
| Summer squash | " | 20 to 60 | " |

Most garden food plants require cooking to make them wholesome. A few, however, as lettuce and young cabbage, are suitable for use uncooked, and are much relished as a salad dish. The term "salad" is often applied to various unhealthful mixtures of food material, but this fact does not make all salads of this character. The simple leaf and vegetable salads, when prepared of wholesome ingredients, are not only dainty relishes, grateful to the taste, and pleasing to the eye, but are valuable adjuncts to a hygienic dietary. Their nutritive value is not high, but their fluid and mineral constituents serve an excellent purpose in the vital economy.

For the dressing of many salads both an oil and an acid element are considered essential. Nuttolene and nut butter or pure olive oil are well suited for this purpose, and for the acid, nothing is superior to lemon-juice. Says a prominent *chef* of the culinary art: "Lemon-juice is the most delicately perfumed acid that nature has ever given to the cook. To my mind any manufactured vinegar is too strong for a fine, uncooked salad." Modern science has discovered that the eels of vinegar sometimes take up their abode in the alimentary canal as parasites, and become a source of irritation to the digestive organs.

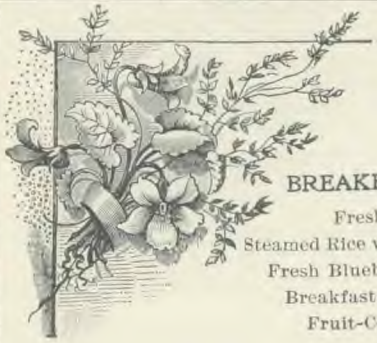
Vegetables and leaves for use as salads need to be of the freshest, crispest, and most tender. Those that have been specially cultivated for the purpose are best.

In the preparation of lettuce salads, the leaves should be carefully sorted, all bruised and tough leaves being discarded. It is a good plan to cut the head of lettuce into quarters, beginning at the base; then remove the larger leaves one by one until the heart is reached, carefully wash each

leaf in very cold water or ice-water, and thoroughly drain the whole. A spherical wire draining basket is most desirable for this purpose. If oil is to be used in the dressing, the leaves should be as dry as possible, even wiped by pressing between the folds of a clean, dry towel. Cabbage used for salad should be young, tender, crisp, and juicy. It should also be carefully examined and washed, then chopped quite fine with as little handling as possible.

For the mixing of the salad no utensils are superior to the salad knife and fork of boxwood. The bowl in which it is to be mixed should be sufficiently roomy, offering at least one and a half times more volume than will be needed by the salad, in order that there may be plenty of room for turning. It is always best not to season a salad until just a few minutes before it is needed, since most salads deteriorate greatly by standing.

ELLA EATON KELLOGG.



## Seasonable Menus

### BREAKFAST No. 1.

Fresh Fruit
Steamed Rice with Nut Cream
Fresh Blueberry Toast
Breakfast Rolls
Fruit-Coco

### BREAKFAST No. 2

Sweet Plums
Browned Granose Biscuit
with Nuttolene
Lettuce
Blackberry Sandwich

### DINNER No. 1.

Fruit Soup with Nut Sticks
Mashed Scotch Peas with Peanuts
Tomato Salad
Whole-wheat Puffs (See May No.)
Fresh Berries
Granose Fruit Pie

### DINNER No. 2.

Corn and Pea Soup
Cauliflower with Tomato Sauce
New Potatoes
Stewed Summer Squash
Baked Barley
Whole-wheat Bread
Stewed Berries

## RECIPES.

**Blackberry Sandwich.**—Prepare the same as directed for apple sandwich, April number, using nice, fresh blackberries lightly mashed, and sweetened if desired, in place of the apple pulp.

**Fruit Soup.**—Take one quart of gluten stock (prepared by boiling two cups of good wheat bran in three pints of water until reduced to one quart); one cup of dried apples, previously cut into small bits, and stewed until tender and the juice evaporated; three fourths of a cup of currant-juice, three fourths of a cup of pineapple-juice; one tablespoonful of sugar, and a little grated lemon rind for flavoring.

**Mashed Peas with Peanuts.**—Soak a pint of dried Scotch peas overnight in cold water. In the morning drain and put them to cook in warm water. Cook slowly until perfectly tender, allowing them to simmer very gently toward the last, until they become as dry as possible. Rub through a colander to remove the skins. Cook the peanuts separately. To each pint of blanched nuts add two quarts of water. Boil for ten or fifteen minutes, then put into a bean pot, place in a slow oven, and cook from nine to ten hours. When done they should be soft, with very little juice. Both the nuts and the peas should be cooked the day before serving the mashed peas. Drain the juice from the nuts, press through a colander, and add one part nuts to two parts of peas. Beat well, season with salt, turn into an earthen or granite-ware pudding dish, smooth the top, and bake in a moderate oven till dry and mealy.

**Granose Fruit Pie.**—Brown granose flakes lightly in a hot oven, then moisten very lightly with almond cream, or cocoanut cream prepared as directed in the April number. A little nut meal may be mixed with the granose flakes instead of moistening it if preferred. Place a layer of the granose on a pie plate in the shape of a piece of pie; spread on this a thick layer of lightly mashed and sweetened blueberries, raspberries, blackberries, or sliced peaches; cover with a thin layer of the granose flakes, and serve.

This is a very simple and tasty dessert, and is very nice made with the granose alone without the nut meal.

**Corn and Pea Soup.**—To one cup of cooked Scotch peas which have been rubbed through a colander add an equal quantity of fresh or canned corn pulp. Add water or nut cream to make of the desired consistency. Season with salt, and serve.

**Stewed Summer Squash.**—Prepare, cut into pieces, and stew until tender in a small quantity of boiling water; drain, pressing out all the water; serve on toast with cream or white sauce. Or, divide in quarters, remove the seeds, cook in a double boiler, in its own juices, which when done may be thickened with a little flour. Season with salt if desired, and serve hot.

**Baked Barley.**—Soak six tablespoonfuls of barley in cold water overnight. In the morning turn off the water, and put the barley in an earthen pudding dish, and pour three and one half pints of boiling water over it; add salt if desired, and bake in a moderately quick oven about two and one half hours, or till perfectly soft, and all the water is absorbed. When about half done, add four or five tablespoonfuls of sugar mixed with grated lemon peel. It may be eaten warm, but is very nice molded in cups and served cold with cream.

## HOW TO GIVE A SALT GLOW.

THE salt glow is a treatment for tonic effect. For giving this have a wooden stool, one pint of coarse salt moistened with hot water, a foot-tub half full of water at a temperature of from 105° to 110°, and two half sheets. Lay one of the half sheets, folded, on the stool, to protect the patient from unpleasant contact, and place the other half sheet over the front of the patient, tying the upper corners at the back of the

neck. Have the patient sit on the stool with his feet in the foot-bath.

Take a good-sized handful of salt, and beginning with the foot, rub briskly to the hips, being careful to cover all the surface. After finishing the lower extremities, which requires about one minute, treat the arms in the same way. Next, with one hand in front and the other to the back, rub the shoulders, the back, the chest, and the abdomen thoroughly; then have the patient stand, and rub the hips.

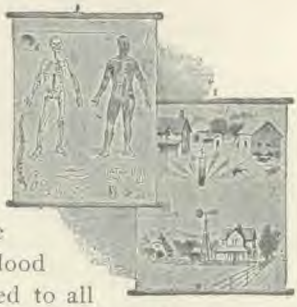
Follow the rub with a spray or pail pour. If the treatment is given at home, and you have no facilities for giving a spray, the pail pour may be employed by having the patient stand in a large tub and pouring a pail of water at a temperature of 90° over his shoulders.

After the salt has been carefully rinsed off, wrap the patient in a dry sheet, remove the rubber cap, if he has worn one, and beginning with the feet, rub the whole body quickly to take up the large drops; then rub again vigorously and more thoroughly until the patient is in the "glow" which this treatment is intended to produce. Now remove the sheet and wrap the patient in a dry blanket. Have him sit on a stool or chair, and give the feet a brisk rubbing.

The salt glow may also be given in a bath-tub. In this case it should be preceded by a foot bath at a temperature of from 105° to 110°. Have the bath-tub two thirds full of water at a temperature of 100°. Place in the tub a stool covered with a folded napkin or sheet, seat the patient upon the stool, moisten the salt with hot water, and give the rub in the manner just described. Then remove the stool, and have the patient lie down in the tub while you rub quickly the whole surface of the body to remove the salt. Cool the bath to 90° or 85°, and dry as in the other form of treatment.

ABBIE M. WINEGAR, M. D.

## ABSORPTION OF FOOD FROM THE ALIMENTARY CANAL.



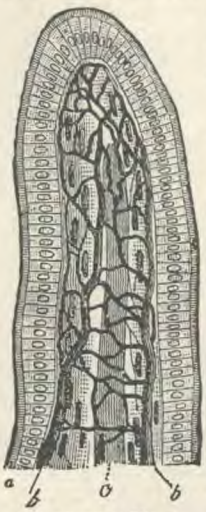
FOOD, when it has undergone the changes brought about by normal digestion, is in a condition to be taken into the blood and by it carried to all parts of the body. When the digestive processes have been completed, the food substances are found in the alimentary canal in a fluid condition, and in a proper state to be absorbed. On the opposite side of the intestinal wall are the blood-vessels and lymphatics.

Before the food material can enter the blood or lymph, it has to pass through the epithelial cells lining the intestine, and also through the endothelium of the blood-vessels and lacteals. This passage of the food material through these walls is perhaps not fully understood. It can not be wholly accounted for by the processes of filtration and osmosis, and in all probability the living cells of the blood-vessels and lacteals control this process to a certain extent.

While the chyme (the fluid which leaves the stomach) is passing along the alimentary canal, it comes in contact with the villi, through which most of the food material finds its way into the blood and lymph. In these villi, which are minute projections into the alimentary canal, are the capillary blood-vessels and the origin of the lacteals.

It will be seen from the accompanying illustration, which is a section of a villus, that the cells are regularly arranged about the outer portion of this villus. It is these cells with which the food comes in contact while in the alimentary canal and

through which it must pass before it can enter the blood or lymph. Inside of the cells are seen some fibers of connective tissue and small blood-vessels. Occupying the central portion of the villus is a slightly expanded tube, which is somewhat club shaped. This is the beginning of the lacteal. Surrounding it are several involuntary muscular fibers which by contracting and relaxing expel the fluid from the lacteal.




AN INTESTINAL VILLUS.

*a*. Layer of cylindrical epithelium. *b b*. Blood-vessels entering and leaving the villus. *c*. Lymphatic vessel occupying its central axis.

Absorption of food material takes place along the whole extent of the alimentary canal, the greatest amount being absorbed by the small intestine, where the villi are very numerous.

Through the villi there are two routes by means of which food material may be taken up, one through the blood, the other through the lymph. The proteid, or nitrogenous, foods are taken directly into the system of blood-vessels known as the portal system, and through these channels reach the liver, where they are further acted upon. The carbohydrates take the same route as the nitrogenous food. The fats find a different route; they are taken up by the central lymphatics, and from these are expelled into the larger lymphatic vessels, and finally reach the thoracic duct, which empties into the left subclavian vein; so the fats, as well as the proteids and carbohydrates, finally reach the blood. While digestion and absorption are not going on, the thoracic duct is filled with a clear fluid called the lymph, but as soon as fatty material is absorbed, the color changes to that of milk, and the fluid is called chyle.

Most of the water and salts consumed are taken up by the portal vessels, but under some circumstances some may first pass into the lacteals.

It is through these same channels that the poisonous products which result from the fermentative changes which food so frequently undergoes when it is not of the proper character or has not been properly digested, reach the blood. When once in the blood, they can not be recalled, and as a result the delicate cells with which the blood comes in contact in all parts of the body have this poisonous material thrust upon them, and by their efforts to rid themselves of it pains and aches of various sorts are produced. In order to have pure blood, pure food, properly digested, must enter it.

CHARLES E. STEWART, M. D.

## HOME CLUB QUESTIONS.

### PHYSICAL DEVELOPMENT.

1. WHAT is the chief cause of old age?
2. What effect has the withering of the arteries upon the body as a whole?
3. What is the best means of postponing old age?
4. At what age should the old person discontinue muscular exercise?
5. How should age be reckoned?

### HEALTHFUL DRESS.

1. What is the difference between artistic and healthful dress?
2. Why is the average healthful dress so inartistic?
3. What are the greatest enemies to artistic dress to-day?
4. What should be the standard of beauty?
5. What is the surest evidence that we are all wrong on the dress question?

### SCIENTIFIC COOKERY.

1. What is the chief constituent of green vegetables?
2. Do green peas and beans contain as much nutriment as ripened and dried legumes?

3. How should green vegetables be put over the fire?

4. What acid is best for use in salad dressing, and why?

5. What is especially requisite for wholesomeness in green and salad vegetables?

HYDROTHERAPY.

1. What is the effect of a salt glow?

2. Within the range of temperatures given, which is better, a higher or a lower?

3. Why is it important to follow directions *exactly?*

4. Why should the use of stimulants be avoided in case of drowning and other accidents?

PHYSIOLOGY AND HYGIENE.

1. What is osmosis?

2. What are villi?

3. What is their function?

4. Where is the subclavian vein?

5. In what part of the alimentary canal does the greatest absorption of food material take place?

## ANSWERS TO HOME CLUB QUESTIONS FOR JUNE.

PHYSICAL DEVELOPMENT.

1. BECAUSE the average adult is not prompted by inclination to take sufficient exercise, whereas he needs it more, perhaps, than at any other time of life.

2. Metabolic processes are the constructive and destructive processes taking place in the living cell.

3. Those of sedentary occupation; those inclined to obesity or to disease.

4. An amount equal to at least one sixteenth of his total working capacity.

5. The kind of exercise is unimportant. The essential is to take enough and to guard against overexertion.

HEALTHFUL DRESS.

1. It must be light, short, simple, and must be suspended from the shoulders.

2. Because beauty and public sentiment, as well as pure hygiene, should be considered.

3. Because the weight would not be evenly distributed by suspenders.

4. Not among people who have sensible objects in life.

5. Six inches from the floor is a convenient length.

SCIENTIFIC COOKERY.

1. It is valuable for the acids and fluids which it supplies.

2. There is very little difference.

3. Chiefly because they contain raw starch, which is indigestible in the stomach.

4. Nuts, grains, and seeds.

5. It increases the dietetic value of fruits not wholly or well ripened, but perfectly ripe fruit is best used uncooked.

HYDROTHERAPY.

1. The region over the stomach.

2. A general dropsical condition.

3. A series of enemas lasting ten days, the first consisting of two quarts of water at a temperature of 100° F., and the last of one-half pint of water at 70°.

4. Groups of sympathetic nerves located in the muscular walls of the intestine and blood-vessels.

5. A treatment in massage, consisting of a succession of sharp, light blows.

PHYSIOLOGY AND HYGIENE.

1. No.

2. (*a*) It assists in emulsifying the fats; (*b*) by bathing the mucous membrane of the intestine it hastens absorption; (*c*) it helps to neutralize, or make alkaline, the acid contents of the stomach; (*d*) it helps to prevent putrefaction from taking place in the small intestine.

3. It acts energetically on cane-sugar, and probably has a slight action on all other food substances.

# "COME, LET US LIVE WITH OUR CHILDREN."

BY MRS. E. E. KELLOGG.

"COME, let us live with our children," said Froebel, the modern apostle of child culture. Most parents live *for* their children, but few maintain that relation of true sympathy, that answering of heart to heart, which characterizes a living *with* the children. There are many parents, who, out of deepest love, sacrifice and do for their children, and yet fail to be in full sympathy with them. To live with the children, the mother must needs put herself, in feeling, on the same plane with them, looking upon things from their standpoint as well as her own.

The beautiful outgrowth of this genuine living with the children is that perfect confidence between the child and the parent which, if begun early and continued through life, will prove one of the surest barriers against evil that can be erected. It will tend to that unity of purpose which will enable parent and child to work together for the overcoming of evil and the correction of faults. The child will struggle the harder because the mother's loving sympathy makes him feel that she is struggling with him. They will take counsel together over faults that need to be overcome, weep together over failures, and rejoice together over victories. Where real, true sympathy thus exists, there need be no more hesitancy in coming to mother with the failures, the misdeeds, the wrong doings, than there is in bringing to her the pleasures and victories, for the child will feel somewhat as do we children of older growth when we take our troubles to our ever-listening Father,— that she is his refuge and his help in time of need. The aid that is not within human power to give she will help him to gain by leading him to the Infinite Source.

If parents could only be made to realize what a tower of strength such a living with their children may become, no effort would be considered too great to be spent in cultivating such a relation, for it must be cultivated if it is to be continuous. It must grow with the children; it must broaden with their years, and take in their play, their playmates, their studies, their work, their reading, as well as their pleasures, their joys, their sorrows, and their deepest feelings.

Many parents, who, in truth, live with their little ones in their tender years, allow them to drift away as they grow older, through failure to respond to the outgoings of their hearts, thereby discouraging them from coming to mother and father for the sympathy craved. It is in this way that the bond of confidence between parent and child becomes severed.

"How can I win the confidence of my child?" is a question asked by far too many anxious parents, who, through one mistake or another, have lost this precious gift. Says Dr. Mary Wood-Allen upon this point: "In the beginning, the absolute confidence of the child is given to the mother. In sickness or in health, in danger or in safety, in sorrow or in joy, the one cry of the child is for mother." It brings to her its every emotion, its smallest wish; her smile heightens its joys, her kisses cure its hurts. If in maturer life there is not this full measure of confidence, there must have been a time, a place, a circumstance, when this confidence began to wane. Some one must originally have been at fault.

"Not always in the same way is the strong tie of confidence strained in the beginning, but an illustration of one way in which confidence is lessened will be

suggestive of other ways. Doubtless the beginning was sometime when the mother, full of cares, neglected to express sympathy for some little sorrow or infinitesimal injury. A little child had hurt its finger; the mother realized that the hurt was trifling, and paid no attention to it. The child persisted in calls for sympathy until the mother, greatly annoyed, exclaimed impatiently, 'Well, what can I do about it?' 'You might say "Oh!"' was the child's reply. It needs great wisdom to know just how to express enough sympathy to keep the child's confidence, and yet not so much as to create an undue magnifying of a trivial matter.

"Again, the world is new to the child. Her wonder springs up over the tiny weed, the pebble, the caterpillar, and she comes loaded with what to her are wondrous treasures, to show them to her dearest friend, her mother. To the weary woman they have no novelty, and they bring disorder into the room over which she has expended much strength. She looks with dismay at the threatening medley of plants and bugs, and exclaims: 'Take your trash out of here quick. I am not going to have my clean room littered up with all this nonsense.' 'But, mama, see these pretty flowers and this lovely worm—' 'Out with it, I say. Ugly things! I don't see what you want to bring them in here for.'

"A little later the girl comes from school with her tender heart sympathizing with the woes of a friend. 'O mama, Lizzie tore her new dress on a nail over in Smith's lumber-yard and—' 'So you 've been over there, have you? Well, she ought to tear her clothes and have a whipping, too, and I 'll give you one for going there when you were told not to.' And punishment follows. Well, should she not have been punished if disobedient?—Yes, but her story should first have been listened to, and then she should have been led to see the justice of punishment. As it is now, the lesson she has learned is to refrain from carrying confidences to mother.

"She is now growing up into womanhood and mother wants above all things to have her confidence. Now she would give the world if the daughter would come to her spontaneously with a recital of her daily doings. She has forgotten how often she has closed the eager lips in days gone by because the incidents of the little life seemed of no interest. 'I don't care anything about your mud pies when you are three, but why don't you tell me of your hopes and ambitions and heart experiences when you are sixteen?' Ah, mother! You can not separate the two. If you want to know the heart of the maiden, you must be interested in the heart of the child. The unfolding, sensitive plant, chilled by premature frosts, later will not open under the sun's warmest rays. It is usually too late to seek to regain the confidence when once lost. It does not follow that the girl does not love and trust her mother, but she has ceased to turn to her mother for sympathy. A less worthy stranger may win her confidence, because there is no barrier to break down before her heart can open. The tears and prayers of the mother will not avail. It is not that the girl would not, but she can not turn with a spontaneous unfolding of herself where, in the past, she has so often met with repulse.

"What shall the mother do who wants to regain the confidence she has lost? It will be a hard task; she can not do it by questioning, the girl will resent it; nor by reproaches, the girl will feel their injustice. If a measure of confidence is regained, it will be by a wise, tactful, respectful manifestation of interest (not with curiosity or prying) in the girl's daily life, with a willingness to forego to a great ex-

tent her prerogative as a censor. A recital of experiences often interrupted by criticisms, no matter how greatly merited, will not be an inducement to further confidences. If instruction or censure is needed, let them be kept for a more opportune time, and let nothing interrupt the free outgoing of the girl's heart. The flowing stream that meets with frequent obstructions, frets and boils and overflows its banks, and does much damage through its impetuosity. The same stream, flowing undisturbed, can be curbed and restrained within its bounds by banks which guide its course but do not impede its progress.

"The confidence between mother and daughter is not only a delight to the mother, but may be a safeguard to the daughter. One incident may be quoted as a proof of this :—

"A young girl, whose mother was her confidential friend, went to work in the office of a reputable (?) man. He was very kind, and gradually began to infuse a little gallantry into his kindness. The mother, foreseeing from the daily reports made her by her daughter the tendency of the compliments and flatteries, warned the unsuspecting girl, and suggested that she take opportunity casually to remark that she told her mother everything.

" 'Do you tell her all that occurs here?' asked the employer. 'I certainly tell her everything that pertains to me,' was the reply. Nothing more was said, but the intimation was enough. A girl whose mother knew even the trivial incidents of her daily life was guarded from approaches which the man would have been unwilling to have reported. This implicit confidence had been maintained by the mother's never refusing to listen sympathetically to the most unimportant communications of her daughter from childhood. Often when weary she had been tempted to silence the childish prattle concerning things which had to the mother no personal interest, but she checked the impulse, thinking, 'The day will come when I shall want her to tell me everything, so I must educate myself now to listen with sympathy to everything she tells.' The result is that the daughter is not happy unless mother shares in all her experiences, glad or sad, trivial or momentous."

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"COME, let us live with our children!"
Earnestly, holily live,
Learning ourselves the sweet lessons
That to the children we give.
Fresh from the kingdom of heaven
Into this earth-life they come,
Not to abide — we must guide them
Back to the heavenly home.

"Come, let us live with our children!"
Leading them tenderly on
Into the fields that God's love-light
Ever shines brightly upon.
Then when our feet grow too weary
For the safe guidance of youth,
We shall be led, like the children,
To Him who is goodness and truth.

— *Selected.*

# WEANING THE BABY.

BY KATE LINDSAY, M. D.

THE first year of infantile life is the time when the digestive organs are developing rapidly, and their functions becoming established. As has already been stated in former articles, in the first months of life the starch-digesting function is practically absent, and is not fully established with any degree of potency until the later months of the first year, which usually coincide with the cutting of the eight incisor teeth. From this we see that nature indicates the time when weaning should take place. An organ compelled to do functional work before it is prepared for it by proper growth and development of function, is injured. The same is true of an organ that has reached the time and perfection of structure which fits it for its functional work, and is not required to fulfil its office in the vital economy.

All infants do not develop with equal rapidity, but the time for weaning may correctly be stated to be between the tenth and fifteenth months. Weaning should never be abrupt if it can be avoided; in fact, so gradually should the change in food be made that neither mother nor baby shall be aware by any disturbance of health that it has taken place. At least a month, or better, six weeks or two months, should be taken in making the change from the maternal food with its large percentage of soluble carbohydrates to the farinaceous foods and cow's milk which are to take its place. A child should not be subjected to the strain of weaning when still weak from an attack of some acute disease, as measles, whooping-cough, or any form of disorder which has caused great loss of flesh and weakened the vital energies, nor in the very hot months, nor when the teething process is active. Select a time when the health is good, in the cooler months of the year, and in the intervals between the active periods of dentition.

The first step of the process is to replace one meal of mother's milk by a meal of well-cooked gruel, and milk. Begin with this food at the end of the eighth month. At that time, if the infant has been fed with regularity, it will be taking five or six meals a day at most, and no food at all at night. After a week or ten days, two meals of the artificial food may be given, one some time in the morning, and the other in the afternoon at one o'clock. After a week or two, three meals of artificial food may be given daily; in another week, four; five a week later; and in a few days more the breast can be entirely withheld without the little one's missing it.

By this method there is time to find out what kind of food agrees best with its digestion. If any food seems to disagree, it can be replaced by some other and more suitable substance. If from any cause the baby becomes ill, it will have its natural food to depend upon for nutrition, which is often a very important matter in case of a delicate child. The writer has more than once seen children a year old made seriously ill by weaning abruptly and before it was ascertained what form of food they could best digest; and has also known infants to lose their lives in the process of experimenting to find out what would agree with them. The kind of food given at this time is of very great importance, for, although the child may have six or eight teeth, it can not chew any solid food, as these teeth are not the grinding teeth, but the incisors, or cutting teeth. It will not do to give

the child raw apples or other raw fruit, meat, vegetables, and whatever may constitute an adult's diet. It is more dangerous to give solid foods at this time than before the teeth are cut, for at that time the infant has no means of breaking off great masses and swallowing them whole, as it will invariably do after the incisors are cut.

The first set of teeth are usually cut between the twenty-eighth and thirty-second months, or they may not all appear until the end of the third year. In that case, food requiring mastication should not be given until that time. The writer remembers well the case of an eighteen-months-old baby in convulsions from eating fresh ripe apples. After an emetic, which restored it to consciousness, the contents of the stomach were examined, and pieces of raw apple half an inch in diameter were found in abundance. When the cause of the fits was pointed out to the parents, they innocently remarked that they had tried to have the child eat slowly and masticate its food well, totally ignoring the fact that the little one had no grinders to masticate with, as it was a backward child and had cut only its incisors. It is to be regretted that adults of the present age bolt so much of their food unchewed. How much of this habit may be the result of having become accustomed to swallowing things whole in infancy it is hard to determine.

This brings us to the second phase of the subject of weaning; that is, what kind of food should a weaned child eat? — Not solid food in any form requiring mastication, until the child is well along in its third year. Remember that chewing requires teeth. Remember also that successful nutrition after weaning depends in a great measure on the ability to digest starchy foods well, also that to do so they must be given in a fluid or semifluid form, the starch being made as easily digestible as possible by being thoroughly cooked.

In the process of baking, the temperature can be raised much higher than in boiling, and this raising the degree of heat to which the starch is subjected does a part of the digestive work by changing this important food element into a more soluble form and lessening the work of the digestive organs. Instead of giving the weaned baby so much half-cooked mush, porridge, or gruel, it would be better to form the grains into bread and bake it well in a moderate oven before mixing with the milk. Zwieback, granola, granose, gluten meal, and such foods are all better than raw meals. Zwieback, although very hard when dry, crumbled up fine and mixed with milk, dissolves into a soft, pulpy mass, and forms a wholesome meal for children who can not yet masticate well. The other foods mentioned, having been subjected to extra baking, also soften very readily in milk or water, and require very little cooking to prepare them for even infantile digestion. All the advertised infant foods owe much of their superiority over other forms of starchy food to the amount of heat to which they have been subjected in cooking. Many of them may be used in connection with the foods above mentioned, to provide a variety for the different meals. When raw meals are used for infant food, in the form of gruel, porridge, or mushes, they should be subjected to many hours' cooking, not less than four or five for the finer grades of meal, and an hour or two more for the coarser forms. All kinds of starchy foods do not digest in the same time, the starch of barley being said to be very easily digested.

When milk is scarce or poor in quality, and some form of food rich in nitrogen is needed, gluten meal may be used. It is usually well cooked, and has had a por-

tion of the starch removed. There are several qualities of this meal, graded according to the percentage of gluten they contain. They are often very useful when from any cause milk or any other animal food can not be used in the infant's dietary.

As has already been stated, raw fruit, even when ripe, should not be given to children at this age unless it has been broken into a fine pulp, either by peeling, removing the pits, and mashing with a spoon or fork, or in case of fruit like mellow apples, pears, etc., scraped and fed to the child in small mouthfuls two or three times a day before meals. Well-cooked sub-acid fruits, such as ripe baked sweet apples and pears, may also be given in moderate amounts, but they should be carefully pared and the core removed. Do not let the little one have seedy fruits, as grapes and berries, raw, without separating the seeds from the pulp and juice.

Looking over the record of cases of convulsions which the writer has attended, among the exciting causes are marked constipation, and convulsions relieved by enema which brought away hardened masses of fecal matter composed almost entirely of black raspberry seeds. The twenty-months-old child had indulged freely in raw fruit for two days. Another case which had been treated faithfully by warm baths had no more spasms after a mass of cherry-pits was removed from the rectum. Swallowing unripe or raw fruits without mastication, also swallowing beans, corn, whole raisins, and dried fruit, causes much of the stomach troubles of children. In one case under my observation the little child had in its alimentary canal an assortment of foreign bodies, among them several kinds of buttons, a crochet-hook, several pins, glass beads, and several inches of a brass watch-chain. It is needless to say that the little one had severe inflammation of the bowels, and was ill a long time afterward. An infant who has convulsions suffers not alone from the immediate effects of the nerve storm, but its nervous system is injured for all time by the shock.

Feeding the children regularly and slowly is one of the safeguards against infection by disease-germs. It is very harmful to allow the baby to drink milk in hurried gulps. It surprises the stomach to have so much food hurled into it at once, and is demoralizing to the child, laying the foundation for the habit of hasty eating, which will invariably make it a dyspeptic for life. Of course it takes more time for the mother or the nurse to see that the two-year-old child eats properly,— perhaps twenty minutes four times a day,— but if she will remember that she is helping to lay the firm and enduring structure of a life, perhaps an illustrious one, the labor will be relieved of its tediousness.

It might be well to sum up the directions for successful weaning by the following rules:—

1. When it is decided to wean the little one, examine it as to general health, teething, size, and development, and next consider its environment, the season, weather, and whether the locality is healthful or not; and as to the food supply, whether well-cooked farinaceous foods and healthy milk can be obtained to replace the mother's.

2. Allow at least two or three weeks for the process, or better still, a month or six or eight weeks. All this time watch the effects of the change of food on the weight, nutrition, and health of the child.

3. Remember that gruels and porridge made from cooked meals, or well-baked bread with milk, are better than those made from raw meals, and that when any raw meal is used, it should be subjected to long cooking.

4. Remember that until its molar teeth

are cut, an infant can not masticate its food, therefore it should not be given such food until well along in the third year, unless the food has been broken up into a fine pulp so that the gastric juice can come in contact with and digest it without irritating the stomach.

5. Take time to feed children one or two years old properly, as well as to provide and prepare suitable food. Feed them slowly and with a spoon, at regular intervals. Educate the growing appetite on the principle of eating to live, not living to eat.

## SUGGESTED BY A CHURCH SUPPER.

DID you ever stop to think that man is more democratic in his appetite than any four-footed animal, not excepting the hyena? From the brains to the tail everything goes but the horns and pelt. If the soul of an animal could be discovered, some ingenious person would invent a method of pickling or grilling it.

Take the ordinary bill of fare at a church festival or picnic: A committee of sisters, true and tried, dispense hospitality in the form of swine's flesh that has been nicely fattened on garbage, dish-water, and possibly the putrid remains of various animals that Mr. Piggy has discovered in his grunting, rooting, wallowing meanderings, where it is to be hoped he was surprised by the assassin's knife, and not left to reap the reward of his disgusting appetite; viz., cholera, scrofula, and trichina.

Hundreds of thousands of yeast-germs will be served as fresh rolls, that will enter the stomach like Mauser bullets. These will be joined by the scavengers of the sea, commonly known as oysters, with mouths and stomachs lined with millions of the fattest, filthiest germs the ocean can produce. All will be marshaled into fighting squads, not at the point of the bayonet while the band plays the "Sweet By and By," but by that most deadly, never-failing implement of torture, the festive cucumber pickle,—just a few inches of raw starch soaked in vinegar, but it will seal the salivary glands, for, like the noble red man, it has never been known to bow its neck to the yoke of any master.

Then comes a hot application of mustard, cayenne pepper, and more vinegar, punctuated by chunks of hard, fibrous matter, catalogued as celery salad. This will move all to tears unless they have become hardened sinners, and will cause the ladies to call for coffee to quench the fires and soothe the poor, blistered organs,—good black coffee that will set them dreaming dreams of the opium eater. If you are near enough, you may hear them planning suitable rewards for the poor, slandered meat-packers of Chicago, or ways and means of reaching the benighted heathen, who have never realized the degradation of kissing the tail of the sacred cow instead of making soup of it.

But still there is more to follow: We kill by kindness, just to put sufferers out of their misery, you know. Now comes the real delicacy of the occasion—ice-cream. It will sweep down the esophagus like an Alpine avalanche, holding all in its icy grasp. When thou hast eaten, and art full, beware!

If, at the next Thursday evening prayer-meeting, you hear much of the wrath of a jealous God, do not think your friends have grown pessimistic; they are only illustrating that old law written, not on tables of stone, but in all the members of man: "What thou sowest, that shalt thou also reap."

It is really pathetic to hear these good brethren and sisters asking for prayers that they may be good, diligent, and patient, when one can see that they are predestined to days of hard fighting, with but few victories. The spirit indeed is willing, but the flesh is weak, made weak by pastries, hot bread, candies, maple syrup, pancakes, and sausages. It is well that we have no conception of a resurrection for the animal kingdom, else, when the command shall be given, "Come ye out from among them," and these stomachs we have turned into cemeteries shall give up their dead, we should call for the rocks to fall upon us. We should have no excuse, for every one knows that all we get from flesh-food, besides disease and poison, the animal gets at first hand from fruits, grains, and nuts.

But we like second-hand food best, and are anxious to prove our confidence in the meat inspector. All other politicians are known to be mortal, liable to err, but a meat inspector? Never. He is turned out of a civil service machine, and is therefore qualified by nature, not by education, to know that any animal that can hold its own against the diseases in this world and requires sharp blows from a sledge-hammer to kill it, is good enough for food.

The scientists, because they can not get healthy animals, are experimenting on children who are not wanted, and yet — every market is full of pure meat.

Diseases are served at the table; the doctor and the undertaker wax rich; man goeth to his long home; and the good recite, "The Lord loveth whom he chasteneth."

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**If I Were a Boy.**

If I were a boy with my man's wisdom, I should eat wholesome food and no other. I should chew it well, and never "bolt it down." I should eat at regular hours. I should never touch tobacco, chewing-gum, or patent medicines; never once go to bed without cleaning my teeth; never let a year go by without a dentist's inspection and treatment; never sit up late at night unless a great emergency demanded it; never linger one moment in bed when the time came for getting up; never fail to rub every part of my body every morning with a wet towel, and then with a dry one; and never drink more than three or four tablespoonfuls of ice-water at one time. But all this takes will-power. Yes, but that is all it does take.

I should never speak a word to any one who might be worried about it, and only kind words of others, even of enemies, in their absence. I should put no unclean thoughts, pictures, sights, or stories in my memory and imagination. I should want to be able to say, like Dr. George H. Whitney, "I have never pronounced a word which I ought not to speak in the presence of the purest woman in the world." I should treat little folks kindly, and not tease them; show respect to servants, and be kind to the unfortunate.

I should play and romp, sing and shout, climb trees, explore caves, swim rivers, and be able to do in reason all the manly things that belong to manly sports; love and study nature; travel as widely and observe as wisely as I could; study with a will when the time came for study; read the best books; try to speak accurately and pronounce distinctly; go to college and go through college even if I expected to be a clerk, a farmer, or a mechanic; try to be a practical, every-day Christian; help every good cause; "use the world and not abuse it;" treat older men and women

as fathers and mothers, the young as brethren and sisters in all purity.

Thus I should try to be a Christian gentleman, wholesome, sensible, cheerful, independent, courteous; a boy with a will; a boy without cant or cowardice; a man's will and wisdom in me, and God's grace, beauty, and blessing abiding with me.

Ah, if I *were* a boy!—*Bishop Vincent.*

### Tortured for the Epicures.

The newspapers have been printing the following ghastly description of the cruelty to geese that is necessary in manufacturing that unwholesome and unchristian compound, *pâté de foies gras:*—

"The geese, when about nine months old, are taken from the pastures and placed in an underground cellar, where broad, slanting stone slabs stand in rows, and are bound fast to the tables. They are literally crucified.

"Feet, wings, and bodies are spread out and bound by bands, so that only the neck is left free. As may be imagined, the animal struggles with all its might against this stretching, till, after days of vain endeavor to free itself from the bands and its position, its powers of resistance are overcome, and a dull resignation, broken only by its low cries, takes possession of it. Two months must pass away before death brings relief.

"The animals are meanwhile crammed with dumplings made of dough of buckwheat, chestnuts, and stewed maize. Every two hours, six times a day, they receive from three to five dumpling pills, which in time become so sweet to the tortured creatures that they stretch their necks to be crammed.

"The most difficult task is to determine the right moment for death. Those who die of their own accord are lost to the liver factory, therefore a kind of study is needed to see when the cup of agony is brimming full and the liver is ripe for taking. The bodies of such ripe ones are like pumpkins — where ordinarily fingers are buried in flesh and fat, nothing but skin and bone are found. The livers have absorbed all the strength and juices."

### Liquid Air for the Sick.

Think of what unspeakable value liquid air will be in hospitals. In the first place it is absolutely pure air; in the second place the proportion of oxygen is very large, so that it is vitalizing air.

Why, it will not be necessary for the tired-out man of the future to make his usual summer trip to the mountains. He can have his ozone and his cool heights served to him in his room. Cold is always a disinfectant; some disease-germs, like yellow fever, it kills outright. Think of the value of a "cold ward" in a hospital, where the air could be absolutely fresh, and where nurses and friends could visit the sick without fear of infection.—*Ray Stannard Baker, in Mc Clure's Magazine.*

### The Dog School.

A writer in the *Dietetic and Hygienic Gazette* relates the following pointed incident:—

"I was called to a neighboring city recently, and stopped at a new hotel, which, I was told, cost thirty thousand dollars, and that its owner has a hundred thousand more. I asked in what business the money had been made. The answer was, 'Educating dogs and ponies.' My curiosity was intensely aroused; why such a success? A little later I was asked to make an operation on the brother of one king of canines, so I watched him with interest while his brother was on the operating-table, and more genuine and sincere evidence of kindness of heart I have never seen in the operating-room. Kind-

ness is a great power over dogs as well as men. Wishing to know still more of such a character, I asked him to show me his 'dog school,' which contained seventy-eight dogs, some ponies, and a few monkeys. While doing so, he explained to me that he could teach them very little until he broke them of the habit of eating meat; that they were sullen, irritable, and vicious so long as their diet contained meat. Such food developed the brute, not the intelligence, of the animals."

THE educational process begins with very tender baby flesh, and ends with pretty solid men and women. It is not one day too long if it lead irresistibly to the radiant life. It is many years too long if it lead to ill health, to apathy, to hopelessness, if it lead to loss of initiatory power, to pedantry, to conventionality, to cowardice.— *C. Hanford Henderson.*

### Tuberculosis among the Queen's Cows.

Last winter it was discovered that thirty-six out of every forty of Queen Victoria's dairy cows were tuberculous, notwithstanding the fact that the premises in which these cows were kept are probably the best in the kingdom as regards space, light, ventilation, and cleanliness. It was finally decided to slaughter the entire herd, and only such cows were admitted to the new herd as did not react to the tuberculin test.

## BECAUSE A BIRD SANG.

BECAUSE a bird sang ere the raindrops were dry
Or sunbeams had driven the clouds from the sky
A dark life was brightened, a faint heart made strong,
For trustful and glad were the tones of that song.
He sang till he quickened a hope that was dead
By singing that song on the roof of the shed.

The hope had been buried so long that I deemed
'T was only some beautiful thing I had dreamed.
It quickened and started and wakened once more
And filled with the visions that charmed me of yore,
So gladsome the tune and the words that he said,
That bird in his song on the roof of the shed.

—*Hilda Muirhead, in Ladies' Home Journal.*

THE PROBABLE SEQUEL.

Because this bird sang, a rich blessing was given
That raised good Hilda to the brightness of heaven.
But there came from a neighboring summer resort
A Divine with a gun "to enjoy a day's sport."
He fired at the bird that salvation had brought
To the heart of a friend, and thought it "good sport."
That bird can no more sing on the roof of the shed,
Its sweet voice is now hushed: the poor bird is dead.

—*H. S. C., in Food, Home, and Garden.*

# EDITORIAL.

## WATER DRINKING AS A REGULATOR OF NUTRITION.

FULLY one half a century ago, Liebig, the father of physiological chemistry, called attention to the value of water drinking as a regulator of the nutritive processes. His attention had probably been called to the subject of water drinking by the great stress laid upon this procedure by Priessnitz, the hydropathic empyric, and his disciples who then, as now, were to be found in almost every city and village of German-speaking countries. The swallowing of twelve or fifteen glasses of cold water before breakfast, as practised by many of the invalids who visited Priessnitz at Graefenberg, was an excess which must have frequently resulted in more or less injury, but it must be remembered that not a small proportion of the persons who imbibed these enormous quantities of water had previously been accustomed to drink wine and beer in equally large amounts; so the substitution of a wholesome beverage for a positive poison was in the great majority of cases attended by some evident improvement.

Within the last dozen years the imbibition of great quantities of hot water has come to be almost a medical fad, and is a practise which as a routine procedure has no better scientific basis than the cold-water drinking of the German water-cures, and is indeed, on the whole, likely to prove more harmful because of its debilitating effect upon the stomach; for of the two, cold water, unless taken in very large quantities or at meals, is decidedly less harmful to the stomach than hot water, since it produces a tonic reaction instead of the debilitating effect which results from hot-water drinking.

Drinking hot water forty or fifty minutes before eating, in moderate quantities, as from one half to two thirds of a glassful, is certainly a good remedy for gastric catarrh, a disorder which is becoming exceedingly common, existing, as it does, in a large proportion of all cases of chronic dyspepsia, and taxing the patience of the ordinary practitioner in his attempts to arrange an appropriate and acceptable dietary. In hyperpepsia, also, one half a glass of hot water forty minutes before meals and the same quantity two or three hours after meals is highly beneficial; but in all other classes of cases water prescribed with reference to local effects is better administered at the ordinary temperature.

But we wish especially to call attention to the office of water as a general regulator of the nutritive processes. The physiological theories of Van der Hoff, Pfeiffer, and Blogden have thrown considerable new light upon the metabolic and catabolic processes of the body. They have shown, for example, that, if not absolutely ruled by laws relating to osmotic tension, the absorption of digestive products and the exchange which takes place in the tissues present phenomena which certainly conform to these laws in a remarkable way; and they have led to some important results in the development of new diagnostic measures and in calling attention to important therapeutic indications. This is especially true as regards disorders of the kidneys. The investigations referred to have shown that ordinarily the value of the coefficient of osmotic tension is nearly three times as great in the urine as in the blood, and this relation remains practically uniform; while in renal disease this relation is reduced to less than half the normal figure, and the osmotic tension of the urine barely equals that of the blood, in fact occasionally falls below it.

Korganyi has made a careful study of the factors which enter into the relation of osmotic tension in the body, and has shown the

necessity for the maintenance of the osmotic tension of the blood at the normal standard. According to this author, the kidneys, intestines, alimentation, respiration, skin, and the red blood-corpuscles form a vital circle of processes which are continually draining the osmotic tension of the blood toward that of the lymph, and the lymph toward the intercellular fluid; and by this means regulate not only nutrition, but all the processes of secretion and excretion necessary to sustain the body in health.

Without water, it is as impossible for the body long to maintain the normal standard of osmotic tension as for the ancient Israelites or the modern Mexicans to make their sun-dried brick without straw. Water is the one thing whereby tension may be diminished or increased as the vital needs may indicate. Too great tension requires dilution, and more water must be added. Low tension, on the other hand, requires less water, which readily escapes through the skin and kidneys. One of the most important rôles played by the kidneys seems to be this very regulation of the osmotic tension of the blood. The kidneys thus become a powerful factor in controlling all the nutritive processes of the body.

From this it clearly appears that water drinking can not be practised indiscriminately. The amount of water drinking for the system must be regulated by its needs, as shown by the condition of the blood. Unfortunately, we have not as yet any rapid, convenient, and accurate method of determining the osmotic condition of the blood in human beings. A fairly accurate judgment of this condition, however, may be formed from the microscopical condition of the blood, and by the chemical or physical examination of the urine. With high osmotic tension the red corpuscles of the blood diminish in size; with low osmotic tension they increase in size. As before stated, the osmotic tension of the urine is about three times that of the blood.

The specific gravity of the urine is something of an indicator of the state of the blood, as it is an extract of the tissues; but the most accurate method of determining the osmotic tension of the urine is found to be the determination of its freezing-point. The lower the freezing-point, the higher the osmotic tension. For practical purposes, and until more convenient methods of diagnosis have been perfected, the specific gravity may be taken as an indication of the osmotic tension of the blood. A low specific gravity resulting from renal insufficiency naturally means a high osmotic tension of the blood instead of the opposite ordinary indication.

How these indications may be met is a question of the highest practical importance, as every function of the body depends upon the proper regulation of the osmotic tension of the blood. In both cases one remedy is especially indicated; namely, copious water drinking. The thickened blood must be diluted. The effect of copious water drinking in these cases is exceedingly remarkable. In cases in which the specific gravity of the urine is too high, the natural effect of free water drinking is to lower the specific gravity; while in cases of renal insufficiency there may be observed not infrequently an actual increase of the specific gravity as well as of urine produced, showing an increase in the elimination of excretory products.

Water drinking is equally useful in cases of hepatic insufficiency. The quantity of water taken daily must be carefully regulated by frequent examination of the urine; not only of the morning urine, or that passed immediately upon rising, but the whole quantity of urine passed during twenty-four hours. For many years it has been the writer's custom to make examinations of this kind, and the results have been found of great practical value and importance. The quantity of water must vary, of course, according to the weather, the amount of activity, the sort of treatment administered, especially if the patient is being subjected to hydriatic processes whereby the activity of the skin is greatly increased. In water drinking, if properly managed, the physician has certainly at hand one of the most powerful means of regulating all nutritive processes, and one which can be employed with perfect safety.

The best time for taking water is ordinarily one hour before eating and three or four hours after eating. It is a good plan for patients to take a glass of water at bedtime and a glassful on rising in the morning, and to divide the quantity during the day as much as possible, so that the stomach may not at any time be overloaded with liquid. In cases in which a sufficient quantity of water can not be taken by the stomach without inconvenience, the necessary fluid may be received through the colon. In cases of this sort, a small injection of water at the temperature of the body may be administered at bedtime after the patient has retired. By means of a fountain syringe, one or two pints may be slowly introduced into the rectum, care being taken to pass the tube as far into the bowel as possible, and to hold the fountain not higher than two feet above the level of the bed or couch upon which the patient is lying, so that the introduction of the fluid may not be sufficiently rapid to provoke an expulsive action.

## THE ALARMING INCREASE OF INSANITY.

THE fact that insanity is increasing at a most astounding rate is receiving less attention than it deserves. Insanity is not simply a disease of the mind, as it was once regarded, but is the result of morbid physical states—the Hippocratic idea, which prevailed among intelligent Grecian physicians for several centuries before Christ, but was lost sight of during the Dark Ages. As regards the increase of insanity, which is only one of the indications of a rapid race deterioration, here are a few facts gathered from different reliable sources: In England at the present time the number of insane is 3 to the thousand. Thirty years ago, the proportion was 1.8 to the thousand. In Ireland the proportion is greater, or about 3.6 to the thousand; while on the Isle of Man the proportion reaches 3.7. In Scotland the proportion of insane to the sane at the present time is 1 to every 337, or nearly 3 to the thousand. Twenty years ago the proportion was 1 to 448, or 2.2 to the thousand. In Schleswig-Holstein the number of insane has suddenly increased during the last century, as shown by the fact that in 1803 the proportion was 1.1 to the thousand, while in 1840 the proportion was increased to 2.8, and in 1880 to 3.4. Theo. Kirchoff, in his "Handbook of Insanity," published in 1893, asserts that the increasing prevalence of insanity is an undoubted fact, and states that 5 insane to the thousand inhabitants is "probably below the truth," there being a large number of persons at large suffering from insanity, but of such a type that we do not deem it necessary to confine them in asylums.

These alarming facts ought to give rise to some very earnest and practical thinking. Why with all our improved conditions of life are we so rapidly deteriorating mentally? Is it not well to inquire whether our methods of mind training are right; and whether our methods of feeding our bodies are such as are calculated to make good brains, considering that brains are made of what we eat?

Crime as well as insanity is increasing, as is shown by the statistics of the leading countries of the globe. In 1896 the number of lynchings was forty per cent. greater than the legal executions, a state of things which has existed for a number of years. It is also stated on good authority that not more than one murderer in fifty is ever executed. According to *Leslie's Weekly*, from which the foregoing is gleaned, "the proportion of criminals to the population is several times what it was fifty years ago." That poverty is not the cause of crime is pointed out by the chief constable of Manchester, England, who confirms the statement by Garozalo that statistics show that there is a greater proportion of crime committed by the well-to-do than by the poor; according to Roland Falkner, the native-born American citizen is more addicted to crime than is the poor emigrant from Europe. The twelfth annual report of the Scotch Prison Commission showed that the prison population was greatest when pauperism was least.

A writer in the *London Quarterly Review* for 1896, briefly discussing the subject of crime in England, quotes Lombroso, Quatelet, and a large number of other authorities, to show that education does not diminish crime, and asserts that "there never was a time when crime was so frequently committed by persons of good education as at the present time." "Within the last decade the total number of offenses of all descriptions has suddenly and vastly increased." In France the population increased twenty per cent. in sixty-one years, while crime increased three hundred per cent. In Germany the increase in population in six years has been four per cent., while the increase in crime is sixteen per cent. In Austria the increase in population in seventeen years has been fourteen per cent., while the increase in crime has been more than four hundred per cent. These facts we have quoted from Ferri.

In Liverpool the whole number of persons arrested and tried for crime doubled between the years 1884 and 1893, while the population was actually diminished by more than fifty thousand. Crime, as well as lunacy, is also increasing in London, and to such an extent that London requires one policeman to every 349 of its population to maintain social order.

The increase of crime is a sure indication of both physical and moral decay. Civilized man, then, is not climbing up, but sinking down; and we may well ask the question, "Is civilization a failure?" If civilization does not make a man better physically, mentally, or morally, in what way is it a success? But we believe that it is not civilization as a whole, or in general, that is working the ruin of the race, but some accompanying evils or mischievous influences which, while connected with our modern civilization, are not an essential part of an enlightened civilized state of society, but are the result of the cultivation of abnormal and pernicious tastes and appetites whereby the natural instincts are destroyed.

The average savage lives nearer to nature, not only as regards his environments, but as regards his personal habits, than does the city dweller. The banana-eating Indian of the South American forests is a far better animal than the London banker who dines on English roast beef; and he sees more of life, and enjoys it better. He can run a hundred miles without stopping to eat or rest, if need be. He can swim a cataract. He can sleep out of doors without shelter, night or day, and never take cold. The malaria-infested swamps have no terrors for him, for he is proof against the parasites which produce chills and fever. He has bright eyes, a healthy skin, an unfailing appetite, a sound digestion, and a better chance to live two hundred years than the banker has to live sixty. The city man is a deteriorated man all around. He is a slave, a chattel. He squanders his best energies in gathering money, and then sits down and watches it the rest of his life to see that no one else gets it away from him. And he imagines that he is having a good time, because he sees so many other people who seem anxious to get his "job" away from him. If no one else cared for his money, he would not care for it himself. If his guineas had no more value in the eyes of other people than cobblestones or oyster shells, he could not be induced to spend his whole life standing guard over them, but would cast them out to be trodden under the feet of men, and would take to the woods, and have a good time like his wild brother, which would be a much more sensible thing to do. The average savage certainly has a much better chance for his life in this world than the average business man, and his chances for the future may be quite as good.

Let us take a sane view of this matter, and see how much of the artificial, the abnormal, the senseless, and the health- and mind-destroying elements might advantageously be dropped out of our daily routine of life. There is a divine order which leads upward instead of downward. Man seems to have lost his way. We need a Moses to lead us out of the Egypt of bad habits and physical decay into a land of physical and moral healthfulness where Egyptian maladies do not prevail, and where none need say, "I am sick;" because all shall know the way of physical uprightness, and shall walk therein.

# NERVOUS ENERGY AND COLD WATER.

THE establishment in modern times of laboratories for psychological research has been the means of throwing much light upon the character of mental and nervous activity. Nervous energy no longer means an intangible, mysterious something, as formerly, but, as has been clearly demonstrated by laboratory researches, is immediately and definitely connected with material elements found in the interior of the nerve cell. For example, a nerve cell, when in a state of rest, shows a large number of grayish granules, which have been shown to be intimately connected with the storage of energy; so that when the granules are abundant, the cell is like a fully charged battery, ready to discharge under the influence of the right sort of stimulus the maximum of energy which it is capable of exhibiting. On the other hand, when the cell is fatigued, as after prolonged, energetic work, the granules are found to be very few and small.

With these facts in mind, it is easy to comprehend how such disappointing results have been obtained by the use of strychnia and the great variety of medicinal agents and so-called nerve tonics, since it is evidently impossible that these drugs should in any way increase the store of energy in the cell; the most that can be expected of them is the excitement of the cell to activity when it has become exhausted to such a degree that a sense of fatigue supervenes as a warning that the store of energy is reduced to such a point that any further discharge of nervous energy is dangerous, and a rest is imperatively demanded.

The only way that the energy granules of a cell can be augmented is by the assimilation of food from the blood or the development of energy-containing particles. Cold water surpasses all other agents in its power to promote the normal energy-storing processes. Cold applications also to a very remarkable degree facilitate the discharge of nervous energy when a sufficient store exists, but may not be available because its application to useful work is hindered by the paralyzing influence of retained excretions or nerve-benumbing toxins generated within the tissues or absorbed from the alimentary canal. This effect of water upon muscular energy is readily apparent in the sensation of well-being, buoyancy, and a readiness for exertion which results from the application of cold water.

The tonic effects of cold water are unquestionably due to a large degree to the stimulating influence of cold impressions acting through the skin upon the sympathetic nerve centers. The great sympathetic nerve controls the blood-vessels, glands, heart, the functions of secretion and excretion, and, in fact, all the vital functions of the body. The awakening of the sympathetic nerve to renewed activity is the thing that is specially needed in the great majority of chronic invalids. The functions of the brain and spinal cord, and through them all forms of nervous activity, are to a wonderful degree influenced by the sympathetic nerve. The sensation of well-being which accompanies the reaction following an application of cold, is largely due to the increased activity of the cerebral circulation, brought about through the intermediary of the sympathetic. By its power to influence the sympathetic, hydrotherapy is capable of controlling, augmenting, restraining, reorganizing, all the processes of organic life, and through them of controlling the functions of animal life to a marvelous degree.

Cold water is a physiological tonic, and has the advantage over medicinal tonics of all sorts, in that it awakens nervous activity without the imposition of any extra burdens upon any vital organ, and without hampering the activity of any function. The cold bath employed in such a manner as to produce tonic effects, accomplishes its results by increasing vital resistance to the causes of disease and pathological processes, by making the wheels of life run more smoothly, by lifting the whole vital economy upon a higher level. The impression made upon the skin, with its vast network of sensory, motor,

sympathetic, vasomotor, and thermic nerves, arouses every nerve center, every sympathetic ganglion, every sensory and motor filament in the entire body, to heightened life and activity. Every blood-vessel throbs and every cell quivers with a new life, the whole body thrills with quickened impulses, the whole being is translated into a new state of existence.

A person who has never experienced the glow and exhilaration, the invigoration and buoyancy, of body and mind which accompany the state of reaction from a short, vigorous cold application, can not well appreciate either the value or the significance of the cold bath as a physiological stimulant, as a restoring and invigorating measure. It is not too much to say that the cold bath is, of all measures known to man, the most valuable as a means of rousing to activity the flagging energies of the body and lifting the enervated invalid out of the morasses and quagmires of chronic disease.

### Paralyzed his Arm.

Two vegetarian physicians were invited to attend the annual banquet of a physicians' club. The doctors, of course, had a great supper, but the two vegetarians sipped water, ate graham bread and crackers,—and talked. Opposite them at the table sat one of the leading physicians of the city. Noticing that they did not eat meat, he remarked: "Well, you are all right; nevertheless I propose to have a good time. I am a great meat eater. I know meat hurts me; though I expect to shorten my life by eating meat, I intend to have a good time while I do live.

"A few weeks ago," he added, "we had a beefsteak prize supper. Fifteen others ate sixty-five pounds of beefsteak. I won the prize by eating seven and one-half pounds. When I went home, my left arm was so stiff with gout that I could not raise my hand. I did not get over it for three or four weeks, but I propose to enjoy myself."

One of the vegetarians responded: "So do I. I am having a good time without eating beefsteak." "Well," said the other, "I must admit you do look as if you enjoyed life pretty well."

This prodigious beef eater was pale, sallow, and looked miserable; he had a gouty complexion as well as gouty joints; not only this, he had gouty kidneys, gouty liver, gouty brain, gouty heart, and it looked as if his soul were gouty, too. He was addicted to beefsteak as some men are to whisky.

This beefsteak appetite is a monster. It is destroying more men and women in this country to-day, in my opinion, than anything else except those giant poisons,—alcohol and tobacco; it may be that it outranks these in its power for mischief, for it certainly prepares the way for the stimulant habit, as Dr. Haig, the eminent English authority on uric acid, has clearly shown.

### Electric Light and the Skin.

Electric light is resurrected sunlight, hence the electric-light bath is a sun bath. Sunlight vitalized the trees, which were afterward converted into coal, and this, through the dynamo, produced electric light, and thus the sun shines out again. Electric light has all the properties of sunlight: it will cause grain to grow; it will make strawberries ripen; it gives color to leaves, and will produce heatstroke,—it will do everything in a therapeutical and physiological way that sunlight will. The body has two skins, the outer skin, and the lining, or mucous membrane, so that it is really enclosed in a double sack or bag. The outer skin and the mucous membrane are closely connected by nerves; hence if a man burn the outer skin over the stomach, he suffers from the injury done to the lining membrane of that organ. For pain in the stomach fomentations are applied to the outer skin, thus drawing the blood away from the mucous membrane, and relieving the pain.

Suppose there is a generally diseased and disordered mucous membrane, as is often the case. The electric-light bath brings the

blood to the surface, vitalizes, stimulates, and increases the activity of the skin. The radiant heat strikes deep into the body, and awakens the little cells which produce perspiration; these sweat-glands are stimulated by the electric light and heat just as the rays of the morning sun stimulate the leaves and the flowers. Hence the electric-light bath is a valuable agent in keeping the skin clean, healthy, and active.

### Infection by Means of Flies.

As the warm season is upon us, it is well to call to mind some of the special dangers to human life which come with the summer months. One of these of not the least importance is the presence of the common house-fly. It has long been known that flies may be the means of communicating the germs of various infectious diseases, such as erysipelas, hospital gangrene, and even tuberculosis and leprosy. The lamented Father Damien is said to have become infected with leprosy through the mischievous agency of flies.

But Dr. Grassi a few years ago discovered that flies are not only the conveyers of vegetable parasites, as germs, but that they may also be the means of infecting human beings with the eggs of various intestinal parasites, and in the most peculiar manner, as was shown by numerous experiments conducted by Dr. Grassi. For example, he exposed in his laboratory a plate containing a great number of eggs of a human parasite, the *tricocephalus dispar*. Some sheets of white paper were placed in the kitchen, which stands about ten meters from the laboratory. After some hours, the usual little spots produced by the feces of flies were found on the paper. These spots, when examined by the microscope, were found to contain some of the eggs of the tricocephalus. Some of the flies were then caught, and their intestines presented large numbers of the ova. Similar experiments with the ova of the *oxyuris vermicularis* and of the *tænia solium* afforded corresponding results. Shortly after the flies had eaten some moldy cream, the *Oidium lactis* lactis was found in their feces.

Dr. Grassi mentions an innocuous, and yet conclusive, experiment that every one can try. Sprinkle a little lycopodium on sweetened water, and afterward examine the feces and intestines of the flies. Numerous spores will be found. As flies are by no means particular in choosing either a place to feed or a place to defecate, often selecting meat or food for the purpose, a somewhat alarming vision of the possible consequences is raised. Dr. Grassi invites the attention of naturalists to the subject, and hopes that some effectual means of destroying flies may be discovered.

### Fifty Years a Vegetarian.

An old gentleman in New York State has written GOOD HEALTH a very interesting account of his experience as an abstainer from flesh-foods for almost fifty years. We are confident that our readers will enjoy the story in his own words:—

"I am often asked, 'How do you live? you eat so little, and especially no meat.'

"Well, to begin with, I was called a weak child, and was brought up to think much meat was necessary to existence. My health failed entirely at nineteen, so I could not work on the old farm. I made a drug-store of my stomach for six years; was told by doctors I must take more 'stomach medicines and more nourishing food.' I gained strength enough to manage school for three winters.

"In February, 1850, I changed my boarding-place. I had been used to meats on the table about every meal. I now roomed with a young man who used no flesh-food of any kind; was with him seven weeks without tasting meat or anything prepared with it, and have made no change from that time up to the present. I did not gain any strength for over a year. Raw, mellow apples were about the only thing I could eat for weeks at a time. The following winter my digestive powers were much weaker.

"In the spring of 1851 I went into a store as clerk, living a mile away, and for six months made the store my home from Monday morning till Saturday night, having no warm meals except Sundays. I lived on milk, graham bread, crackers, and any and all

kinds of fruit, not even using a particle of butter, cheese, or anything that bore any resemblance to flesh-food except milk. At the end of six months I left the store, and never felt better.

"After this I taught school for four seasons, then traveled over eleven towns, in charge of one hundred and fifty-three schools for four and one-half years.

"From 1861 to 1864 I took charge of a lumber mill, employing about twenty-five men and doing all blacksmithing and general repairs.

"Since that time I have built twenty-four heavy river bridges, hewing most of the timber myself, and making bolts and rods. Since 1853 I have carried a compass to survey more than two thousand farms in thirteen different towns; and now, although seventy-four years old, I can go into the fields and work all day. My nerves are steady enough so that I can write as fine a copy hand as I could forty years ago.

"During the forty-nine years I have lived on a vegetable diet, I have been from home nearly or quite half the time, subject to all kinds of cookery, but have eaten no flesh-food. ALLEN WIGHT."

## ANSWERS TO CORRESPONDENTS.

**Diet for Disordered Stomach.**— L. S., Washington: "On examination of my stomach fluid, I find too much gastric juice and lactic acid, considerable mucus, and insufficient hydrochloric acid. 1. What diet would you advise? 2. Would gluten mush be better for me than other mushes? 3. Would you advise the use of the stomach-pump? 4. Is the addition of lemon-juice to hot water beneficial in such a case? 5. How many meals a day should I take?"

*Ans.*— 1. It is an error to suppose that you have too much gastric juice if the amount of hydrochloric acid is deficient. There may be too much fluid in the stomach, which indicates that the stomach does not empty itself as readily as it should. A diet of fruits, grains, and nuts is advisable. Take the food dry. Protose, granose, gran-nuts, nuttose C, the various malted nut preparations, would also be advisable.

2. Do not use mushes of any kind. Gluten is best taken in the form of nut-gluten biscuit.

3. The stomach-tube should be used once or twice a week, so that the stomach may be kept as far as possible free from mucus.

4. A little lemon-juice may be used without harm in cases of this sort, but not at meals. Hot water should be taken three quarters of an hour or an hour before the meal.

5. Two, seven hours apart.

**Fat — Grape-Nuts.**— E. G. W., Iowa: "1. What diet should one follow who wishes to become thinner? 2. What foods must be avoided in the above case, and why? 3. What is the nutritive value of grape-nuts, and is it thoroughly cooked in the form in which it is offered for sale?"

*Ans.*— 1. Restrict the diet to one or two articles of food, taken dry. Eat as little as possible without discomfort. Exercise enough to get thoroughly tired every day. If a sufficient amount of exercise can not be taken at one time, then exercise several time a days.

2. Foods containing sugar or starch in large quantities must be avoided. The most important point, however, is to take food in small quantities, and take a large amount of exercise.

3. From what we have learned of the composition of grape-nuts, we judge it to have about the nutritive value of fermented bread combined with New Orleans molasses or glucose syrup. It contains neither grapes nor nuts. The claims made for this so-called health food are prodigiously absurd.

**Kellogg Sanitas Bath Cabinet.**— E. W. C. asks what we know of the Kellogg cabinet bath.

*Ans.*— The Sanitarium, the Good Health Publishing Co., and the Sanitas Nut Food Co. have nothing to do with the manufacture of this bath. We can not recommend the business methods of this concern.

**Walking on the Balls of the Feet.**— A teacher of elocution asks if the habit of walking on the toes will produce any bad effects. She finds it very common among pupils, and says that it is almost impossible for them to cultivate an easy, graceful walk.

*Ans.*— The habit is probably not particularly injurious to health, but it ought to be corrected by walking exercises. A graceful carriage is of no small hygienic value.

**Weak Back — Hot-Air Treatment.**— Mrs. H. S. K., Washington, asks what treatment to take

for weak back accompanied by nausea. She also wishes our opinion of hot-air treatment.

*Ans.*— There is probably displacement of some of the abdominal or pelvic viscera. A skilled specialist should be consulted. Hot-air treatment is not likely to be of benefit. Abdominal massage, postural treatment, Swedish gymnastics, a sitz bath at 90° for fifteen minutes daily, are measures likely to be helpful.

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**Rice.**— R. H., Pennsylvania, remarks that hygienic reformers desirous of full value in provisions are dissatisfied with "extra cleaned rice," for the process removes vitally important elements. He asks where discriminating vegetarians may procure the physiologically correct article.

*Ans.*— In this country we are practically confined to one variety of rice,— that which is commercially supplied. In China, several varieties of rice are supplied, some of which are greatly superior to others in the amount of protein which they contain. The so-called "mountain rice," that grown in a high dry place, is considered the best from this point of view. The amount of nitrogen necessary to furnish a balanced diet may easily be procured, however, from nuts and legumes, which are plentiful and cheap in this country.

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**Ulcerated Stomach — Barley-Water.** — "A. A.," Georgia: "1. What is the best home treatment for ulceration of the stomach? 2. Would it be beneficial to drink a cup of hot water half an hour or so before meals? 3. Is barley-water healing in such a case? The ulcers appear in the mouth at intervals of a few days or a week, and are small."

*Ans.*— 1. Ulceration of the stomach is too serious a condition to be successfully treated at home. The patient should place himself under the care of an experienced physician, preferably in a well-equipped sanitarium.

2. Probably not.

3. Barley-water is not especially healing in such a case. If the ulceration of the mouth is the only evidence of the ulceration of the stomach, the diagnosis is probably wrong; the case is probably one of simple indigestion, which may be cured by the use of a dietary consisting of fruits, grains, and nuts properly prepared.

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**Indigestion — Foods — Fruits — Butter.** — J. C. F., New Jersey: "1. What kind and amount of food and exercise would you recommend for general debility, constipation, and indigestion of starch of three years' standing? 2. Is it harmful to eat granose flakes mixed with dry malted nuts? 3. Is it advisible to eat fruits with granose? If so, what kinds? 4. Is the cane-sugar in prunes and dried peaches injurious to the system? 5. Is butter spread on zwieback harmful when the stomach does not rebel?"

*Ans.*— 1. Send a dime for a copy of our little booklet, "Balanced Bills of Fare," requesting when you order that a proper dietary be marked for you.

2. No.

3. Granose agrees well with all kinds of fresh fruits, except in cases of chronic gastritis, in which acid fruits must sometimes be avoided.

4. There is no cane-sugar in either prunes or dried apples, unless it is added in the cooking.

5. It is better to take fat in the natural emulsified state in which it is found in nuts. Butter is no more digestible than lard. The practise which many have adopted at the present time of using such meretricious substances as cottolene, nutcoa, and other forms of grease, whether animal or vegetable, is highly injurious to health. If one has to use free fat in any form, sterilized butter is as good as anything, and more digestible than most of the products offered on the market, some of which are made from rancid and unwholesome materials. Fat separated from soap grease, rancid butter, and other sources, though pronounced chemically pure after having been subjected to various chemical procedures, might be as wholesome as fat from rancid and decomposing coconuts; both are unfit for use in a human stomach. The most important objection to the use of butter, lard, and tallow is not that they contain germs, but that they are separated fats, and can not be digested in the stomach, thus interfering with the digestion of other foods. Cottolene, nutcoa, and a whole list of similar foods are objectionable on these same grounds, and not to be recommended.

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**Quaker Oats — Buttermilk — Molasses — Brazil Nuts — Bananas — Grape-Nuts — Crackers.**— J. E. M., Connecticut, asks: "1. How long should Quaker Oats be cooked in a double boiler? 2. Would they be good steamed and then browned in the oven? 3. Is buttermilk good after it is two or three days old? 4. Is molasses wholesome, and what food value has it? 5. How long should Brazil nuts be cooked? 6. Are bananas as good when the skin is black? 7. Is grape-nuts, made by the Postum Co., Battle Creek, a good food? 8. Are the ordinary crackers sold in the stores wholesome?"

*Ans.*— 1. Six or eight hours at least. Oatmeal can not be properly cooked by boiling.

2. This would be something of an improvement.

3. Buttermilk, to be wholesome, should be made from sweet cream, and should be perfectly fresh.

As soon as it gets very sour, or of a bitter flavor, it is unfit for use. It may be kept for three or four days, if on ice.

4. Molasses is very poor food. It is concentrated cane-sugar, and produces indigestion. It is better to employ sweet fruits or predigested cereals, in which the starch is converted into maltose, a sweet substance which is physiological in its relations to the body.

5. We have had little experience with Brazil nuts. For proper digestion they do not absolutely require cooking, but rather thorough crushing, to render them thoroughly miscible with the contents of the stomach.

6. Bananas are most wholesome when thoroughly ripe, but if they have begun to ferment and decompose, they are unfit to eat.

7. See answer to E. G. W., of Iowa, in this number.

8. No.

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**Peanuts — Dried Pears — Dates.**— O. S. J., Illinois: "1. Are ordinary roasted peanuts as obtained from a street vender digestible and nutritious as an article of diet? 2. If not, what simple method will render them so? 3. Are ordinary roasted chestnuts wholesome? 4. Are the dried pears found in groceries digestible if well chewed? 5. Are they not simply ripe pears in a dried condition? 6. Has the common preserved date any value as a food?"

*Ans.*— 1. No, they are very objectionable.

2. Roasted peanuts can not be rendered easily digestible. They partake of the nature of fried foods. For methods of preparing peanuts to render them digestible, we would refer to "Every-day Dishes," and also to the little booklet, "One Hundred and Twenty Ways of Preparing Nuts for Use as Food," by the Good Health Pub. Co. See also reply to W. M. C., of Utah, in the June number.

3. Yes.

4. Dried pears are wholesome, but should be well cooked.

5. Yes; bleached pears have been subjected to the action of burning sulphur, and are on this account less wholesome than those which have not been subjected to this process.

6. Yes, it is a wholesome food.

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**Paine's Celery Compound — Insomnia — Nut Preparations.**— C. H. W., Wisconsin: "1. Has Paine's Celery Compound injurious properties in it? 2. What are some remedies for insomnia? 3. What nut preparations are there that one of ordinary means can afford?"

*Ans.*— 1. It is a medicine pure and simple, and all medicines are unwholesome for a steady diet.

2. Any drug which produces sleep must necessarily be injurious. Insomnia can not be cured in this way. A full bath at from 92° to 96° from half an hour to an hour and a half before retiring is one of the most valuable of all means for inducing sleep. Eat nothing after four o'clock, unless it be a little fresh fruit.

3. Address the Sanitas Nut Food Co. for circulars. By purchasing nut foods in quantities, the cost may be considerably lessened. They are, however, at retail price, cheaper than meats, on account of their high nutritive value.

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**Acid Fruit — Drinking at Meals.**— L. H. G., Massachusetts: "My suppers and breakfasts consist of ripe tart apples, English walnuts, stewed prunes, grapes, and five spoonfuls of grape-nuts softened with hot water. 1. Is this diet advisable for one who does office work? 2. Is it necessary to eat warm foods? 3. Should one drink something warm or cold before, with, or after such a meal? 4. Will too much acid food injure the stomach in time?"

*Ans.*— Use granose, granola, or gran-nuts. So-called grape-nuts are neither grapes nor nuts; the nutriment is about that of ordinary fermented bread saturated with glucose syrup.

2. No.

3. Not necessarily.

4. No; but persons suffering from chronic gastritis often find it impossible to use acid fruits.

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**Cottage Cheese.**— W. W., New York, asks: "What do you think of cream cheese made by pouring sour milk into a perforated mold and allowing it to stand until the whey drains off and the curd hardens? Is this what you call cottage cheese?"

*Ans.*— Sour milk should be sterilized by boiling before it is fit for use. Thus treated, it is more wholesome than in the form of raw milk. It may then be taken in the form of cottage cheese without the removal of the whey, if desired.

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**Cold Bath — Cold in Head — Fruit with Legumes and Eggs — Graham Bread — Wine — Voice.**— J. E. B. S., Dakota: "1. Is it advisable to take a cold bath every morning in a cold room? 2. What treatment will cure a stubborn cold in the head? 3. Can acid fruit be eaten with eggs? 4. Do you consider wine a good tonic to build up the system in case of dyspepsia? 5. How can the voice be strengthened? 6. After singing for half an hour or more, is it well to eat?"

*Ans.*—1. It is better to take the bath in a warm room. It is not wise to take the bath under conditions which produce severe chilliness.

2. The daily cold bath, plenty of exercise, and the use of the Magic Pocket Vaporizer.

3. Yes, but it is better to substitute nuts for the eggs.

4. No, wine is not a tonic; it is a deceptive agent, producing a sensation of strength without increasing the strength.

5. By proper use.

6. There is no more need of eating half an hour after singing than after any other exercise. Food should be taken at regular intervals.

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**Biliousness — Moth Patches — Effect of Weak Kidneys on the Eyes—Sleep.**—L. W., Massachusetts: "1. What is beneficial for biliousness? 2. Do weak kidneys affect the eyes? 3. If so, how? 4. What is the cause of, and remedy for, moth patches? 5. Are there any treatments in book form that would help me? 6. What will produce natural sleep?"

*Ans.*—1. This is an indication of a foul stomach. A fruit diet for two or three days, taking fruit only for breakfast, going without supper, and using a dry dietary are among the best means for relieving biliousness. Keep the bowels open, if necessary, by the use of the enema daily for a few days. It is better, however, to regulate the bowels by adopting a diet consisting of fruits, grains, and nut preparations, which will very soon eradicate biliousness.

2. Yes; in Bright's disease the first symptoms are often experienced in the eyes.

3. Acuteness of sight is diminished.

4. A disordered condition of the nutrition. Abundance of out-of-door exercise, regulation of the diet, are helpful means.

5. The little book, "The Stomach," and also the "Home Hand-Book" may help you. Address Modern Medicine Pub. Co., Battle Creek, Mich.

6. Good digestion, sufficient exercise to produce gentle fatigue, and, if necessary, a bath at from 92° to 96° for half an hour just before retiring. The moist abdominal bandage is also useful. The latter is applied by means of a towel wrung out of cold water so that it will not drip, and covered with several thicknesses of flannel. The daily cold morning bath may also be employed as a means of improving the general health.

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**The Use of Alum for Purifying Drinking Water.**—S. W., of Michigan, calls attention to the fact that alum has been recommended as a means of purifying impure water by adding from one to one and a half grains of alum to the gallon of water. It is claimed that this precipitates the germs, which may afterward be removed by filtering with an ordinary charcoal filter, filter paper, or absorbent cotton.

*Ans.*—It has been proved by experiments made by Professor Leeds and others that alum used in this way will cause the precipitation of a large amount of albuminous matter, containing germs, etc. Unquestionably, a large proportion of the germs contained in water may be gotten rid of in this way, but it is not to be expected that all can be disposed of, and this should not be relied on as a method of rendering water absolutely pure. It would also be probable that some of the alum might remain in solution in the water, and this of itself is an unwholesome substance. The best way is first to boil the water, and then filter it. This is more trouble, but it is a better method.

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**Paralysis Agitans.**—M. O., New York, asks what is the best treatment for "paralysis agitans," and if galvano-electric treatment or massage is helpful.

*Ans.*—This disease is not usually curable. By improving the general health the unpleasant symptoms may be largely mitigated.

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**Eruption.**—Mrs. M. C., Nebraska, wishes advice concerning her son, who is seventeen years old. For some time water blisters have appeared on the fingers of his right hand, which would dry up, leaving the skin cracked and hard. His body is covered with itching pimples, which seem different from those which appear on his hand. He is otherwise strong and apparently well, and is careful as to diet and bathing.

*Ans.*—Alkaline baths, consisting of full baths containing about two pounds of sal soda, may be advantageously employed in such cases, afterward applying zinc ointment. The bath should be continued for half an hour, at a temperature of from 92° to 96°. This should be continued for several days. Avoid rubbing.

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**Constipation — Voice.**—D. I., Pennsylvania: "1. Please give remedies for constipation. I have stomach trouble which followed an attack of Bell's palsy. 2. Do you think that the difficulty was induced by the palsy? 3. My voice seems to be affected also. Do you think that my condition has anything to do with it?"

*Ans.*—1. The use of proper foods, especially the use of granose and nut foods, will generally relieve constipation speedily. Other means must sometimes be employed We would suggest that you obtain a copy of the little work entitled "The Stomach," published by the Modern Medicine Pub. Co

2. No. It is more probable that the palsy was the result of a disordered condition of the stomach and conditions arising from it.

3. Yes.

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**Pimples.**—J. M. I., Indiana, asks (1) for the cause of and remedy for pimples; (2) if drinking tea has any effect in producing this irritation.

*Ans.*—1. See answer to Mrs. L. A. M., South Dakota, page 435.

2. The use of tea and coffee has frequently caused pimples and other forms of skin diseases by disturbing the digestion.

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**Dyspepsia—Catarrh of the Stomach—Diet.**—W. W. H., Vermont: "1. What treatment shall I pursue to cure dyspepsia, constipation, and catarrh of the stomach? The last-named difficulty makes my mouth very tender. 2. What will relieve the soreness? 3. How can I prevent the formation of uric acid? 4. Is carbonate of soda taken for sour stomach injurious? 5. What diet would you advise for me? A milk diet seems to give the most satisfaction."

*Ans.*—1. We could scarcely reply to so general a question. We should advise obtaining a copy of the little work, "The Stomach," Modern Medicine Pub. Co., Battle Creek, Mich.

2. A bland, unirritating diet, avoiding very acid fruits and coarse vegetables; and fomentations applied daily over the region of the stomach.

3. By a pure dietary and the free use of water, the avoidance of meats, and abundance of exercise.

4. Yes, if the acidity is due to fermentation; soda is sometimes useful in cases where the excessive acidity is due to hyperpepsia.

5. A dry diet, consisting of fruits, grains, and nut preparations, such as are manufactured by the Battle Creek Sanitarium Health Food Co. and the Sanitas Nut Food Co. Milk diet is constipating, and promotes indigestion when long continued. Kumyss and buttermilk are preferable to ordinary raw milk, but nut preparations are still better. Malted nuts and similar preparations may be substituted.

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**Poison in Foods—Pain in the Head—Dr. Sawyer's Femoline Pastilles and Pills—Granose—Peanuts—Falling Hair—Piles—Teeth.**—Mrs. S. A., Nebraska: "1. Is there poison in all kinds of foods? 2. What causes pain in the top of the head, mostly when lying down? 3. Of what are Dr. Sawyer's Femoline (pastilles and pills) composed, and what is their effect? 4. Can granola and granose be made at home? If so, how? 5. Are shelled peanuts, boiled for ten hours, then mashed, and mixed with water, good for a baby ten months old? 6. What will prevent the hair from falling out? What will promote its growth? 7. What is the best treatment for piles? 8. How early should children lose their baby teeth? and should the first teeth be filled when cavities appear, causing toothache?"

*Ans.*—1. No.

2. Probably disturbance of the abdominal sympathetic through indigestion.

3. We have no knowledge of the nature of this nostrum, but our advice is to beware of all nostrums. We know of none of them which have any real curative value. Many preparations of this kind are in the highest degree pernicious.

4. Not without the aid of expensive machinery; but a very fair substitute for granola may be prepared by toasting bread in an oven until slightly browned, then grinding in a coffee-mill.

5. We have never tried nuts prepared in just this way, but see no reason why they should not agree with a healthy child.

6. Improve the general health, and develop a healthy scalp by shampooing with cold water. If dandruff is present, apply a mixture consisting of equal parts of castor oil and alcohol twice a week.

7. Hemorrhoids sometimes need to be removed by a surgical operation. Sometimes the simple application of astringents or antiseptics will afford relief. An excellent application is ichthyol. Cold applications and rest in bed will relieve pain from inflamed bowels.

8. For full description of the development of the teeth see article on page 48 of the January (1899) number of GOOD HEALTH. The first teeth should be cared for the same as the permanent teeth. A decaying tooth is an ulcer, and harbors germs which endanger the health.

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**Coated Tongue.**—H. L. K., England, asks what to do for a coated tongue which was not noticed until after an attack of tonsillitis, so called. Other than an extreme nervousness, the patient is in good health.

*Ans.*—Get well. Live out of doors, take a cold bath every morning, gargle the throat for five minutes with hot water three or four times a day; live on a simple diet of fruits, grains, and nuts.

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**Honey.**—L. C., New York, asks if honey is healthful.

*Ans.*—Honey is unnecessary as an article of food. The use of sweet fruits is in every way preferable to the use of honey or any other concentrated sweet substances. The use of honey is doubtless as objectionable as the use of cane-sugar. It is well, however, to sterilize it by boiling for half an hour in a double boiler, thus killing the germs in it which promote fermentation.

**Pimples and Blackheads.**— Mrs. L. A. M., South Dakota: "1. What is the cause of, and treatment for, pimples and blackheads? What diet is best for such a difficulty? 2. Do you approve of the Cuticura remedies?"

*Ans.*—1. The cause is usually disorder of digestion; pimples are not infrequently an indication of indigestion of fatty foods. Antiseptic charcoal tablets (Sanitas Nut Food Co.) are an excellent and speedy palliative measure. Adopt a diet consisting of fruits, grains, and nuts, perhaps confining the breakfast to fruits exclusively.

2. These remedies are doubtless sometimes useful, but we have never found occasion to rely upon them or to recommend them.

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**Troubles of a Would-be Vegetarian.**—H. P. F., Illinois, wishes to know how one who boards where it is impossible to have health foods served, can become a vegetarian.

*Ans.*— If the writer were in this situation, he would rent furnished apartments and board himself. Everything prepared for immediate digestion can be obtained from the Sanitas Nut Food Co., ready for immediate use.

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**Hot Water — Ho-Ho — Bananas — Meal-Time.**— M. E. I., New York: "1. Do you consider it beneficial to drink hot water? 2. Is it sufficient to cook Ho-Ho fifteen minutes? The food is supposed to have gone through some process of cooking in its manufacture. 3. Are bananas as wholesome as generally supposed? 4. What time of the day is best for eating the heartiest meal?"

*Ans.*—1. Hot water taken in quantities of one or two glasses is of benefit in cases of chronic catarrh or gastritis.

2. No; there is no form of oatmeal offered on the market which can be properly cooked in less than three or four hours. In fact, it is almost impossible by boiling to cook cereal foods in such a way as properly to prepare them for digestion. Cereals should be toasted or dry-cooked so as to brown slightly in order to be easily digested and assimilated.

3. Very ripe bananas are particularly wholesome.

4. For most persons the heartiest meal may be best taken after the hardest work of the day is done, say at 3 or 4 P. M.

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**Malted Gluten.**—F. M. M., New York, asks (1) in what quantities and at what times malted gluten should be taken for neurasthenia, and how it may be made palatable; (2) if it should accompany meals.

*Ans.*— 1. Malted gluten may be taken in quantities of three or four ounces daily, with the addition of a little fruit-juice, or mixed with nut products.

2. Yes.

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**Diet for Hemorrhage from the Stomach.**— F. F., Florida, asks: "1. What diet and treatment should one pursue who has had hemorrhage from the stomach? 2. How is it that a stomach can make more gas when empty than when food is present? 3. How is it that with a clean tongue and a clean stomach (nothing but water returning when washed out), zwieback, granose, nuttose, etc., produce gas and extreme debility and emaciation?"

*Ans.*— 1. The diet should be bland, unirritating, and small in quantity until the stomach is thoroughly healed. Such foods as browned rice, malted nuts, ambrosia, nutta, gran-nuts, and similar foods are to be especially commended.

2. Gas is sometimes secreted from the blood.

3. The case is very probably one of hyperpepsia. The starch should be taken in a predigested form, as in gran-nuts and malted nut preparations, or starch should be avoided altogether by the use of nut-gluten biscuit, protose C, and similar nut products.

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**Throat Trouble.** — G. E. B., Colorado: "About eighteen years ago I lost one of my lungs through an abscess, and for the past seven years I have been troubled with an intense tickling sensation in my throat. This usually induces severe coughing. What remedy would you advise?"

*Ans.*— The constant use of the Magic Pocket Vaporizer, until relieved, also the daily cold bath, and the throat pack at night.

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**Falling of the Lower Bowel.**— R. E., Kansas, asks what is the best treatment for falling of the lower bowel, and if it can be cured.

*Ans.*— An operation is probably required. The application of a cold water enema in the knee-chest position will afford temporary relief.

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**Fermentation in the Stomach.**— E. Z., Illinois: "1. Would you advise an exclusive fruit diet for several meals for fermentation in the stomach? 2. Would small quantities of bicarbonate of soda taken during the day be beneficial? 3. Would irrigating the bowels with warm water and soda do any good? The person avoids all foods that decompose easily."

*Ans.* — 1. In many cases an exclusive diet of fruit will relieve acid fermentation very promptly. Sometimes the stomach is so infected that washing out with a stomach-tube is a necessary preliminary procedure.

2. This is necessary only in cases of hyperpepsia, or excessive secretion of hydrochloric acid, and should never be used in case of fermentation.

3. No.

# LITERARY NOTICES.

**Massage and the Swedish Movements.**— By Kurre W. Ostrom, of the Royal University of Upsala, Sweden. Fourth edition, revised and enlarged. P. Blakiston's Son & Co., Philadelphia. Price, $1.

In the training of chronic invalids back to a condition of health, massage and Swedish movements hold a position in the forefront of therapeutic measures. The one who uses these in conjunction with other rational measures obtains results not obtainable by any amount of drug medication. The author in this little work gives quite clearly the essentials of the various procedures used in massage, and in manual Swedish movements. In the preparation of this work the author has drawn quite extensively from the works of the celebrated Dr. Hartelius. For nurses and others interested in this subject the work is of value.

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**The Abiding Spirit.**— By Mrs. S. M. I. Henry, 316 pages, prices, 40 and 75 cents. Review and Herald Publishing Co., Battle Creek, Mich.

All who are acquainted with either the writing or the work of Mrs. Henry will know that on such a theme as this she would be perfectly at home and at her best. They will, therefore, be glad to read this announcement. To the Christian the gift of the Holy Spirit is the chief of all blessings; because he brings all other blessings in his train. And the Lord's open word to all, "If ye then, being evil, know how to give good gifts unto your children, how much more shall your heavenly Father give the Holy Spirit to them that ask him?" makes this wondrous gift free to every soul, for the asking; for "he that asketh receiveth." Yet it is not so much the receiving, but the *retaining* of the Holy Spirit, that marks the difficulty with most believers. This little book makes it so plain as to be easy for all to understand how to retain the Holy Spirit, so that he shall be indeed "the abiding Spirit." The chief stress of the author seems to be, and the chief value of the book certainly is, in making plain how to meet and co-operate with the Holy Spirit in the common, every-day affairs — the *abiding things* — of life in this world. Therefore, the book is most fitly named "The Abiding Spirit," as every one who will study and carefully follow the instruction in the book may know for himself. Every soul who loves the Spirit and his ways will enjoy reading this book, and will surely be profited by it.

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In "Japan and the Philippines," (the **Atlantic Monthly** for June) Arthur May Knapp analyzes the salient features of Japanese character and policy, and the reasons which make that nation averse to taking the Philippines themselves, but which induce them to welcome our presence there, and to look upon England and the United States as their most natural and best allies and friends.

Jacob A. Riis continues his papers on the poor of New York with an article upon "The Tenement House Blight," in which he pictures the hideous nature and the terrible effects of these places as they formerly existed, and to a great extent still exist in many parts of New York City.

Charles Mulford Robinson concludes his valuable and interesting papers with an article on recent "Æsthetic Progress in American Cities," showing what has been done, not only in the lower departments of cleansing, paving, and policing, and the abatement of smoke and other nuisances, but in the more active direction of beautifying and improving streets, laying out parks, and by various methods making the public ways and places artistic and beautiful, and thereby raising the standard of comfort and behavior for the whole community.

"The Correspondence of Sidney Lanier and Bayard Taylor" shows the friendship of these two men, and makes a charming memorial of friendliness, mutual appreciation, and the grace of high thinking. In this correspondence, literature (poetry in particular) is discussed in a most interesting way.

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The **Outlook** publishes annually in June a special illustrated issue, called its "Recreation Number." This year the eleventh of these numbers appears. As usual, it is devoted chiefly to out-of-door topics, and includes many illustrated articles of seasonable interest. "The Golfing Woman," by Mr. Van Tassel Sutphen, is a warm plea for golf as, above all other games, a sport in which women can play on a plane of real competition with men, because of the handicap possibilities. There are portraits of Miss Hoyt, Miss Griscom, and other famous women players, and several picturesque golfing scenes. The "America's" Cup Race for 1899 is treated by Mr. W. J. Henderson, probably the best yachting writer in the country. Four full-page pictures of famous yachts (including one of this year's defender, the "Columbia") and of famous yacht races give the magazine a breezy, seagoing atmosphere. A cheerful article on "A New England Country Road," by Professor Bailey, of Cornell, is beautified by a dozen or more really remarkable photographs of typical New England scenes taken by Mr. J. Hor-

ace Mc Farland. A charming and humorous story of Canadian life by Macdonald Oxley, several summer poems, an excellent article of suggestions for foreign travel, and other features, make up a magazine fresh with vacation flavor and attractive to the eye. The cover design, by Mr. Harold Brown, is in close keeping with the character of the number. The Outlook Company, New York, $3 a year.

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The complete novel in the June issue of **Lippincott's** is entitled "Green Withes," by Jeannette H. Walworth. This is a tale of strong human interest, touching, as it does, on one of the vital questions of to-day. The snapping of the green withes of convention and the inevitable awakening are told in a forceful and interesting way, calculated to arouse the reader's deepest sympathy. A truly delightful article on "The Summer's Birds," by Dr. Charles C. Abbott, will be found entertaining, as well as useful, in country walks this summer. "Chemistry in the Kitchen," by Albert G. Evans; "The Samoan Feast of Pilaui," by Owen Hall; and "Fires in Metalliferous Mines," by John E. Bennett, are all timely papers. Of course we can not agree with all the ideas expressed by Mr. Evans, but there is much that is good in his article. Shorter fiction is well represented by Dora Read Goodale in "The Opera-Glass," and by Rollo Ogden in "Scientific Reader." Theodore Gallagher contributes a story of life in a miner's camp, called "Father Mc Grath;" and Alice Miriam Roundy writes of "King Mc Dougal's Kitten." The verse of the month is by Margaret Gilman George, Geraldine Meyrick, and Eliza Calvert Hall.

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**Scribner's Magazine** for June opens with a richly illustrated article by Cecilia Waern, who describes the wonderful advance in art made by her fellow countrymen under the title of "The Modern Group of Scandinavian Painters," and discusses such eminent artists as Thaulow, Larsson Zorn, and many others, samples of whose works are given in excellent engravings. The number is very strong in short stories. Stevenson's letters in this number were written from a Swiss health resort,— Davos,— and tell much of his companionship with John Addington Symonds. One of the letters is a Christmas sermon suggesting the famous paper which he once wrote for *Scribner's* under the same title. Sidney Lanier's poetical music impressions are concluded in this number.

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Educationists who have been contending that teachers should have equal professional status with physicians will find some cogent arguments against their claim, in the June number of **The Forum**, in an article by Dr. J. M. Rice, on "Why Teachers have no Professional Standing." Two serious obstacles stand in the way, says Dr. Rice, of such recognition being accorded to the teachers. One is, that the teaching diploma is of itself of so little value; the other, that the teachers themselves can not agree upon the most elementary points in educational matters. Although doctors proverbially disagree on many points, yet there are a great many on which they do agree, and which constitute a wide platform on which all members of the profession stand. The paper will doubtless evoke much discussion in educational circles.

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**Good Housekeeping**, the home magazine, has a conviction that "the higher education of women" has not been made all that it should have been. It declares editorially that "she has not been taught how to make her wifehood more endearing, her motherhood more noble, her home a greater power in the development of the world. In other words, domestic science — that first and nearest and most vital of the problems which face all womankind — has been overlooked and ignored in the quest of remoter things." The magazine not only proposes to begin in its next number a series of articles covering this important subject, but urges all the "woman's colleges" to embody domestic science in their courses of study. It goes further, in fact, and offers material assistance to all colleges doing this. "To all such institutions of learning it will give, in aid of the new department, fifty per cent. in cash of all the subscriptions coming to its office before October 15, in the name of the college,— through the influence of faculty, students, alumnæ or friends of the institution." Published by George D. Chamberlain, Springfield, Mass.

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**Mc Clure's Magazine** for June contains an account of Marconi's latest and most marvelous experiments in telegraphing without wires (especially in telegraphing across the English Channel), prepared by Cleveland Moffet with Mr. Marconi's own assistance. It describes popularly all the apparatus and methods employed, and is fully illustrated from photographs taken expressly for *Mc Clure's*.

Another article describes the curious, dangerous life of the Cornwall miners, who toil day and night in mines that extend under the Atlantic as far as a mile from shore, where the water is hundreds of feet deep. The article is fully illustrated from special photographs. Miss Tarbell gives new reminiscences and stories of Lincoln's devotion to the private soldiers during the Civil War.

**Self Culture** for June appears with a varied table of contents that offers not only a wide range of reading, but also a class of articles of high literary merit, many of which are handsomely and instructively illustrated. The opening paper on Harvard University contains several fine portraits of members of the faculty whose names are linked with the extraordinary recent growth of that ancient institution of learning. Rear-Admiral Roe, in an article entitled "The Unrest of the Nations," reviews the powers of the world, and points out the tendencies to unrest among their peoples, together with the causes of those tendencies. There is a sketch of the life and work of Honoré de Balzac. Some interesting private letters of Dr. O. W. Holmes, and personal reminiscences of that amiable anatomist and littérateur, are given by Dr. George Stewart. Dr. Macus Benjamin presents a description of the Smithsonian Institution, its foundation, and its work; and Mr. Hezekiah Butterworth describes the country of our Pilgrim forefathers under the title "A Legend-Haunted Summer Land." A graceful tribute is rendered to "Queen Victoria at Eighty," the article being adorned with fine portraits of the child princess and maturer queen, and a full-page picture of Balmoral Castle.

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The **Ladies' Home Journal** is looking after the physical as well as the mental well-being of its readers, beginning in the June issue a department which it calls, "Five-Minute Talks on Good Health." This department is edited and directed by Mr. and Mrs Edward B. Warman, who will explain how easy a matter it is to have good health through the proper exercise of the muscular forces of the body.

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Ian Maclaren, who has done very little literary work for some months, has just written for the **Saturday Evening Post,** of Philadelphia, an important series of four short stories, under the general title, "A Scots Grammar School," the first of which appears in the issue of June 3. In these stories the author returns to the Scotch town and folk he knows so well, and depicts the scenes of his own boyhood with the same sweet humor and pathos that brought "Beside the Bonnie Brier-Bush" into such immediate and lasting favor. Muirtown Seminary is drawn from Stirling Grammar School, where the author prepared for the University of Edinburgh.

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**Merck's 1899 Manual of the Materia Medica.** A ready-reference pocketbook for the practising physician, containing the names and chief synonyms, physical form and appearance, solubilities, percentage strengths and physiological effects, therapeutic uses, modes of administration and application, regular and maximum dosage, incompatibles, antidotes, etc., etc., of the chemicals and drugs usual in modern medical practise. Merck & Co., New York. $1.

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**Werner's Magazine** for June contains a long list of interesting and valuable articles, among which are "Cyrano de Bergerac," by Edouard Rod; "Elecution as a Means of Teaching English Literature," by Francis X. Carmody; "Character the Basis of True Oratory," by Charles F. Thwing; "New York Singing Teachers: Louis Arthur Russell;" "Physical Education in Colleges," by H. S. Anderson. Under the heading "Parlor, Platform, School, and Stage" is a variety of appropriate matter; and under "Current Thought" are some excellent short articles. The magazine is illustrated, this number containing a fine picture of a young ladies' drill with castanets.

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**Pamphlets Received.**—"A Bundle of Recollections." A. D. Rockwell, M. D.

"On Group Contests." Jakob Bolin, Esq., New York City.

"The Teaching of Physiology in Medical Schools." W. T. Porter, M. D., associate professor of Physiology in Harvard University.

"The Hernia Guarantee and the Minimum of Confinement after Operations for Appendicitis with and without Pus;" "The Relations of movable Kidney and Appendicitis to Each Other and to the Practise of Modern Gynecology;" "Chronic Nephritis Affecting a Movable Kidney as an Indication for Nephropexy;" "Chronic Appendicitis the Chief Symptom and most Important Complication of Movable Right Kidney." George M. Edebohls, A. M., M. D.

"Catarrhal Laryngitis," Henry R. Slack, Ph. M., M. D., La Grange, Ga.

# PUBLISHERS' DEPARTMENT.

**Spanish-American War Panorama** is one of the war books which is likely to be in continuous demand. It is a panoramic record of the triumph of "Yankee Doodle." The eagle flaps his wings on every page, and "Old Glory" waves around and above every scene. Prominent officers connected with the war are here portrayed, as well as many of the "men behind the guns." Military life is pictured to the eye, from recruiting to guard mount and skirmish line; nor is the ludicrous omitted. The company cook receives the attention due to his importance; the mess is shown; cavalry scenes are given; the hospital arrangements are depicted; the heroines of the Red Cross service are displayed; street scenes in Havana, Santiago, and elsewhere are unrolled, the new citizens or subjects (which are they?) of Uncle Sam appear and disappear as the leaves are turned. In a word the gazer visits the new localities and sees the tumultuous new life, without the risk or expense of a sea voyage.

The Album is 5½ x 8 inches, weighs 12 ounces, printed on finest coated paper. Sent free to any address in the United States, Canada, or Mexico, for twelve cents in stamps or coin, to cover postage and packing. Copy may be seen at any ticket office of the Big Four Route. Order at once, as the edition is limited. Address Warren J. Lynch, General Passenger and Ticket Agent "Big Four Route," Cincinnati, Ohio. Mark envelope "War Album."

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**Easy Economical Cooking.**— The woman who does the cooking is entitled to the best labor-saving and money-saving devices that have been invented. The work is so hard that when a way is shown to lighten it, that way should be used, more especially when that way is also the most economical. The Ideal Steam Cooker can be set on a common cook-stove, or over one burner of a gasoline, oil, or gas stove, and it will cook a meal for a family, and prevent the steam and odor of cooking. It reduces fuel bills one half. It is a perfect milk ster-

lilizer, kiling the germs that might otherwise kill the baby. Burning or scorching are impossible with the Ideal Steam Cooker. When the Cooker needs more water, it gives notice automatically by blowing a whistle. Full information and prices can be had by writing to the Toledo Cooker Co., Toledo, O.

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A POPULAR WEDDING TRIP is to take a D. & C. Steamer to Mackinac Island, Mich. If you want a delightful wedding trip where you are not likely to meet acquaintances, take one of the D. & C. new steel passenger steamers to the island of cool breezes. Staterooms and parlors reserved thirty days in advance. Send two-cent stamp for illustrated pamphlet. Address, A. A. Schantz, G. P. A., D. & C., Detroit, Mich.

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CHEAP EXCURSIONS, 199.— National Educational Association at Los Angeles, Cal., July 11 to 14.

For this meeting cheap excursion rates have been made, and delegates and others interested should bear in mind that the best route to the convention city is via the Chicago, Milwaukee, & St. Paul Railway and its connections. Choice of routes is offered those going to the meetings on the Pacific Coast, of going via Omaha or Kansas City and returning by St. Paul and Minneapolis. The Chicago, Milwaukee & St. Paul Railway has the short line between Chicago and Omaha, and the best line between Chicago, St. Paul and Minneapolis, the route of the Pioneer Limited, the only perfect train in the world.

All coupon ticket agents sell tickets via the Chicago, Milwaukee & St. Paul Railway. For time-tables and information as to rates and routes call on or address Harry Mercer, Michigan Passenger Agent, 7 Fort street, Detroit, Mich.

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THE GRAND TRUNK RAILWAY SYSTEM has issued its annual summer "red folder," giving the details of the almost endless variety of summer tours to be had over its lines, and in connection with the Richelieu and Ontario Steamer trips down the St. Lawrence. One of the most attractive journeys on the American continent is that afforded by this combination of rail and steamer route, and intending tourists would do well carefully to scan this publication before arranging their itinerary for a summer trip. The tourist literature of this company is an elegant collection of typographic work, particularly the folders treating of the Muskoka Lake and Georgian Bay regions, being profusely illustrated with fine half-tones. Any agent of the Grand Trunk System will supply the inquirer, on application.

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THE FIRST ANNIVERSARY.— It is just a year since the Chicago, Milwaukee & St. Paul road inaugurated its celebrated Pioneer Limited passenger train service between Chicago, Milwaukee, St. Paul, and Minneapolis. This service marked a new era in the railway world in the line of passenger accommodations. At a cost of a quarter of a million dollars that progressive company furnished the traveling public, in its Pioneer Limited train, comforts and facilities the best ever produced. This train has been described many times in newspapers and magazines, but should be seen and examined to be appreciated. In beauty of finish, richness and elegance of furnishings, nothing equal to it has ever been attempted by any other road. The car builders were nearly a year in completing the Pioneer Limited trains (there are two — one leaving Chicago for the West and the other leaving the Twin Cities for the East every evening in the year), and they stand to-day a monument to the builder's art. No regular passenger train service in America is so well known as the Pioneer Limited. From the standpoint of passenger traffic the past twelve months have been the most successful in the history of the St. Paul road, made so very largely by the Pioneer Limited. The patronage of this service is a striking illustration of the fact that the public appreciates a good thing.

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THE AMERICAN INSTITUTE OF PHRENOLOGY, President Mrs. Charlotte Fowler Wells, incorporated 1866, opens its next session on September 5 of this year. For prospectus send (free on application) to the secretary, care of Fowler & Wells Co., 27 East 21st Street, New York.

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LADY AGENTS wanted to sell flavoring extracts and perfumes. It will pay you to write me. R. W. Snyder, 140 E. Canal St., Battle Creek, Mich.