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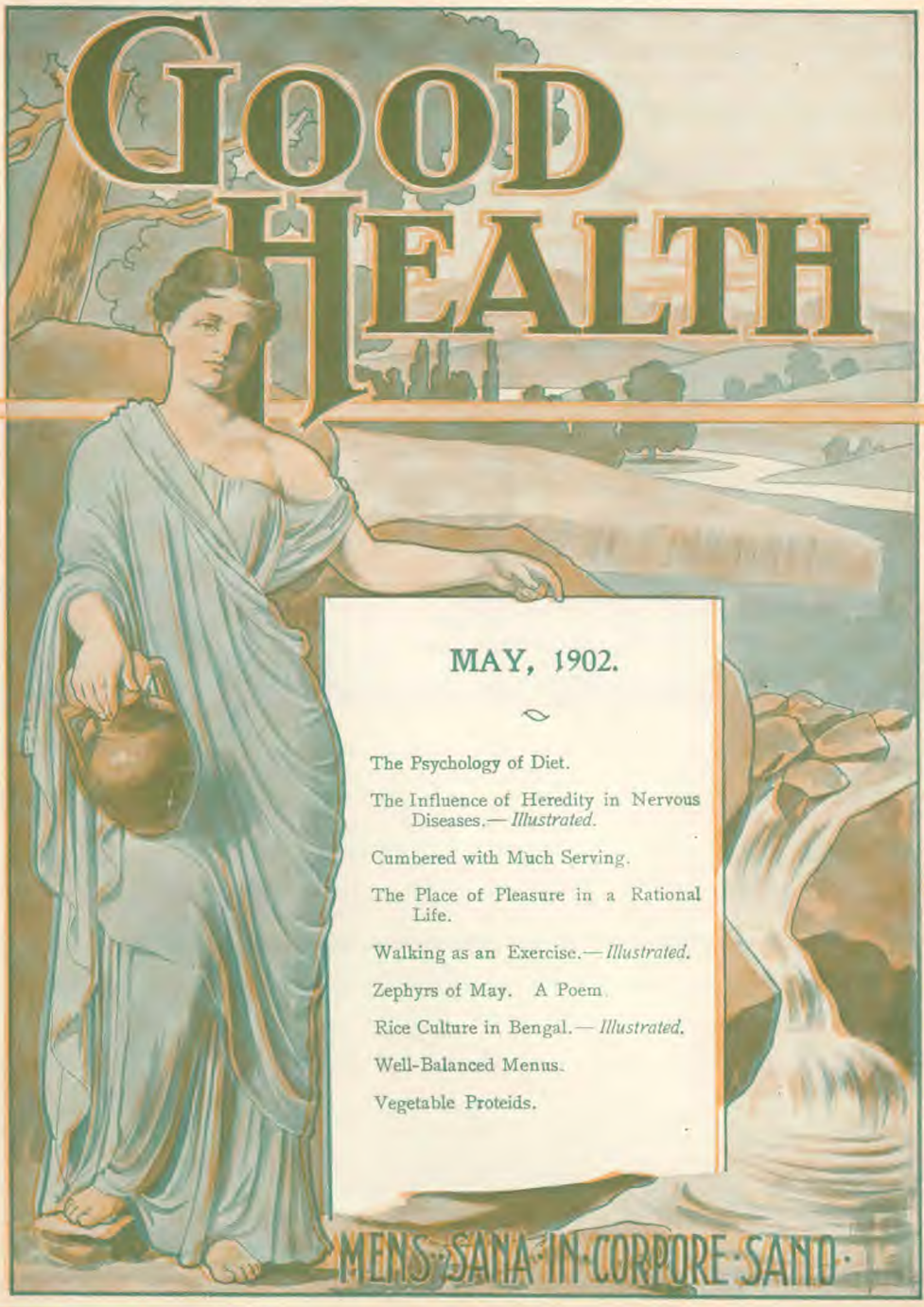
GOOD HEALTH



MAY, 1902.

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GOOD HEALTH

A Journal of Hygiene.

VOL. XXXVII. MAY, 1902. NO. 5

THE PSYCHOLOGY OF DIET.

BY J. H. KELLOGG, M. D.

THE influence of the intellectual faculties, or what the physiologists might perhaps more accurately define as "conscious cerebration," upon the digestive function, is far greater than is generally apprehended. We may even go further, and say that the influence of food upon the character and upon morality is one of the most powerful and far-reaching of the various factors which influence moral development. Byron recognized this, in a remark made to a poet friend, who, while dining with him one day, was very earnestly engaged in carving a rather tough steak. The expression upon his face called forth from the master poet the remark, "My friend, does it not make you feel ferocious to eat beefsteak? When I indulge in flesh eating, it arouses a very devil within me."

Carlyle ridiculed Dr. Alcott's "potato gospel," as he called the vegetarian teachings of that earnest apostle of the natural dietary, but, at the same time, betrayed the fact that his peccant pessimism was born of indigestion, in his frequent scathing denunciations of his "diabolical stomach." It has been charged that Servetus went to the stake for heresy because that great and good theologian Calvin happened to be most inopportunely suffering from a particularly bad fit of indigestion; and it has been more than once hinted that many poor fellows have been hanged because the judge had been indulging more frequently than usual in roast goose, mince pie, stewed lobsters, or some other equally good recipe for producing gastronomic woes and testy tempers.

The influence of mental conditions upon the digestive function might be demonstrated by numerous illustrative facts and incidents,— a lady, while eating her dinner with a relish, and suffering from no sort of organic disorder, received a letter from home announcing the serious illness of one of her children; she was not able to eat another morsel of food, and was instantly seized with nausea and violent vomiting.

In India, the native servants are so almost universally unreliable that when something has been stolen, suspicion is likely to rest upon all the servants at the same time. The native judges have a unique method of detecting the culprit when a large number of persons are under suspicion; they are made to stand up in a row, a spoonful of dry rice is placed in the mouth of each one, with instructions to chew it for a given number of minutes. At the end of the stated time, each mouth is carefully examined; the mouth of the culprit is almost certain to be found dry, because of the restraining influence of fear upon the salivary secretion. Fear, and other depressing emotions exercise the same depressing influence upon the gastric and hepatic secretions. This fact explains the expression,

"green with jealousy," and the ill health which often results from a severe fit of anger, of jealousy, disappointment, or melancholy.

When one day engaged in examining and prescribing for patients in our mission dispensary in Old Mexico, a few years ago, the writer encountered a case in which the patient was suffering from repeated attacks of gastralgia, accompanied by a very aggravated form of indigestion. On being asked his views respecting the cause of his disorder, the patient replied that it began with a mad fit, in which he had become very angry at a neighbor; he was taken sick immediately with a severe pain in his stomach, began vomiting, and had suffered almost daily ever since.

An eminent German physiologist has observed that the influence of a pleasant emotion is equally effective in promoting good digestion. Another German physiologist has observed, in experiments made upon dogs, that when a dog had had an opportunity to see and smell food before taking it into his mouth, the digestive process was more active, and that gastric juice was formed in abundance, even though a particle of food had not actually entered the mouth of the animal. On the other hand, when food was surreptitiously introduced into the dog's stomach through a fistulous opening provided for the purpose, care being taken to prevent the animal seeing or smelling the food introduced, no gastric juice was formed, and the digestive process failed.

Numerous similar facts might be presented, showing very clearly the close relation existing between the various digestive processes and intellectual states. The writer is thoroughly convinced, from long observation and experience, that it is far better for a person to eat what is set before him, asking no questions, either for conscience' sake or for the stomach's sake, than to take food in an anxious and worried state of mind, questioning or doubting the nutritive or dietetic value of the food to be eaten. Many a chronic dyspeptic maintains his disorder by keeping his stomach in a sort of "stage fright," through the concentration of his attention upon this portion of his anatomy during the whole digestive process.

One of the most remarkable observations which the writer has made respecting the relation of diet to mental and moral characteristics has reference to the relation existing between a flesh dietary and an appetite for alcohol and tobacco. Hundreds of instances might be cited in which men who had been addicted to alcoholic beverages, found themselves wholly relieved of the craving for artificial stimulation, within a short time after discarding a flesh dietary and adopting a natural dietary, consisting of fruits, grains, vegetables, and other natural food products. A man who had not previously passed a sober week for several years, but who had kept sober for three months on a strictly nonflesh dietary, remarked to a friend one day that if he were going to start on a spree, the first thing he would have to do, would be to eat a big, rare, juicy beefsteak to give him a "whisky appetite." Hundreds of similar cases might be mentioned, in which the appetite for alcohol has entirely disappeared under a nonflesh dietary.

A few months ago, the writer was consulted by a gentleman who had been a great smoker for twenty-five or thirty years; he stated that he had resolved to stop the use of cigars more than a hundred times, but had found it quite impossible to rid himself of the craving for them, and that every effort had ended

in defeat. In one instance, he passed two or three months without smoking, but he was obliged to wage a hard battle all the time against the terrible craving which never left him for a moment during his waking hours.

This gentleman had been about three months under treatment at the Battle Creek Sanitarium, during which time, in addition to other measures of general health culture, he had been following a carefully prepared prescription of natural aseptic and specially prepared foods; meats of all sorts and preparations from flesh, such as beef tea and broths, having been wholly discarded. The gentleman said that he had not once touched tobacco during the period of three months, and after the first fifteen days, he had not had the slightest desire for tobacco, but that, on the other hand, he had acquired an actual and very decided aversion to the odor and flavor of the weed.

Many months after the gentleman returned to his home and to his business, that of a wholesale tobacco merchant, he reported that he was still pursuing the natural dietary prescribed for him, and that he had not experienced the slightest craving for tobacco, although, owing to the nature of his business, he was daily brought in contact with great quantities of the weed.

Our bodies are made of what we eat: bone, brain, nerves, blood, muscles — every structure of the body depends upon the food substances which are taken into the stomach. This fact not only renders imperative the exercise of the greatest care in the selection of the substances employed in this body-building, but also emphasizes the necessity for submitting every substance intended for incorporation into the body to the fullest and sharpest criticism by every sense which can be brought to bear upon it.

The various senses are the sentinels of the body,— its ever vigilant guardians. To thoroughly test the nutritive properties of a new substance submitted for examination, it must be felt, seen, smelled, and tasted. By the combined influence of all these sensory activities of the chylopoetic system, comprising the various viscera involved in the digestive process, the complicated mechanism whereby food is converted into blood is brought into the fullest play. The various digestive processes are directly under the control of the sympathetic nervous system. This is powerfully influenced by sensory impressions of all sorts, and it is through this nerve circulation that intellectual and sensory impulses exert so decided an influence upon the functions of digestion and nutrition.

When we come to understand and appreciate fully the importance of psychic and sensory influences in relation to our nutritive demands, we shall give more attention to the development of the natural flavors of foods by more deft and subtle culinary processes than are now in common use, and will not neglect to so great an extent as at the present time, the esthetic side of dietetics. Enlightened by the physiological facts which such a study will bring forth, we shall cease to goad our palates with those rank and rasping substances which burn and sting and blister as they go down our throats, and the use of which greatly reduces our list of gustatory delights; but will, instead, train our senses to appreciate those delicate flavors and aromas which, in natural foodstuffs properly prepared, present themselves in infinite variety, giving us a hundred or more wholesome and delightful palate-ticklers in return for each one of the stomach-scorching condiments surrendered.

WALKING AS AN EXERCISE.

BY H. B. FARNSWORTH, M. D.

IN these beautiful, bright spring mornings, when life is awakening from its winter's repose, nature invites us to breathe deep of the life-giving air which fills our bodies with health and strength, and our mind with better and more wholesome thoughts. After the morning bath upon arising, and a short, brisk walk before breakfast, along some country lane, or even on some quiet avenue of the city, one is far better prepared to meet the duties of the day. Aside from the physical good that accrues to one from the walk, comes a renewal of mental vigor — a clearing of the cobwebs from our mental vision, that aids in keeping a tuneful heart and a smiling face with which to meet the day's perplexities.

Such a walk as we propose as an exercise must be brisk, with a well-measured step — not a stride. The head should be carried erect, the chest forward and upward, ready to do service in obtaining the necessary oxygen, the hips firm but not stiff; the whole carriage should be with that graceful ease that bespeaks vigor and life in the healthy individual, and that will aid in obtaining the same for the semi-invalid,— the one troubled with a variety of gastric and nervous symptoms.

THE WHOLE CARRIAGE SHOULD BESPEAK VIGOR AND LIFE.

Let us notice two important physical benefits that come from such a walk — changes which occur in the chest and the abdomen by the increased respiratory movements which accompany that, to so many, vigorous exercise.

The chest is said to be the seat of hope. However that may be, it is the general observation that the person who has a flat, thin, narrow thorax, and who seems to care little or nothing for its development, is usually the one who has little vitality and a small amount of endurance; he becomes disheartened and is easily discouraged, and so in the battle of life he often does not possess the staying capacity that his station demands. A lack of vital resistance to disease, and the exhibition of a spirit of hope and good cheer is often the result of inattention to chest development.

On the other hand, the individual who possesses a large thorax, and who spends much time in developing his lung capacity, is usually possessed of a fund of hope and cheerfulness. To be sure, these same people may fail utterly in later life to maintain the use of all their lung tissue, and thus open the way for the reception and cultivation of the many dreaded pulmonary affections. So the happy medium is to have a chest

well adapted to one's occupation, seeing that it is used daily throughout life in such a way as to fully expand in all its parts, and thus enable the capillaries in each air sac to give each little red-blood cell its quota of life-giving oxygen, that it may pass without interruption on its mission to various parts of the body. Unless each little cell does obtain its rightful proportion of this gas, it does not pass through the lungs, but is retained in the capillaries.

Walking at a brisk rate will cause a wider expansion of the lung tissue. The muscles are demanding more oxygen, and the blood wants to be rid of the carbon dioxide which accumulates in it as the result of exercise. This calls for more rapid action of the heart, and deeper inspirations, until the most remote air sac is called upon to aid the blood in making the exchange in gases.

Conducive to Round Shoulders.

It is obvious that walking in a stooped position is conducive to the compression of the chest and the development of round shoulders. The abdominal muscles are not contracted, as when standing in a correct position, and thus the contents of the abdomen are allowed to fall downward out of the normal position. This may result in conditions which announce themselves by backaches, headaches, or some digestive disturbance.

The lowest lobes of the lungs extend downward so nearly to the waist line, that the wearing of any garment constricting expansion about the waist will impinge upon the lower lobes of the lungs, and lessen the amount of blood aërated in these parts.

The increase in the number and depth of the respiratory movements accomplishes much good in the abdomen. By the alternating contraction and relaxation, the flow of blood through the portal system is accelerated. The blood coming from the stomach, the pancreas, the spleen, and the intestines is collected in one large, short vein, leading to the liver. This organ is a large capillary reservoir capable of holding about one fourth of the total amount of the blood in the entire body. It lies in the upper right side of the abdomen, immediately beneath the diaphragm. As this muscle is made to contract during an inspiration, the pressure within the abdominal cavity is increased, which results in forcing the blood out of the liver through the hepatic vein into a larger vein, which conveys the blood to the right side of the heart. Opportunity is thus given for more blood to be drawn in from the smaller veins coming from the organs in the abdomen.

So, by the forced respiratory movements during a brisk walk, the blood is made to flow more rapidly through this large organ, and the general circulation,

in turn, is allowed to furnish the digestive tract with fresher blood. This will result in greater activity of the minute cells in the stomach, pancreas, and intestines, in the production of the digestive fluids for the morning meal, and in the increased excretion of bile. It will also cause the blood current to flow more smoothly and with less embarrassment, and will aid in promoting that feeling of well-being and buoyancy which is indicative of good health. These are the results of the brisk morning walk.

Then comes the more leisurely walk of the evening, after the work of the day is over, when, with some friend or member of the household, one may enjoy the quiet of the gathering twilight. It is now that one needs repose, quiet, time for rest of body and mind, after the work of the day. We do not take this walk as an exercise, unless we think of it in a negative sense. We are benefited by the calm and quietude which the close of the day usually brings. We then learn the benefit of relaxation, of throwing off the cares that infest the day. We learn to cultivate an acquaintance with nature in her softer and gentler moods, and to look beyond the immediate quiet, to the peace and comfort that we may gain from communion with Him who gives us our being, our day for work, our evening for meditation, and our night for repose.

TWO KINDS OF SPORTS.

"'Tis a beautiful morning," a sportsman said,
"The world looks so happy, let's each take a gun,
Go out and kill something for pastime and fun,
And proudest be he who counts the most dead."
They blotted out lives that were happy and good,
Blinded eyes, and broke wings that delighted to soar;
They killed for mere pleasure, and crippled and tore,
Regardless of aught but the hunger of blood.

Did they dream that night as they sank to their rest,
How poor little Broken-Leg out in the field,
All nurseless and doctorless, fever possessed,
Felt all of the torture that battlegrounds yield?
"Only a bird," yet his slayer would groan
If only one half of that pain were his own.

"'Tis a beautiful morning," a sportsman cried,
Who carried a kodak instead of a gun;
"The world looks so happy, so golden the sun,
I'll slip to the woods where the wild things hide."
The deer that he "shot" never dreamed of his aim,
The bird that he "caught" went on with her song,
Peace followed his footsteps, nor slaughter and wrong,
Yet rich were his "trophies," and varied his "game."

Then homeward returning, by mercy possessed,
He crushed not the snail that his steps overtook;
He paused to replace a young bird in its nest,
Or rescue an insect afloat in the brook:
His joys were joy-giving, not wounds to appall,
For he wore "The Crown Jewel of Kindness" to all.

They met on the Sabbath, these lives so apart;
When the minister prayed for Christ's coming again,
In mercy and kindness, both answered "Amen,"
The one with the lips, and the other the heart.
Which prayer won the blessing, which sank to the dust,—
The one that went up with the song of a bird,
Or the one that was drowned by the voices that poured
From the wounds of the weak to the ear of the Just?

—*Calla Harcourt, in Our Dumb Animals.*

SLEEP.

BY FRANCES BARTON.

THE old adage tells us, "Nine hours of sleep are enough for a fool." Perhaps they are, and not infrequently they are none too much for a wise man, and many a wise man has shown his wisdom by taking them. While performing his most prodigious literary feats, Goethe felt the need of, and took nine hours out of the twenty-four for, sleep.

It is generally conceded that the young child requires thirteen or fourteen hours each day for sleep. This period is gradually shortened until, at fourteen years of age, the boy is found to need only ten hours. When grown, and in a healthy condition, the man may find that a night of eight hours is sufficient to repair the waste of the day, and recreate him for the morrow; but if he finds that he needs more, he should take it.

When one must drag oneself out of bed in the morning by pure force of will, there is something wrong; perhaps a forgotten waste must be repaired, an hour of lost sleep, or an unusually nervous strain. Some demand has been made upon the system, for which Nature asks payment, and he who is wise will listen to her voice.

Just here allow me to say that every one who seeks his bed at the good old-fashioned hour of nine, and is not seen until he appears at his eight o'clock breakfast the next morning, should have credit for being a good sleeper. The faces one sees at breakfast tables frequently tell how few have learned the secret of restful nights. So many people take all their cares to bed with them. The business man writes that annoying letter the last thing before he puts out his light, then says his prayers piously, closes his eyes, sighs, tosses, and longs for the dawn. He counts forward and backward by ones, twos, and fives, and falls into a restless sleep only to awaken more weary than when he went to bed.

"That we may continue to be of use in the place in which God, for some wise reason, has put us, let us wisely keep in our hands a reserve power of bodily and mental vigor, produced by a careful balancing of the hours of sleep with the hours of work. We do not know to what struggle or sorrow we may be called. Let it never find us too weak to accept it as we should."

The question, "How much sleep do I require?" deserves, and should have, our thoughtful consideration. No one can think the matter out for us as well as we for ourselves. Our constitutional tendencies, our habits of life, all our circumstances, are best known to ourselves. With all these things in mind, we should each think the matter out reasonably, and then abide by the decision of our best judgment.

If this were intended for an exhaustive paper on the subject of sleep, there are many things we might speak of that cannot go into this brief space. We would speak of the benefit to be gained from indulging in some gentle exercise before retiring, a simple romp with the children, some light gymnastics, or the old-fashioned diversion of singing and story telling.

We might talk of the necessity for taking warm feet to bed, of the best sort of bed and bed covering, of the size, shape, and best manner of ventilating the ideal sleeping room; but we will be content with our primary object of calling attention to the importance of sleeping regularly, soundly, and enough.

THE INFLUENCE OF HEREDITY IN NERVOUS DISEASES.

BY W. H. RILEY, M. D.

THERE are many causes contributing to the production of the numerous forms of nervous diseases and mental disorders with which the physician so often comes in contact at the present day. It would be impossible to consider all of these different causes in this brief article. The writer desires, however, to call attention to one important factor, that of heredity.

To the average reader, the word "heredity" does not convey, perhaps, a very definite meaning, and it is not easy to define it fully. When the Creator made man in the beginning, he placed within his body, in every tissue, every fiber, every nerve cell, and every other cell of the body, a full measure of life, vigor, and vitality. It was the purpose of the Creator that this life force should be retained in every member of the human family, from generation to generation, in its full measure. God never intended that in the life of any individual this life force should grow less, and dwindle away, finally fading entirely out.

But, in order for man to retain this life-giving principle in its fullest extent, he must obey the laws of his own body, and walk in the way that the Lord intended, in his habits and manner of living. Almost from the beginning, the human family have been violating Nature's laws, the laws that govern the functions of the body, and this life-giving principle has been smothered and lessened, until at the present time, in the lives of men and women, we see it in a very much smaller measure than the Lord gave Adam in the beginning. We see this weakness manifested in various forms of disease. Parents hand down to their children the weaknesses that are present in their own bodies, and they are thus stamped upon the tissues of the bodies of their children. And these weaknesses are often intensified, and so are seen more conspicuously in the child than in the parents. The transmission of these weaknesses from parents to children is what we mean by heredity, as far as its influence in producing disease is concerned.

One is particularly impressed with the influence of heredity in noticing the great number of children that are born into the world with weak and diseased nervous systems. I do not mean by this that very often any specific nervous disease is handed down from parents to children, — that is to say, the child does not have a group of symptoms indicating a certain specific nervous trouble which are the same symptoms that have been transmitted to him, as such, from his parents. But the parents, one or both, very often have a nervous system that is weak, excitable, and irritable, and the nerve cells and the nerve fibers making up these nervous systems are in the same condition. The quality of the nerve elements is below par. The nerve cells and the nerve fibers lack resistance; they have not the staying qualities which they should have. This particular weakness is given to the child in an intensified form, and frequently becomes so great in the child that we see in him a group of nerve symptoms indicating positively that his nerve tissue has degenerated to such an extent that it cannot perform the ordinary functions of life, and so has passed over from a normal to an abnormal, and from a physiological to a pathological, or diseased, condition.

Every individual begins his life as a

microscopical, living animal cell. This cell is very small indeed,— only a very small fraction of an inch in diameter. This little "cell," as we call it, is nearly spherical in shape, quite homogeneous in its structure, and without any particular parts that are very conspicuous. The little animal cell is very simple in its form and structure, but the possibilities of the man or woman into which it will finally develop, depend, in no small degree, upon the health, vitality, and vigor of this single cell with which the individual begins his existence. If this single cell is weak and sickly, if the tissue or material out of which it is made is of poor quality, then the human being into which this cell develops can never be what he might have been had the original cell from which he started been healthy and vigorous.

The influences which tend to lessen the vitality and vigor of these embryonic cells are the same as those that tend to lessen the strength, vigor, and vitality of other cells of the body. If one eats improper food, and takes substances into his body that irritate the tissues, and tend to lessen their vitality, it affects the offspring by lowering the health and strength of these minute cells which are the very beginning of life.

One of the most potent evil influences which tend to develop hereditary weaknesses and diseases of the nervous system in the human family, is the use of alcohol and alcoholic liquors on the part of parents. It is now quite generally recognized by superintendents of insane asylums, and others who have opportunities for observation, that the use of alcohol is one of the most prolific causes of

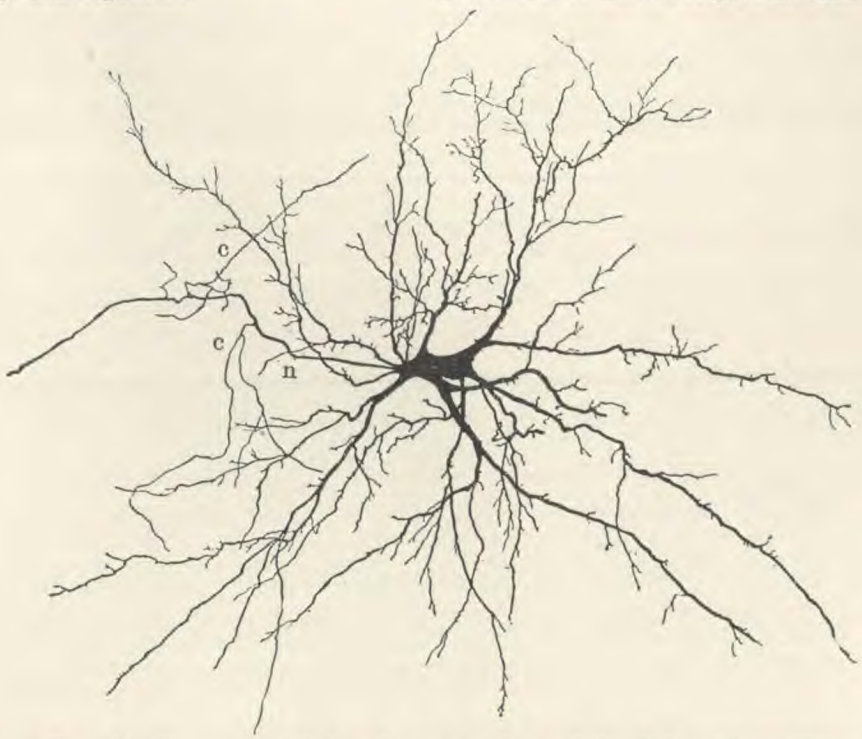


FIG. 1. A healthy nerve cell of the brain of a cat; n, single axis cylinder, which extends some distance outside of the drawings, and in some cases in the nervous system of man, may be two or three feet long; c, c, are collateral branches of the axis cylinder. The other branches of the nerve cell are called the protoplasmic branches, and extend only a short distance from the body of the cell.

the various forms of insanity in the offspring of those who are addicted to this vice. This fact is so clearly recognized by those who have to deal with the insane, that it becomes an important matter in the examination of the insane, to determine whether or not the parents and ancestors have been addicted to the use of alcoholic liquors. It has been demonstrated over and over again that alcohol, when taken into the body, even in quite small quantities, has a deleterious effect upon all the different tissues of the body, and particularly on the nervous system and the tissues which make up the nervous system.

Figure 1 represents a healthy nerve cell. In the center of this figure is the solid part, which is called the body of the cell. The other lines extending out from the center represent various branches. These branches carry impulses to and from the nerve cell. When this nerve cell is properly fed and nourished, it performs its function in a natural, normal way. If, on the other hand, the cell is poorly fed and imperfectly nourished, and poisoned by alcohol or other deleterious substances, its life and vigor are diminished, its function is impaired, its life is hampered, and it may even decline and finally die, on account of the effect of alcohol or other poisons that are brought in contact with it by that which is taken into the stomach as drink and food.

Figures 2 and 3 represent nerve cells of men who have died from insanity caused by the use of alcohol.

In these illustrations, it can readily be seen that the nerve fiber and all parts of the nerve cell are broken up and degenerated and destroyed by the use of alcohol. When the nerve tissue and other tissues of the body so thoroughly poisoned with alcohol and other deleterious substances that have been taken into the body, the offspring of such parents cannot but be weak, and, to a greater or less extent, diseased. The only way in which this downward tendency of the human family can be checked is for fathers and mothers to fully and completely comply with all the laws of health, and for each individual to cul-

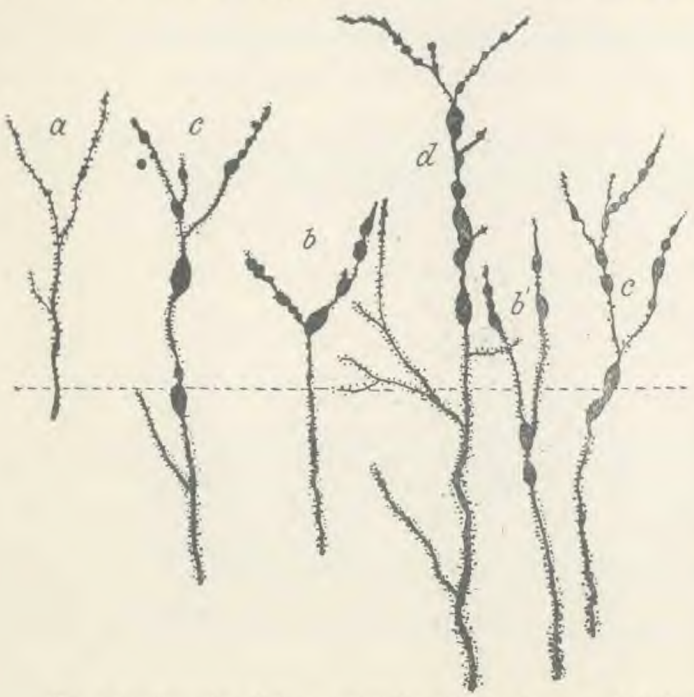


FIG. 2. An illustration of the nerve branches and fibers in a case of alcoholic insanity. The patient died of this disease, and when the nerve fibers were examined under the microscope, they were shown to be swollen and broken down in the manner illustrated in the drawing. The swellings of the nerve fibers, as seen in this illustration, are characteristic effects produced by alcohol, and are usually seen in the brain of those dying from alcoholic insanity.

tivate and develop the life force within their own bodies, and to increase this to its fullest extent in their own lives and the lives of their children.

The number of diseases of the nervous system, seen in early life, that are due to inherited tendencies, seem to be constantly on the increase. This evil tendency could be overcome, in great measure, if men and women would conserve this life-giving force that is implanted in their tissues, and would cultivate health, and follow proper and right methods of living; and, unless there is a decided change in the habits of a large percentage of the human family, we cannot hope that the number of severe forms of nervous diseases and mental disorders will, in any degree, diminish, but, on the other hand, they cannot help but increase in intensity and number from generation to generation.

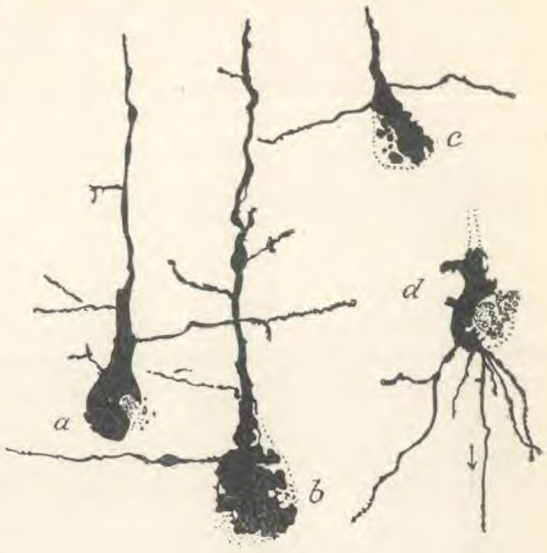


FIG. 3. This figure shows four nerve cells from the brain of a man who died of alcoholic insanity. It will be noticed that the body of the cells and the nerve fibers are broken up and degenerated.

The changes in the nerve cell and nerve fibers shown in Figs. 1 and 2, are the more severe changes, and represent complete destruction of the nerve tissue.

BETTER THAN GOLD.

BETTER than grandeur, better than gold,
Than rank and title a thousandfold,
Is a healthy body, a mind at ease,
And simple pleasures that always please,
A heart that can feel for another's woe,
And share his joys with a genial glow —
With sympathies large enough to enfold
All men as brothers,— is better than gold.

Better than gold is a conscience clear,
Though toiling for bread in an humble sphere;
Doubly blest with content and health,
Untried by the lust of cares or wealth.
Lowly living and lofty thought
Adorn and ennoble a poor man's cot;
For man and morals, in Nature's plan,
Are the genuine test of a gentleman.

Better than gold is the sweet repose
Of the sons of toil when their labors close;
Better than gold is the poor man's sleep,
And the balm that drops on his slumbers deep.
Bring sleeping drafts to the downy bed,
Where luxury pillows the aching head;
His simpler opiate labor deems
A shorter road to the land of dreams.

THE PLACE OF PLEASURE IN A RATIONAL LIFE.

BY EMMA WINNER ROGERS.

GOETHE tells us that at thirty he resolved "to work out life no longer by halves, but in all its beauty and totality." It is a decision so wise and vital that one can but wish it might be made by all thoughtful people in this twentieth-century era. For it is the earnest, thoughtful, and industrious souls who most often live by halves, spending themselves in one-sided, though praiseworthy, effort, it may be. The multitude who live along without much thought or conscience are guided involuntarily by Dame Nature, who urges them only to work when they must have food and shelter, to think when the emergency overtakes, and moves them to play and ease, in season and out. "The voice of the people is the voice of God" is, in a measure, true, for just the reason that the multitude have open minds to one of God's great teachers — nature — within and without, while too many of the thoughtful and educated are living in narrow intellectual grooves, alive only in half of their being, and missing "the beauty and totality of life." Nothing is possible to them but work and the gaining of knowledge; wisdom has passed them by, and they have lost the faculty of delight. They need "to become as little children" before they can re-enter the true kingdom of God on earth.

It is pathetic how woefully the lesson of childhood is lost upon us; its joy, its open-mindedness and simplicity, its universal love and sympathy. The lesson that life is a playground, as well as a school and workshop, is vastly needing to be learned by a multitude of weary, nervous, and joyless people, who are grinding away at their tasks, intellectual or mechanical, or even social, as if they themselves were parts of a perpetual-motion machine, instead of lords and rulers over the earth and all that therein is. A rational life needs play; it needs pleasure, joy, ease in moderation, time for nature, and nerves attuned to the harmonies of existence, not shattered by continued listening to its dissonance. We make a fetich of work, and the great truth that being is more than doing vanishes before the minor truth that in the sweat of his brow man shall eat his bread. Men toil as if it in itself were the end of things, and so vain does life without strenuous work seem to the average mind that the question arises whether the primitive curse upon labor may not be one of the texts which the learned have found mistranslated, misinterpreted, or interpolated in the passing of the centuries! Herbert Spencer said, when in America a few years ago, that he found it necessary to remind us "that life is not for learning and working, but learning and working are for *life!*" And here, more than in other lands, it is no doubt true that people work as if work were the end and purpose of life, and not a means to its enjoyment. It seems to be forgotten or unknown that physical, mental, and spiritual well-being are promoted and stimulated by pleasure, that it ought to have a large place in the rational life, and in the development of well-rounded character.

A professor of science in one of our colleges said, recently, that during his three years' stay in Germany, he did nothing but plod, and realized on his return to America what a mistake he had made; his mind lost in elasticity, and he had lost in many ways, while gaining simply intellectual knowledge.

We see every day in business and educational circles the victims of one idea,— that idea being work. The gospel of leisure and the uses of pleasure need to be preached, as well as the gos-

pel of work. The strenuous life is well and good, if it mean eager and constant pursuit of the joy of life in connection with intelligent and enthusiastic use of hand and brain in the world's work.

Preparation for life necessitates hard work, if it shall be adequate preparation; active life, the winning of daily bread, the making of money or reputation, the adding to the comfort and progress of the world, or ministering to the social and spiritual needs of the poor and unfortunate, all entail continuous work and self-sacrifice. But something is wrong in the scheme of one's existence, if pleasure must be left out to enable one to accomplish his due share of the work of the world. It may be that desire and ambition ask for too large a portion of material good, or too great a share in the world's esteem. It is for the wise to study and practice proportion in life. And the conscientious and overworked ought to pause and ask themselves what place pleasure should have in a rational life, and how in our modern life it may secure its share of time.

The pleasure of congenial work itself is not to be lightly estimated. Ruskin and Morris have taught the necessity of good work being a joy to the worker; and a large part of our pleasure in life must come, if it come at all, in the joy that accompanies faithful and beautiful work of either hand or brain. But there is more than this. There is a time for, and the need of, joy or pleasure in nature, in art, in life, literature, friendship, music, or some one or more of these, or the countless other endowments of this glad human existence, to the one who resolves, with Goethe, "to work out his life no longer by halves, but in all its beauty and totality."

We might, as a people, learn much from our kin beyond sea, about how to use wisely the pleasures of life, and find opportunities for joy. The older nations live more rationally than we, for with age comes wisdom. Young and old with them take a larger share in the pleasures of life, and do so, both for the enjoyment to be had and for the sturdier development of body and mind.

The rector of the University of Munich, addressing the students a few years ago, advised them to give eight hours to sleep, eight hours to study, and eight hours to recreation. What alarm would stir our university faculties if their students adopted this division of the day! Yet long before, it had formed a couplet for an old English proverb, and it is approximately the rule of life among German and English students, and faculties, too.

German students love nature, and take delight in long walks in the country and the forest. Grass and flowers, streams and meadows, teach them high lessons. In their holidays, they frequently go on long tramps, pedestrian tours of days or a week or more, making happy pilgrimages over hills and dales and through deep forests. Yet, with all their hours of pleasure, they succeed later in making the world admire and imitate their scholarship. Partly because of the strength and stimulus of these hours, may one not say? The average European gives far more time to nature, to art, to music, and to social life, than our countrymen, and life there is planned to make these pleasures accessible to the many. English student life is given up as much to outdoor recreation and indoor social meeting as in the German, and the devotion of the English people to country life and to sports is a characteristic which accounts, in a great measure, for their sturdy health and activity in old age.

Common sense, as well as notable ex-

amples, indicate the wisdom of using the means which nature and art provide without stint for human happiness. Happiness is the human birthright and endowment, too often despised or crowded out, but always within reach in some measure, and growing by what it feeds on. The place of pleasure in the truly rational life is a large place, and all development is hindered or warped by its being crowded out. That the simplest pleasures avail as much as others more varied and difficult to obtain, is a part of the wonderful beneficence behind the laws of life. "To watch the corn grow, or the blossoms set; to draw hard breaths over plowshare or spade; to read, to think, to love, to pray, these," says Ruskin, "are the things that make men happy." A wise writer has said, "If we had set our fancy to picture a Creator occupied solely in devising delight for children whom he loved, we could not conceive one single element of bliss which is not here now." And are we to "grub" simply, and never to see or to use the opportunities and endowments for happiness in an almost enchanted world? Reason and inclination unite to bid man not to do violence to his own blessings, "when he should dwell in joy."

RICE CULTURE IN BENGAL.[1]

BY M. W. BACHELER, M. D.

THE diet of the native of India varies greatly with locality. In some sections of the hill country he lives largely on corn, while wheat is the principal food in some parts of central India; and the natives of Bengal and Orissa and the neighboring country subsist largely on rice, and rice is the principal crop raised by the farmers.

For mutual protection from robbers (and ghosts!) the farmers always live in communities, never in isolated dwellings. In the sea of rice fields, sometimes stretching away to the horizon, the little villages and hamlets make islands of green, and their varied foliage of palm, banana, banyan, peepul, babla, and mango trees, with the thatch roofs peeping out here and there, add picturesqueness to a landscape which would otherwise be very tame and dull.

The latter part of May or the first of June, when a few showers have followed the fierce, dry heat of the hot season, and softened the ground a little, the farmer plows the fields with his small wooden, iron-tipped plow, drawn by a yoke of bullocks.

The plow is described in "Peasant Life in Bengal" as follows: "The wooden colter is shod with iron, which serves the purpose of the 'shining share.' The plowtail, which is inclined to the plowshare at an acute angle, is furnished with a short handle, by means of which the peasant guides the share, and presses it into the earth. At the meeting point of the share and tail is a hole, through which passes a beam, to the end of which is attached the yoke. When the machine is set going, it is kept tight by ropes attaching the yoke to the plowtail." The plowman holds

[1] The accompanying cuts are used by courtesy of Z. F. Griffin and Rev. H. E. Wyman.

First Plowing For Rice.

the single handle in one hand, while, with the other, by stick and tail-twisting, he urges his reluctant bullocks round and round the field.

The change of season, when the rains really begin, is called "the breaking of the monsoon." It begins in the southern part of the Indian Peninsula, and travels northward, with varying speed, usually reaching Bengal and Orissa during the first week in June.

The rice is usually all sown during the first of June. Sometimes it is sown broadcast, and when it has come up and grown to be eight or ten inches or even more in height, the fields are plowed a second time. The more usual way, however, is to sow it very close in a small field, and when it is six or eight inches high (sometimes it may be even eighteen inches), it is transplanted in little bunches, which are pressed firmly into the mud of a plowed field. This is done because the rice needs to root a second time.

All through the wet season it grows, usually in fields full of water, which is kept in by ridges, and when the rains lessen in September, the heads begin to fill out. Grass and weeds are apt to

Second Plowing for Rice.

CUTTING RICE.

grow in abundance, and need the farmers' frequent attention.

"Peasant Life in Bengal" also tells us that "there are three kinds of paddy (rice), as viewed from the standpoint of the seasons in which it is sown and reaped:—

"1. *Asu,* or *aoose,* sown the last of March or early in April, is cut in August or September. It is coarse, eaten only by the lower castes, and in limited amounts. It is grown on high land, and is not inundated.

"2. *Amon,* the winter crop, and most important. It is sown from the middle of May into June, and reaped in No-

CARRYING RICE FROM THE FIELD.

vember or December. It furnishes all classes with food. There are many kinds of this variety, one hundred and sixty in Ceylon.

"3. *Borodhan,* which is grown in swampy places. This is sown in January or February, and cut in April or May."

When the fields are ready for the sickle, a long bamboo pole, the lighter end wound with twisted straw so it is reapers command three times the usual wage, and parched rice lunches, besides.

A tuft of rice at a time is grasped by the reaper, and cut off about three or four inches from the ground, and laid down carefully, making long rows all the way across the field. When it has dried a little, it is, in some parts of the country, tied into bundles about as large as one can easily grasp with both hands. These are tied together into

THRASHING RICE.

of uniform weight throughout its length, is carefully dragged across the fields, so the rice is all bent down the same way; then men and women and young people go in with sickles, and cut it as rapidly as possible. On account of the necessity for quick reaping, when the fields are ready, the farmers are willing to pay exorbitant wages.

Some seasons, in the lowlands called *namal,* where the crops are very heavy, larger bundles, and loaded in carts or on the backs of bullocks, and taken to the thrashing floor. In other parts of the country, the rice is gathered up loosely, and carried to the thrashing floor, in the center of which a stake is driven, and to it a string of cattle is tied and driven round and round, treading it until the grain is separated from the straw. Then the straw is gathered up and tied in large loose bundles.

For fear of thieves, cut rice is never left in the field overnight; each day's cutting has to be safely housed before the farmer can call his day's work done.

As the thrashing floor is peculiarly oriental, a few words of description may not be out of place. A convenient spot is selected, leveled and pounded down, and rubbed with mud until smooth; then it is thoroughly smeared with a thick paste of white clay and water, until the surface is smooth and hard. When the thrashing is to be done by hand, an inclined board is fixed in the center of the thrashing floor, and on this the bundles of rice are beaten until the grain is all shaken off; then if it is to be sold at once, it is put into burlap bags. If, however, the rice is to be stored, it is poured into a little house built for the purpose on piles, to insure safety from rats and mice. Or it may be stored in enormous baskets, six or seven feet high, and four or more across the top, made of unsplit cane; or into smaller receptacles made of straw roping.

"In some parts of the country, about the middle of the yard and near the cow-house is the granary of paddy. It is cylindrical in shape, made entirely of ropes of twisted straw, with a circular thatch on the top. It contains a quantity of paddy sufficient for the consumption of the family from one harvest to another."

The straw is sold by the bundle. Sometimes, by paying in advance, when the farmers want the money for paying the reapers, etc., one may get as much as thirteen *pons,* 1,040 bundles, for a rupee (a silver coin worth about thirty-three cents), but the usual price is about eight pons, 640 bundles. Straw is used for thatching houses; and in the dry

WIDOWS CARRYING RICE TO MARKET.

season, when grazing is scanty and far away, it is fed to the cattle. Sometimes the bundles are untied and shaken out before them; but the better way is to cut the straw up fine, mix it with rice water, oil cake water, and a little salt, and fill a tub for each creature. Natives who keep their cows tied up most of the time generally give them a tub of cut straw in the evening, to be eaten during the night. Besides this, they have boiled rice, and all the rice water the household cooking furnishes.

POUNDING RICE.

Paddy, or unhusked rice, as it comes from the thrashing floor, is sold at from thirty-two to fifty-two quarts for a rupee. It is useful for feeding to domestic fowls, sometimes to horses, and when half pounded and boiled, it is fed to cattle. Thirty bushels per acre is a good yield, though forty is sometimes produced, and possibly more.

The next process in the preparation of rice for consumption is the pounding, to separate the husk from the kernel. It is so brittle that it is customary to steam or parboil it, after which it is partially dried in the sun on palm-leaf matting, and is then ready for the *dhenki*, as the native instrument for pounding is called. A dhenki consists of a long beam hung on a stout pivot between two upright posts firmly planted in the floor. One end is flattened, and to the other is attached at right angles a stick with an iron tip, which is directly over a hole in the mud floor, which is kept filled with rice.

Two women stand at the flattened end, and as they step upon it, the other end is raised, and falls into the hole with some force when they step down. Another woman sitting on the floor near the hole, keeps the rice stirred with her hand.

Some Brahmins and the widows of certain castes are prohibited from eating anything cooked by another caste, so they may not eat the ordinary rice, but what is called *atob*, which has been pounded without the preliminary steaming or boiling. Atob is also offered to the gods.

The retailing of rice is one of the very few occupations open to the Hindu widow. She can make a meager living by buying it in the husk as it comes from the thrashing floor, pounding it in the dhenki, separating the grain from the bran, and carrying it sometimes several miles to sell in town or marketplace. The bran is in great demand for feeding to cattle. Rice, as the widows retail it, sells at from eight to fifteen quarts for a rupee, according to the time of the year, and the grade of rice — its firmness, whiteness, and dryness.

CUMBERED WITH MUCH SERVING.

BY MRS. E. E. KELLOGG.

"In those good days of simplicity and sunshine, a passion for cleanliness was the leading principle in domestic economy, and the universal test of an able housewife. The front door was never opened, except on marriages, funerals, New Year's days, or some such great occasion. It was ornamented with a gorgeous brass knocker, curiously wrought, sometimes in the device of a dog, and sometimes of a lion's head, and was daily burnished with such religious zeal that it was ofttimes worn out by the very precautions taken for its preservation. The whole house was constantly in a state of inundation under the discipline of mops and brooms and scrubbing brushes. . . ."

"The grand parlor was the sanctus sanctorum where the passion for cleaning was indulged without control. Into this sacred apartment no one was permitted to enter, excepting the mistress and her confidential maid, who visited it once a week for the purpose of giving it a thorough cleaning and putting things to rights, always taking the precaution of leaving their shoes at the door, and entering devoutly in their stocking feet. After scrubbing the floor, sprinkling it with fine white sand, which was curiously stroked into angles and curves and rhomboids with a broom,— after washing the windows, rubbing and polishing the furniture, and putting a new bunch of evergreens in the fireplace,— the window shutters were again closed to keep out the flies, and the room carefully locked up until the revolution of time brought round the weekly cleaning day."— *Washington Irving.*

WHO that has read the above facetious description of the doings of our foremothers in the primitive days of New Amsterdam, but has made the mental observation voiced by a young woman in our hearing, recently, "How absurd to waste so much time and strength cleaning and scouring apartments and furnishings so rarely put to use;" and yet are there not hundreds of housekeepers in our own day who devote much time and energy to the doing of things quite as unnecessary? Not that we would in any wise underrate cleanliness, order, and good living, but there are essentials and nonessentials, and the wise woman is she who, giving thought to her profession, so plans and arranges her work as not to cumber herself with any but the needful cares. This she does not accomplish by shirking her duty, by leaving undone or half doing that which ministers to the comfort and health of her household, but by simplifying the processes of housekeeping through nice adjustment of means to ends, and by discriminating between that which is requisite for the well-being of her family and that which caters only to appearances, and encourages a love of luxury.

Dust and dirt invite disease; to keep out these foes to health is essential, but the task is made needlessly heavy in many homes by the complexity of their furnishing and adornment. The numerous useless pieces, the gilded chairs in which no one must sit, the dozens of ornamental pillows upon which no head may be laid, the shelves full of bric-a-brac, the multiplicity of tidies and doilies and photographs, which give such a bazaar effect to some rooms, are most excellent dust catchers, and must either remain undusted, or occupy hours of time in the process. The plea is that these things make a room "look so cozy," and add so much to its artistic effect. Possibly they do, in some instances; nevertheless, there is a beauty in simplicity combined with harmony of color and utility which makes practicable a cheery, pleasing, homelike apartment with far less demand upon the time and strength of the housekeeper.

It is essential that the cellar, refrigerator, sink, and every dark corner and closet about the premises should be kept sweet and clean, that disease may be avoided; but the woman who stands for hours ironing ruffles on the children's

everyday dresses and petticoats is making a needless sacrifice of energy, since ruffles are in no wise requisite to the health of the children, and they are likely to be even more happy dressed in simpler frocks. The same is true of the housekeeper who, with only one pair of hands to do the work, insists upon washing the windows for no other reason than that the neighbors are washing theirs, or loads her table with plated ware, necessitating daily scouring and burnishing, when china would serve every purpose equally as well.

To spend hours in making desserts and other complex dishes which merely cater to the taste, may likewise be classed among the nonessentials. While the preparation of food should be looked upon as of so much importance as to demand the most careful consideration and thought as to its suitability, wholesomeness, nutritive qualities, and digestibility, it should, by no means, be made to usurp the larger share of one's time, when simpler foods and less labor would afford the partakers equal nourishment and strength.

The prevalent custom of loading the table with a great number of viands, upon occasions when guests are to be entertained in our homes, is one to be deplored, since it is neither conducive to good health nor necessary to good cheer; but, on the contrary, is so laborious and expensive a practice that many are debarred from social intercourse because they cannot afford to entertain after the fashion of their neighbors. Upon this subject a well-known writer has aptly said: "When the barbarous practice of stuffing one's guests shall have been abolished, a social gathering will not then imply, as it does now, hard labor, expensive outlay, and dyspepsia. Perhaps when that time arrives, we shall be sufficiently civilized to demand pleasures of a higher sort. True, the entertainments will then, in one sense, be more costly, as culture is harder to come by than cake. The profusion of viands now heaped upon the table, betrays poverty of the worst sort. Having nothing better to offer, we offer victuals; and this we do with something of that complacent, satisfied air with which some more northern tribes present their tidbits of whale and walrus."

Aim to simplify housekeeping in all its departments; study to save steps by the most convenient arrangement of the tools and materials in relation to the work in hand; by sitting down in quiet, and thinking out the best ways of doing things, before beginning. Make a program of the duties of the day, and live up to it as nearly as possible in a business-like way. Study to *keep* clean, rather than to *make* clean. Let health be the ruling principle to which all else subserves. Housekeeping is a profession worthy the best energies of any woman, but it is pitiful indeed to see one wholly engrossed in performing the mere mechanical operations involved, with no thought beyond the immediate visible results of her work. Whether one knows it or not, whether one cares or not, the fact remains the same, that in the greatest measure is the life and health of the entire household dependent upon the faithfulness and intelligence with which the processes that go forward day by day in the household laboratory are carried out.

These are days of progress, and no housekeeper can afford to be ignorant of the fundamental principles of sanitary science and individual hygiene. Simpler ways of life will provide more leisure for study; larger knowledge of science and hygiene will make simplicity more easy and desirable; while health will join hands with simple living.

WELL-BALANCED MENUS.

BY LULU TEACHOUT BURDEN.

A WELL-BALANCED menu is one which contains the food elements in their proper proportions. Much study has been given to the arrangement of proper bills of fare for the sick, in hospitals and out; but there is no place where the need is more apparent than in the home; the menu is more simple, and it is intended that all members of the family will make a meal from the few articles supplied. Should this food combination fail to possess the elements necessary to maintain an ordinary person, it would in time result in the lowering of the vital power, and thus prepare the system for the inroads of disease.

Authorities differ somewhat, but approximately an ordinary person requires per day about sixteen ounces of carbonaceous food, two and one-half ounces of nitrogenous food, and one and one-half ounces of fat, these being water-free foods. In making out menus, a table giving the food values of various foods should be studied, and a proportion of about six or seven parts of carbonaceous foods to one part of nitrogenous foods should be used.

One meal would not amount to so much, but continually partaking of food that is not particularly nourishing or that furnishes only one food element, is not only unwise, but dangerous.

The time of year makes material difference in the menu, also the financial circumstances. People are obliged to live within their means, but it is fortunate that some of the most nourishing foods are the cheapest.

For some it might be advantageous to make out the menus for a whole week. Then, again, there are those whose quick ingenuity would not require so much forethought, as each day's needs could be quite as readily supplied without the menus. The best way to do is for each person to study her own situation and the likes and dislikes of those with whom she is dealing. In a short time, order can be obtained, and some system established.

The cold weather is a good time to use foods that require long cooking, such as the dried fruits, peas, beans, and lentils, and some of the vegetables, but with the returning warm weather, easily prepared foods are sought.

Breakfast Menus

No. 1

1. Oranges and Bananas
2. Browned Rice — Nut Cream
3. Plain Omelet
4. Zwieback — Cereal Coffee
5. Puff Cakes

No. 2

1. Baked Apples
2. Grains of Gold — Maple Syrup
3. Potato Puffs — Poached Eggs on Toast
4. Caramel-Cereal — Bread and Butter

No. 3

1. Stewed Dates
2. Toasted Wheat Flakes — Tomatoes Escalloped
3. Bean Patties — Sliced Lemon
4. Cereal — Graham Puffs

Dinner Menus

No. 1

1. Cream Corn Soup — Protose Cakes
2. Baked Potatoes — Brown Gravy
3. Asparagus — Succotash
4. Bread and Butter — Cereals
5. Cream Rice Pudding

No. 2

1. Tomato Soup
2. Mashed Potatoes — Kidney Beans
3. Fruit Sandwiches
4. Peach Froth Spongedrops — Fruit Nectar
5. Nuts

No. 3

1. Vegetable Bouillon
2. Escalloped Potato — Nut Roast
3. Macaroni Baked with Granola
4. Celery — Sliced Tomatoes
5. Fruit Pudding (Individual)

Tomato Soup.— Put one quart can of tomatoes through the colander. Season with salt to taste, add two tablespoonfuls of sugar, a little butter or nut butter, and when hot, thicken with one heaping tablespoonful of flour. Serve hot.

Cream Rice Pudding.— Wash one-fourth cupful of rice, and add to it one pint of rich milk that has been scalded. Also add three tablespoonfuls of sugar, a pinch of salt, and a little flavoring of some kind — vanilla, if desired. Cook in a double baker in a moderate oven for one and one-half hours. Serve hot or cold.

Peach Froth Spongedrops.—Mash one cupful of canned peaches, and press through a sieve. Beat the whites of two eggs until moderately stiff, add one tablespoonful of lemon juice, and continue beating until very stiff. Add next four tablespoonfuls of sugar, and then fold in carefully the peaches. Serve, when ice cold, over sponge cake that has been baked in small cakes by dropping them into gem irons and baking them.

Fruit Sandwiches.— Between slices of bread that have been cut about one fourth of an inch thick, and spread with butter or nut butter, spread a filling made by chopping very fine equal parts of steamed figs and nuts, moistening them with hot water and lemon juice, to form a paste. Dates, raisins, prunes, or currants may be used in place of the figs.

Escalloped Potatoes.— Peel and slice the potatoes thin, then arrange in layers in an oiled baking dish, first a layer of potatoes, then a slight dusting of flour, and potatoes again, until the dish is as full as desired. Over this pour sufficient salted cream to cover, and bake until the potatoes are tender. Add more cream if necessary.

Macaroni Baked with Granola.— Break into pieces about an inch in length sufficient macaroni to fill a large cup, and cook until tender. When done, drain, and put a layer of macaroni in the bottom of an earthen pudding-dish, and sprinkle over it a scant teaspoonful of granola. Add a second and third layer, and sprinkle each with granola; then turn over the whole a custard sauce, prepared by mixing together a pint of milk, the well-beaten yolks of two eggs, or one whole egg, and one-fourth teaspoonful of salt. Care should be taken to arrange the macaroni in layers loosely, so that the sauce will readily permeate the whole. Bake a few minutes only, until the custard has well set, and serve.

Asparagus with Cream Sauce.— Thoroughly wash, tie in small bunches, and put into boiling water; boil till perfectly tender. Drain thoroughly, untie the bunches, place the stalks, all the same way upon a hot plate, with a dressing prepared as follows: Let a pint of sweet cream (about six hours old is best) come to the boiling point, and stir into it salt to taste and a level tablespoonful of flour rubbed smooth with a little cold cream. Boil till the flour is perfectly cooked, and then pass through a fine wire strainer.

Asparagus with Egg Sauce.— Prepare and cook asparagus as directed above. When tender, drain thoroughly, and serve on a hot dish or on slices of nicely browned toast, with an egg sauce prepared in the following manner: Heat a half cup of rich milk to boiling, add salt, and turn into it very slowly the well-beaten yolk of an egg, stirring constantly at the same time. Let the whole just thicken, and remove from the fire at once.

THE SUN AS A DISINFECTANT.

THE following article by Surgeon-General G. M. Sternberg, U. S. A., which recently appeared in the *Youth's Companion,* is so instructive and timely that we give it almost verbatim: —

"Although man from the earliest times has recognized that the radiations of the sun — light and heat — are essential for the continuance of life upon our planet, only within the last twenty years has it been demonstrated that sunlight is fatal to some of the lower forms of living things, including certain disease germs which are the cause of some of the most fatal infectious diseases that afflict the human race. In fact, the greatest disinfectant in nature is light, or, to be more exact, the radiations of the sun, including heat rays, light rays, and the invisible rays at the violet end of the solar spectrum.

"An infectious disease is one which may be contracted by the introduction into the living body of living disease germs which may be contained in different kinds of infectious material. Thus the disease germ (bacillus) which produces diphtheria is contained in the 'exudate,' or 'false membrane,' deposited in the throat or nasal passages of those suffering from this disease; and the material coughed up by a patient with diphtheria is infectious material. In cases of pulmonary consumption, the germ (also a bacillus) is contained in material coughed up from the lungs — *sputa.*

"WHAT IS A DISINFECTANT?

"In cholera and in typhoid fever the discharges from the bowels contain the germ, and are consequently infectious material. In smallpox and scarlet fever the germ is present in material detached from the general surface of the body.

"Now the object of disinfection is to prevent the extension of infectious diseases by destroying the specific infectious agents — germs — which give rise to them; and this is accomplished by the use of disinfectants. Having, as I hope, made this clear, I desire to call attention to the fact that the term 'disinfectant' is popularly used in a much broader sense.

"Any chemical agent which destroys or masks bad odors is commonly spoken of as a disinfectant, and there are a large number of so-called 'disinfectants' in the market which are simply deodorants, and which are entirely untrustworthy for the destruction of infectious material — that is, of material containing living disease germs.

"These disease germs belong to the class of low vegetable organisms — microscopic plants — known as bacteria, which, as a rule, thrive better in the darkness than when exposed to daylight; and some of them are quickly destroyed by exposure to direct sunlight. In experiments made by me in 1893 it was demonstrated that the cholera bacillus is infallibly killed by exposure to direct sunlight for an hour or two; and the distinguished German bacteriologist, Dr. Robert Koch, has shown that the bacillus of consumption — tubercle bacillus — is destroyed by similar exposure in a time varying from a few minutes to several hours — depending upon the thickness of the layer of material in which it is imbedded.

"As a result of this, it is evident that the material coughed up by patients with consumption, and containing tubercle bacilli in vast numbers, is far less dangerous to the community in regions where the patient can live out of doors, and where the sun shines nearly every day in the year, as is the case in portions

of Colorado, New Mexico, Arizona, and California, than in sections of the country where climatic conditions are unfavorable to an outdoor life, and where the skies are clouded a considerable part of the time.

"THE DRIED-UP GERMS.

"I may be permitted, also, to call attention to the favorable influence of an outdoor life in an elevated and dry region, where the sun is rarely obscured by clouds, upon patients suffering from pulmonary consumption, especially in its early stages.

"Some disease germs, which are not killed outright by exposure to the sun's rays, are greatly restrained in their development. This is true of the bacillus of typhoid fever. Although it has been shown by carefully conducted experiments that certain disease germs are promptly destroyed by the luminous radiations from the sun, and especially by those at the violet end of the solar spectrum, it is also true that the heat rays play an important part in the destruction of harmful bacteria.

"This is partly due to the fact that certain disease germs are quickly destroyed by being deprived of all moisture — by desiccation. Thus the germs of cholera and of pneumonia quickly perish when completely dried.

"Other germs, however, as those of typhoid fever, of diphtheria, and of consumption, may retain their vitality in a dried condition for several months. But the germs of all these diseases are destroyed by a comparatively low temperature. In experiments which I made several years ago, I ascertained that the germs of pneumonia and of cholera were killed by exposure for a few minutes to a temperature of one hundred and twenty-six degrees Fahrenheit.

"A still lower temperature is effective if the time of exposure is prolonged. It is, therefore, evident that prolonged exposure to the direct rays of the sun would destroy these germs, independently of the disinfecting power or germicidal action of the luminous rays, or the fatal results of desiccation.

"Other disease germs require a higher temperature for their destruction. The typhoid bacillus and the bacillus of diphtheria are killed by exposure to a temperature of one hundred and forty degrees Fahrenheit for ten minutes. In general, it may be stated that this temperature is fatal to all the most important disease germs, with the exception of the tubercle bacillus, which requires a somewhat higher temperature.

"The facts stated furnish a scientific basis for practical disinfection, and it is evident that when sunshine is available, no chemical agents are essential for the destruction of disease germs. Any article of food or drink which has been heated for a few minutes to something near the boiling point of water is absolutely safe as far as any danger from disease germs is concerned; and any article of clothing which has been put through the ordinary operations of the laundry is as safe as if it had been placed for an hour in an expensive steam disinfector or immersed in a strong disinfecting solution.

"It will be seen that scientific investigations fully justify the practice of good housewives, who at frequent intervals expose their blankets and articles of woolen clothing which cannot be placed in boiling water without injury, to a prolonged sun bath; who scald out milk pans and kitchen utensils, and place them in the sun to dry; and who open up their sleeping apartments for the admission of sunlight and fresh air. The fresh air displaces the air which has been con-

fined in the room, and sweeps out into the sunlight many disease germs which may be suspended in it.

"HOW INFECTIOUS DISEASES MAY TRAVEL.

"No doubt it is largely due to the disinfecting power of the sun's rays that infectious diseases are rarely, if ever, conveyed any considerable distance through the air. A case of smallpox or of diphtheria or of typhoid fever across the street does not place the occupants of neighboring houses in any special danger, as far as the transmission of these infectious diseases through the air is concerned. But there are other ways in which disease germs may be carried, and by which they are usually conveyed from the sick room to other, and often to distant, localities.

"They may be carried in clothing sent out of the house for laundry, or they may be attached to the clothing of those who have visited the sick room, or may adhere to the hair of pet animals, or to the feet of that domestic pest, the house fly, which is now believed to be responsible for the occurrence of many cases of infectious disease, the origin of which could not be traced.

"One very common and widely distributed infectious disease is carried through the air for considerable distances, but in this case the germ does not travel independently, and is not exposed to the dangers of being killed by sunlight and desiccation. It is carried in the body of an 'intermediate host,' the mosquito. The disease is malarial fever, which has been proved to be due to a blood parasite that is introduced into the human body by means of the punctures made by infected mosquitoes.

"The best disinfectant is that supplied by nature — the light and heat which travel ninety millions of miles from the great central star of our planetary system, to irradiate the earth, and make it fruitful and habitable for man."

BE HAPPY.

BE happy to-day. No matter about yesterday nor to-morrow; be happy to-day.

Are you poor? Unhappiness will not make you rich.

Are you ignorant? Unhappiness will not make you wise.

Are you sick? Repining will not give you health.

Did you do wrong yesterday? Regretting will not correct the act nor atone for it.

Are you unable to see your way clearly to meet the demands (fancied or real) of to-morrow? Fear and worry solve no problems. Understanding and effort can alone do that, and no type of unhappiness ever gives understanding or strength to work or think effectively.

Are you afraid to be happy, lest you cease to strive, and so idly drift? Depression, worry, and fear weaken and destroy. Their apparent energy is a spendthrift energy borrowed from to-morrow, and the debt must always be paid.

Are you in pain? Be thankful, and make the pain your friend by learning its lessons. I do not mean, to be thankful that you are in pain, but that you can learn its meaning, and then obedience will stop the pain. We suffer only when we disobey. Pain, then, comes that we may learn the lesson, and escape the pain.

Fretting over yesterday wastes our

strength and blinds the eyes for to-day's duties, and in both ways making it harder to do to-day's work.

Yesterday's errors cannot be undone.

Do to-day the very best you can.

Neither crying over yesterday nor making faces at to-morrow will enable us to do better than our best.

We can *do* better only by *knowing* better.

We cannot learn to know better simply by repining or anticipating.

We learn to know better by thinking.

Extract the lesson out of yesterday, borrow sunshine from to-morrow, but do to-day's work to-day.

To-morrow has no bottled good labeled for you, awaiting a demand check.

Labor, cash, payment, character: these only are received in exchange for joy, love, or health.

Heredity is capital stock, which, if not utilized and added to, but drawn on only, must sooner or later give out.

Commence to-day to do to-day's work — commence where you are, with to-day's ability and to-day's light. Don't stop to pity those below, nor to growl at those above, but climb, climb, climb. Do your level best in the light of the unity of all things, all persons, all efforts, in the light of the distinction of each, but the separation of none, and you have done your best for both those below and those above you. Work to-day, remembering that as you gave, so shall it be given to you again.

Fight appeals to fight, sorrow to sorrow, tears to tears, love to love, happiness to happiness.

We may reap to-day of to-day's sowing, but it is sown in our characters, and will accompany us into to-morrow. The sown seed never dies, never fails of a crop, and we never fail to reap somewhere, sometime, the fruit of the seeds sown. It is sown in the character, and will be with us in every coming to-morrow as our working capacity. To escape, we must sow again of another kind of seed, and again reap.

Tears in the eyes of to-day mean disaster in the heart of to-morrow, for a task poorly seen will be poorly done.

Look upon to-day as a portion of eternity.

Well, but what about money? Money that builds good, pure, lovable character is desirable, and will bear fruit in every to-morrow that shall become a to-day, but it is not worth the price of love, unselfishness, generosity, breadth of mind, stability of character. Money is like words. Words are not ideas, but simply the signs of ideas. Money is not value, but represents value, and that value is the power, the mind, the character capable of desiring, getting, and utilizing these. So love the power to get money, not money; love the power to spend it wisely, not to hoard it; love it for what it will do, not for itself. Own your money, but do not let it own you. Use it to-day if necessary. Money hoarded instead of being wisely spent is a burden on the back of to-morrow. An idle dollar is an evil dollar, for it becomes the mother of greed, miserly greed.

It is quite clear that if I make myself happy to-day, and then keep up being happy on each succeeding day, I will always be happy. Some stop here, and interpret this as a license to do anything they please. This, however, can have but one termination — disaster. How then? Be happy to-day, but happy doing, thinking, and saying what past experience seems to warrant us in believing will result favorably.

Guide conduct by intelligence, and then know that that is our best. Nothing but our best can make us happy.

We are parts of one great organism, and must direct our lives in harmony with the rest of the social body to which we belong. Yet all this will be done some day without friction. None of us can do it now, but it should be our ideal, and then we will ever approach it nearer and nearer, as the days pass by.

So I say once more, Be happy to-day, and do not fret over yesterday, nor cry about to-morrow. But never forget that this does not absolve us from the need of keeping in mind all the lessons of every yesterday — keep them in mind, not to repine over, but to use. So, I would say, Act wisely, contentedly to-day, but learn the lesson of yesterday, and keep the weather eye on to-morrow, but always be happy. It will pay.— *S. F. Meacham, M. D., in Suggestion.*

MOVING IN.

EXAMINE the cellar carefully for indications of dampness or of water accumulation. Reject a place with a wet cellar, without any further investigation. Look at the heating arrangements, and if, in your opinion, they are adequate, see that the apparatus is in order and not affected with rust. There should be ample provision for ventilating the cellar without impairing its security. The cellar floor should be cleaned by washing, and if the walls have not been newly whitewashed, they should receive a fresh coat, and, after the floor is dry, a mixture of chloride of lime, one pound, and clean, dry sand, ten pounds, should be strewn along the entire edge of the floor where it joins the side walls.

On the first floor of the house, and above, all doors and windows should be opened, and the whole house thoroughly aired as many hours as possible during the daytime. The further examination should include the plumbing, the woodwork, especially that in the bath room; laundry and clothes closets; the windows, and all the walls, if papered.

As soon as possible all fixtures, such as wash bowls, water-closet bowls, wash tubs, and sinks, should be cleaned with hot water and a solution of chloride of lime, made in quantities of this proportion: chloride of lime, three ounces; water, two pints. This preparation should not be permitted to come in contact with anything that its bleaching qualities will damage, such as clothing. If waste pipes do not permit fluids to run off freely, the owner or agent should be required to have them cleared by a plumber, who should also repair any cracks or breaks which may be discovered. In washing the floors and woodwork, it is important that the floors and the top edges of the door and window casings be gone over with a weak solution of bichloride of mercury (corrosive sublimate, the well-known deadly poison, which has long been used in household practice as a "bug poison"). The formula suggested for a standard solution is: bichloride of mercury, four ounces; water, one gallon. Two fluid ounces of this, added to a gallon of water, can be used in cleaning, without danger from absorption through the skin of the hands, or even if accidentally drank. It is the best disinfectant and germicide that we have. Great care should be exercised regarding its use in the concentrated form, called the "standard solution," and to avoid the possibility

of its identity being mistaken, it is best to color it. The following mixture is given as a "standard solution," with a blue color: bichloride of mercury, four ounces; sulphate of copper, one pound; water, one gallon. The sulphate of copper adds to its value as a disinfectant, and imparts the warning color. A preparation of bichloride of mercury should not be kept in nor used from a metal utensil, nor should any considerable quantity be disposed of through lead pipes, as it will injure them.

If walls are papered, it should be remembered that in that condition the walls afford an ideal lodgment for disease germs. For that reason, it is advisable to demand a renewal of the paper, the old paper being removed, if it has not already been done since the previous occupant left. Clothes closets should be very thoroughly treated with the diluted bichloride solution, and extra attention be given to the disinfection of woodwork in the sleeping rooms.—*Lena Straub, in Good Housekeeping.*

THE HEALTH OF AMERICAN WOMEN.

ASIDE from our variable climate and the excitement of a young civilization affecting men and women alike, aside from improper dress, diet, and general habits of life, there are many social customs and restrictions in this country which are detrimental to the health of American women.

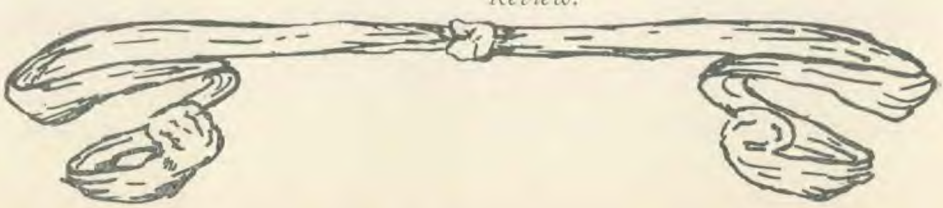
Girls suffer the disadvantages, from ignorance of parents and teachers, that boys do, in addition to numberless deprivations inflicted on them alone. There are rules of conduct that hold them in a condition of neutrality, destroying, in time, all self-reliance, and making them afraid alike of a thunderstorm and a mouse. When courage in woman proves useful to the public weal, we hail it with approval; but, to mold our daughters into the popular idea of what is "lady like," we educate all bravery out of them. Sitting on a piazza one day, watching a girl and boy at play, their father remarked: "I am trying the experiment of educating my son and daughter alike, to see if it is possible to make them equally self-reliant." Turning, he saw them climbing a tree, and cried out, "My daughter, do not go any higher." "Why not?" said she. "Bob goes to the top; I have two legs as well as he," and on she went. I promptly called his attention to the effect of such remarks, and added, "Fortunately, your daughter's confidence in herself is stronger than her reverence for your authority, and she takes her rights." The schoolgirls in our cities seldom have playgrounds or gymnasiums; their exercise consists in filing, two by two, down some fashionable street, duly instructed to neither talk nor laugh loud, and to move as if to the music of the dead march. A girl's impulses seem to be ever in conflict with custom, and if she chances to have some perception of first principles, and debates any of these primal rights, she is silenced with the reply that such are the customs of society, and she must submit or be ostracized.

At an early age we present our pale girl with a needle. When we consider attitude and confinement necessary to sewing, can we wonder that she grows paler? Let us base our social customs

on the truth that for many years our children are mere animals. Do not saddle and bridle your colt too young, or you will ruin your horse. Then, too, our girls make their début in society too early, often at the age of sixteen entering upon a round of social gayeties. When we think what this young life must sustain, the delicacy of American women should cause no surprise: 1, the girl must rally under a great physical change; 2, she must stand well in school; 3, she must assume some care of her own wardrobe; 4, she must obey the behests of society. Compare this with the school days of boys,— study and play, nothing more. Even in the laboring classes, where some work devolves on boys, it is always of a healthful nature: chopping wood, making gardens, or running of errands. So unequal are the requisitions made on the sexes outside the schoolroom, that one of two conclusions is inevitable,— either boys are shamefully lazy, or girls are cruelly overworked. From fourteen to twenty-five is the allotted age for study. You can swallow whole and digest a Greek verb at fifteen, but even after the most complete mastication, it gives you a mental dyspepsia at forty. Hence the importance of concentrating into the years of impressible memory all of intellectual development that is compatible with the highest physical health. I plead for the heroic in study and play, and for the freedom of youth as long as possible. It is not a stoic's life I demand; a canter on horseback is more desirable for pale cheeks and cloudy brains than an anxious hour over a cookstove. To the declaimers against ill health, our American girls would do well to say, "We will take care of the higher education, if you will let the cookstove and needle take care of themselves."

So far I have spoken of the life of ordinary women,— of the majority. The struggle others have made to secure education and position, and the humiliations they have endured, have been sufficiently trying to undermine the health of the strongest. No one is wholly insensible, however regardless of the customs of the world about them, however self-centered, however exalted by enthusiasm. To endure ridicule stings the spirit and reacts upon the body; to meet opposition wounds the pride and impairs the health; to suffer abuse and scandal wearies the heart and bows the head; to surmount obstacles exhausts the reserve energies of mind and body. A woman of ambition feels herself alone, and by sheer pride is pricked on to endeavor beyond her strength. If, in her struggles, her health breaks, she is called, by those who forget the hindrances they placed in her way, "a victim of higher education." Not a woman who has found an occupation outside of domestic life has escaped injustice, however small, done her simply because of her sex.

But you object, and justly, too, that there is a large class of women who were healthy in childhood, and have suffered from neither household drudgery nor injustice in the outside world, and yet who are confirmed invalids. This may be explained by the remark of Madame de Sevigne, that the ill health of women is due to the fact that they are too constantly in contact with chairs.— *Elizabeth Cady Stanton, in North American Review.*



Fresh Air for Lung Difficulties.

The heart, brain, and lungs are often called vital organs, because upon them, as upon a tripod, rests the lamp of life. Life is quickly extinguished if any one of these vital organs ceases to act. Virgil called the atmospheric air, the vital air, because it is the channel through which the essential principle of life is conveyed to the blood; and again, the blood is called the river of life, because no part of the body can be long sustained without a proper circulation of the blood. To breathe well is to live well. How to breathe well and utilize the vital air is therefore the one important thing in lung difficulties. To know the nature and office of the lungs and their relation to the vital air, and to the circulation of the blood, is to know the chief remedy for all lung complaints. It is as unnecessary to name every symptom or varying condition of the lungs or body, as it is to measure and name the waves of the sea; all we need to know is the primal cause of the trouble and how to remove it. Pneumonia is only another name for what is called lung fever, or inflammation of the lungs. Inflammation signifies "inflame," or "on fire," and conveys almost as much meaning to the common mind as to the learned medical expert. The latter knows inflammation chiefly by its five symptoms of heat, pain, redness, swelling, and disturbance of function; and none of these, nor all together, are a sufficient guide to the proper remedy. The ordinary medical expert assumes that the real cause of tuberculosis is a microscopic organism, named by the profession, "tubercle bacillus." Having made his diagnosis, he wages a deadly warfare, ostensibly against the insignificant microbe, but really against the vitality of the patient. Now it is clear to the intelligent physiologist, who is not blinded by the pseudoscience of bacteriology, that what the patient really needs is more atmospheric air to air the blood in the lungs, and this can be easily and readily obtained by his own voluntary effort. Asthma, colds, coughs, croup, and all lung difficulties are easily cured and effectually prevented by natural methods, without the use of any drugs. To remove the cause is to cure the complaint. Why depend longer upon drugs and dangerous methods which from time immemorial have failed to perform what was promised? There is a sure cure in the atmospheric air which surrounds us every moment — the vital air. The venous blood of the entire body comes to the lungs in a great wave, at every pulsation of the heart. It comes for air, or oxygen. If it does not get it, it remains or lingers in the lungs until the lungs are clogged or choked up. To get air enough into the lungs to change the venous to arterial blood is the key to the whole situation.— *George Dutton, B. A., M. D., Chicago, in Suggestion.*

Regular Exercise.

Regular exercise is one of the best means of getting rid of superfluous flesh; but to do any good, it must be taken systematically every day, in the air, if possible; if impossible, then in the house, in the form of calisthenics. Do not begin suddenly to take tremendous walks, if you are not in the habit of walking, but do things gradually, beginning, say, with a couple of miles, or even less, a day, and taking longer distances as you get accustomed to the exercise. Perseverance in exercise pays, as it does in most other things.— *Indian Medical Record.*

Air and Water.

Air and water are the two remedies apt to be overlooked by the profession in the search for cures, yet as all progress is constantly bringing us back to, and accentuating the value of, first principles, we occasionally find cases on whom all medicines have lost effect, and who yet can be restored by the intelligent use of these two natural agencies.

We have a case in mind at this writing. The patient had been an invalid for years. She had been the round of doctors and "pathies," and had experimented with all the fads at home and abroad, with only temporary benefit. At length, she fell into the hands of a common-sense doctor in a little country town, where she was passing the summer.

He regulated her diet, and established her habits on a sound hygienic basis. Then he taught her how to breathe (something which many people do not know), and insisted that she drop everything, and devote a few minutes several times a day to proper breathing. Also, and most important of all, that she drink a glass of water every hour of the day while awake.

She followed his directions to the letter, principally out of curiosity at first, and later, because she began to see the good effects of the treatment. Her color improved, her flesh became firm, and her bowels regular. In six months she was perfectly well.

The tissues of this woman were full of impurities, which the increased supply of oxygen and water either burned up or flushed out into the proper channels of elimination. The circulation and excretory organs felt the stimulus of the additional fluid, and increased their work. When the autotoxemia was relieved, all the unpleasant symptoms subsided.

The good effects which follow a sojourn at the various mineral springs, are due chiefly to the large amount of water drunk, and the moderate, but regular, amount of exercise involved in getting it.

Consumption is a house-air disease; probably catarrh is also. In all chronic diseases, there is a condition of self poisoning. Here the remedial value of air and water is not half appreciated. Give your patients a tablet, to be dissolved in a glass of water, or a small vial, from which a few drops may be added, to insure that they drink the full amount. Insist upon their getting outside, warmly wrapped in cold or inclement weather, and breathing deeply, slowly, regularly, at certain intervals during the day.

At the end of a few weeks or months, you will be perfectly astounded at the alteration for the better effected in apparently desperate cases, without a drop of medicine. Try it.— *The Medical Brief.*

Massage.

An intelligent appreciation of the value of massage seems to be confined to a few physicians. A similar few make a fad of it, and by its promiscuous use, pervert its beneficial effects, and so tend to bring it into disrepute. Its true place as a therapeutic agent should be known to all, for there are cases in which it stands unrivaled as a source of relief.

In cases where the blood and secretions are thick, the circulation sluggish, the nerve centers torpid, sensibility deficient, and the special senses blunted, massage is invaluable. Tissue metabolism and elimination are impaired in these cases, and the effect of massage is to stimulate the cell changes which we call nutrition, and to improve the lymphatic and venous circulations, leading directly to improved excretions.

Massage stimulates the medulla, or nerve of organic life, and hence exercises a beneficial influence over all the vital functions. It is particularly helpful in diseases of degeneration and devitalized conditions. In the bilious and lymphatic temperaments, especially where there is a tendency to obesity, massage will give you satisfactory results. Hysterical patients are benefited by massage if the reflexes are sluggish. Wherever you find cutaneous anesthesia, a slow or deficient response of the reflexes, you will get good effects from massage.

On the other hand, the nervous and sanguine temperaments, generally, are not benefited. Such patients are made worse by massage. They do not require stimulation of any kind. Massage exhausts them or intensifies the nervous condition.

There are persons who complain of chronic discomfort; they never do anything much, yet are always tired. This fatigue is the result of a toxic condition of the blood. Massage rests such people. They experience a heavenly sense of peace and physical well-being afterward. It enables them to secure refreshing sleep, and to eat with appetite.

Get your indications for massage clearly, then keep your enthusiasm subordinated to them, and you will make it contribute to your success.— *The Medical Brief.*

Physical Exercises in the Treatment of Pulmonary Tuberculosis.

Parker Murphy, in the Albany *Medical Annals,* says physical exercises play an important rôle in the treatment of pulmonary tuberculosis. They are contraindicated where there is temperature. One of the most important movements relates to the arm and the chest. He instructs patients to breathe deeply, even when they have fever. After the latter subsides, the patients are told to continue the deep respiratory movements, and with each inspiration to raise the arms slowly to a horizontal position, and then over the head until the arms meet. As the arms are brought down, the patient exhales. This brings into action the supplementary muscles of the chest and shoulders, imitating the effect of altitude upon the respiration, expanding the chest, and bringing into action unused portions of the lungs, thus securing better ventilation. The movements may be varied, but the underlying principle is the same. Whatever movements are ordered, they must always be accompanied by a voluntary deepening of the inspiration.

Such exercises are of quite as much importance in convalescence from pneumonia and pleuritis as in cases of pulmonary tuberculosis. In all the inflammatory maladies of the lungs, there is a tendency to stasis and passive congestion. To correct this there is nothing better than deep inspiration.

Unsanitary Wall Paper.

Unsanitary methods of hanging wall paper have been strongly and often condemned by physicians and intelligent householders. The paper hangers themselves have been paying considerable attention to the matter of late, and unsanitary paper hanging, it is hoped, will soon be a thing of the past. The master paper hangers' association, of Philadelphia, is interested in a bill proposed for presentation to the Pennsylvania Legislature, making it unlawful to repaper a room until all the old paper has been scraped off. It was reported by the association recently that many instances had been found where four or five layers of paper remained on walls and ceilings.

There seemed to have been no attempt to remove the old paper. Often this has happened in houses which have been at times infected by contagious diseases.

The simplest way to remove old paper is to give it a good soaking with hot water. Some papers, such as cartridge papers, however, cannot be removed in this way, as the water will not penetrate. In such cases, give the paper a liberal coat of hot flour paste mixed to the consistency of cream. The water in the paste will then penetrate the paper, and it may be peeled off without difficulty. Use a square-bladed putty knife, and use it vigorously. Paste can be made antiseptic or a breeding place for disease germs. That is a matter which must be intrusted to the conscience of the paper hanger. Most of them are intelligent enough to know where danger lurks. All the householder can do is to insist upon having only sanitary paste used. Especial care should be taken if the walls are inclined to dampness, as is frequently the case near the floor on a lower story, or at the ceiling of an upper story. The careful housewife cannot insist too strongly on having the papering done right. It is about as important a matter as plumbing.— *Walter A. Dyer, in Good Housekeeping.*

The Fatal Bloom on the Fruit.

Schnirer reports the results of an examination showing the danger of eating fruit without first washing it. While at work one day in Weichselbaum's laboratory, he sent for some grapes to eat. The fruit had been kept for some time in a basket outside the laboratory, and was covered with dust, so that the water in which it was washed was black. On examining this, Schnirer reflected that, inasmuch as the neighboring street was traversed by consumptive patients going to the clinic, the dust might contain tubercle bacilli, and to settle this, he injected into three guinea pigs 10 c.c. of the water in which the grapes had been washed. One animal died in two days, the two others died on the forty-eighth and fifty-eighth days, respectively, the latter presenting marked tuberculous lesions, especially at the place of injection. The water in which the grapes had been washed was taken from the faucet, and the glass containing it had been sterilized; neither the boy who had brought the grapes nor the merchant who had sold them was consumptive. The cause of the infection was beyond doubt the dust on the grapes.— *Medical Record.*

Cure for Obesity.

A certain fat man in New York who wished to reduce his weight began by collecting pamphlets offered by firms that advertise cures for obesity. He was much struck by the fact that all agreed in one particular. While each firm advised the regular taking of its particular cure, and several said, "Others are useless, or worse," all insisted that a great deal of exercise and a peculiar diet must be taken with the medicine.

About six months afterward, the pamphlet collector, now no longer a fat man, entered a New York drug store.

"I'm eternally obliged to you," he said to the proprietor.

"How's that, sir?"

"Six months ago I weighed two hundred and twenty-seven pounds. Now I weigh only one hundred and eighty."

"Would you kindly give me your name and address, sir?" said the fat-cure vender, in great delight.

"Certainly," and he gave it.

"If you'd allow us to refer to your case, we should be greatly obliged."

"Certainly. That's what I came in for. I've written out a certificate."

He handed it to the delighted proprietor, repeated, "I'm eternally obliged to you," and departed.

The druggist read the following:—

"I have much pleasure in recommending Mr. ———'s pamphlet on the cure of obesity. In consequence of reading it, I have reduced my weight in six months from two hundred and twenty-seven pounds to one hundred and eighty pounds, with great benefit to my general health. I rigidly followed the pamphlet's advice to take regular exercise and eschew fatty, starchy, and sweet foods. This saved me a good deal of money, for I never took one particle of Mr. ———'s medicine."—*Youth's Companion.*

A Beautiful Custom.

A timely topic is treated in the following, from an unidentified source:—

"'Mothering Sunday' in the northern part of England and Scotland is marked by a filial custom, pure and tender in intention.

"The Sunday falling the nearest mid-Lent is set apart by young people (boys and girls alike), if out at service, to visit their parents, bearing with them some trifling gift of love and duty. The mother is particularly honored in their bestowals, hence the name given to the day.

"In English fiction and poetry, mention is so often made of the occasion.

"The favorite gift to the mother on these happy reunions was a 'simnel'—a sweet cake generally supposed to belong only to the festivities of the especial Sunday. The poet Herrick alludes to this cake and the beautiful custom in connection with it as existing at the beginning of the seventeenth century, although dating from a period far more remote. How very sweet the sentiment expressed in the little verse:—

> "I'll to thee a simnel bring
> 'Gainst thou go a-mothering;
> So that when she blesses thee
> Half that blessing tho'lt giv me."

"It is a pleasant thought that the ancient custom still maintains, especially in rural districts, of thus honoring father and mother on a certain date, by visit and gift. Other things are bestowed as love's offering, but almost always accompanied by the simnel. Mother hearts everywhere will understand what a sweet morsel it proves to the woman who has been compelled to let son or daughter go from her to make their own way in the world, into which she follows them ever with her love and her prayers. The very sight of the cake recalls the joyful day to come, in which she will hold them in her arms again, with thanksgiving and blessing, as she has in the past."

The idea of a "Mothering Sunday" is a very sweet one, and one that would well bear transplanting to our own country, or to all countries.

The dear mother love is next to the great love divine, and, indeed, we think is a very part of it. The older we grow, the more we turn back to that love that was once ours, and so we long to impress on the hearts of the younger ones the beauty and the duty of remembering now the mother from whom, perhaps, they are separated, but whose heart yearns over her children, and longs for their love as much now as when they lay in her arms.—*Grand Traverse Herald.*

On the very first morning of Bobby's visit to his grandmother he said, very politely, but decidedly: "If you please, grandmother, I don't want nutritious food. I want to eat what I'd rather!"

The Plethoric Picnic Pie.

The joyous picnic season is here, but that it does not bring peace and happiness to all alike is clearly shown by a composition written on the subject by a girl in a New York high school: —

"May parties will soon be ripe, and the June walk season will follow hard upon. The difference between a May party and a June walk is a simple matter of chronology. Each has its queen of brief authority and its chaperon of absolute sway. Each has also its hamper, which is as deadly an enemy to the Manhattan populace as the frying pan to the Kansas farm hand. I took an inventory of one of these hampers last year, and as I was a member of the physiology class at the time, it startled me out of a session's growth.

"When the hamper was opened, the chaperon drew forth one bag of sandwiches and one pie; one bottle of pickles, one pie; one sponge cake, one pie; one roast chicken, one pie; one bottle of lemon juice, one pie; one bag of assorted cookies, one pie; one dozen doughnuts, one pie; one package of biscuits, one pie. This was all except that there were a few extra pies at the bottom, for the purpose, I suppose, of forestalling famine.

"The chaperon wondered after luncheon why the girls and boys didn't enter into their play with as much zest as they did when they first arrived at the park. I didn't. I was studying natural history at the time, and only a few days before a lucid explanation had been given why the boa constrictor takes a month's nap after dining on far more digestible food than anything I saw in Central Park that day."— *Youth's Companion.*

Why a Mother Hen was Killed.

The following paragraph from the *Methodist Christian Advocate* presents a stronger argument for vegetarianism than a whole volume of scientific facts could adduce: —

"A story is told in Michigan about one of the members of the Detroit Conference, which is too good to keep. He was spending a day in the country, and was invited to dine. They had chicken for dinner, of course, much to the grief of a little boy in the household, who had lost his favorite hen to provide for the feast. After dinner, prayer was proposed, and while the preacher was praying, a poor little lonesome chicken came running under the house, crying for its absent mother. The little boy could restrain himself no longer. He put his mouth down to the hole in the floor, and shouted: 'Peepy, Peepy, I didn't kill your mother. They killed her for that big preacher's dinner.' The 'Amen' was said very suddenly."

Turgenieff and Pheasant.

The *Popular Science News* prints the following item concerning the great Russian writer: —

"Turgenieff, the Russian novelist, went out hunting golden pheasants with his father; one was seen; he fired and wounded it, then followed it into a thicket, where, with the instinct of the mother, she was trying to reach the nest where her young brood was huddled. She reached them, spread herself upon them, her head toppled over, and she died. He there and then vowed he would destroy no living creature, and he kept his vow."

To be intending to live a new life, but never to find time to set about it, — this is as if a man should put off eating and drinking and sleeping from one day to another until he is starved.— *Tillotson.*

EDITORIAL.

VEGETABLE PROTEIDS.

PROTEIDS are perhaps the most important of the three indispensable food elements, carbohydrates (starch and sugar), proteids, and fats. Several substances, differing somewhat, yet closely resembling one another, are included under the head of proteids. These are, chiefly, albumen, casein, fibrin, and gelatin. These elements are found in the animal and vegetable substances. Animal albumen is represented in the purest state in the white of egg. It is also found in raw-meat juice, and to a small extent in milk. Casein is represented in the curd of milk, fibrin in the clotted blood; a closely allied substance is found in lean meat. Gelatin is found to some extent in meat, but more largely in the bones. Each of these elements is found in vegetable substances, some of which are richer in proteids than any animal substances. Albumen is found in the juices of all the vegetables, and is especially abundant in the seeds. Nuts are very rich in vegetable albumen. Vegetable casein is found in legumes,— peas, beans, lentils, etc. It is also a large constituent of the proteids of nuts. Fibrin is found in small amount in many vegetable substances, especially in seeds. It is a prominent constituent in the gluten of wheat, which also contains vegetable gelatin, or glue. It is this element which gives to gluten its peculiar properties, the gelatin serving to bind together a number of different vegetable proteids, including in addition fibrin and vegetable casein.

Vegetable proteids differ from animal proteids in several important particulars, especially the following: —

1. While the chemical composition of vegetable proteids is essentially the same as that of animal proteids, there is this difference, which is decidedly in favor of the vegetable proteids: All animals are machines for using energy. Destruction of tissue is constantly taking place in the tissue of every living animal. This breaking down, or destruction of tissue, invariably results in the formation of poisons. The most deadly poisons are constantly present in small quantities in the tissues of every animal. It is only through the incessant activity of the kidneys, skin, and other excretory organs that these poisons are removed, and the life of the animal preserved. All flesh foods are more or less impregnated with these poisons. Uric acid is a representative of one of the most important groups of these poisons. It is for this reason that the free use of meat gives rise to rheumatism, Bright's disease, neurasthenia, gout, and other maladies which grow out of the uric acid diathesis. Vegetable proteids are entirely free from this objection. They are absolutely pure, and void of any noxious influence whatever; besides, they are not liable to contamination by the diseased products to which flesh foods are continually liable.

2. The digestibility of proteids is increased by cooking, while animal proteids are rendered less digestible by cooking. To be strictly physiological, one should eat his vegetable proteids cooked, and his animal proteids raw; but the use of raw meat would be for the great majority absolutely insupportable. Only savages find it agreeable to take their food in this way. The art of cookery is thus an aid to the nutrition when the body is fed upon vegetable substance, but is a hindrance when animal substances are made the source of nutrient material.

3. Another important advantage in the use of vegetable proteids is the fact that they are much more abundant, and hence more readily accessible, so they are not only more digestible, but more economical. The cost of a pound of vegetable proteids in the form of wheat, for example, disre-

garding the other elements associated with it, is from five to seven cents; while a pound of animal proteid in the form of tenderloin steak, purchased in Boston, is from $1 to $1.25, or from fifteen to twenty times as great as that of the wheat. The proteids are reckoned as dry substances in both cases. The cost of vegetable proteids in the form of corn is about one third less. Beans, peas, and lentils are exceedingly rich in proteids, a pound of some varieties of beans containing as much proteid as one and one-half pounds of beefsteak, in addition to starch and other food elements, of which it contains nearly twice as much as of proteids. The price of beans fluctuates considerably, but with beans worth two cents a pound, the cost of a pound of bean proteids would be six to eight cents, or a little more than that of wheat. The cost of vegetable albumen in the form of nuts varies with the variety of nuts with which the comparison is made. Almonds contain about one fourth their weight of proteids. When worth twenty cents a pound, the cost of a pound of dried proteids in the ripened almond would be about eighty cents, a little less than two thirds the cost of the same amount in the form of beefsteak selling at twenty-five cents per pound. The cost of proteids derived from peanuts, however, may be considerably less,— about one fifth as much, or about six cents per pound. The proteids derived from nuts are much more expensive than the same nutriment derived from cereals, as the cost of production of the latter is so much less. As compared with meat, however, the cost is very small. The cost of proteids derived from chicken and other fowls, and especially from birds, is still greater than when beef or mutton is the source of supply, because of the higher price and the lower nutritive value. The cost of these foods is less than that of beefsteak, but the proportion of water is so much greater that the actual cost of the nutrient material which they furnish is practically the same. The proteids furnished by milk cost about one half as much as animal proteids obtained from beefsteak.

These facts must arrest the attention of all intelligent people who are interested in the study of food economics. There is no subject worthy of more careful study and investigation than this. It is no longer a question whether animal life can be well supported by vegetable proteids. There are in this country not less than ten to fifteen thousand persons who have for years wholly discarded the use of flesh foods. In Russia there is a community whose members have for generations abstained from the use of flesh foods. This interesting people have recently had an agent in this country looking for a location, as they are planning to emigrate to the land of the free.

Recently, a Dutch physician, Rutger, and his wife, subsisted for ten weeks exclusively on vegetable food. The conclusion he drew was that human life and energy may be perfectly well sustained by the products of the vegetable kingdom. Peas, beans, and lentils were chiefly relied upon as the source of proteids. Nuts might have been added with advantage.

APPENDICITIS DUE TO MEAT EATING.

A RECENT telegram from Paris announces the fact that the celebrated surgeon, Dr. Lucas Championiere, has ascertained that one of the principal causes of appendicitis is the free use of flesh foods. Dr. Championiere was appointed by the Parisian Academy of Medicine to investigate the cause of appendicitis, and embodies the above statement in his report to the Academy. This report will doubtless be no small shock to a considerable number of persons who are laboring under the erroneous belief that flesh of animals affords the most digestible, strengthening, and wholesome form of nutriment.

The old idea that the appendicitis is due

to foreign bodies lodging in the little pocket attached to the lower end of the cecum, has long been known to be quite untenable. The appendix keeps its door tightly closed until it becomes inflamed and enfeebled by disease, then its valve-like orifice becomes relaxed, and foreign substances drop in. The cause of this inflammation and relaxation is, in the great majority of cases, unquestionably catarrh or chronic inflammation of the mucous membrane. The disease does not begin in the appendix, but in the intestine, finding its way into the appendix later.

Catarrhal disease of the stomach and intestines is due to germs which become colonized upon the mucous membrane, and multiply prodigiously when stimulated by favorable nutriment, finding their way into the millions of little glandular pockets scattered over the intestine, thus establishing a chronic malady, which assumes the various forms of chronic gastritis, enteritis, infectious jaundice, colitis, and appendicitis. Laboratory experiments have shown that the most favorable material for the cultivation of these germs is meat and meat juices. They will not grow in fruit juice, and they develop very feebly and slowly in solutions of cereals; but their development is extremely rapid, and they acquire the highest degree of virulence or deadly activity in beef tea, beef extracts, bouillon, and animal broths of all sorts. If flesh food is eaten freely, there is always present in the alimentary canal, not only extracts of beef, on which these catarrh-producing germs thrive luxuriously, but fragments of half-digested flesh undergoing putrefactive changes. The poisons produced by the germs to which these processes of decay are due, damage the mucous membrane, lowering the vitality of the patient, and thus preparing the way for the action of the pathogenic or diseased condition of microbes, which gives rise to intestinal catarrh and the other forms of inflammation.

It is exceedingly fortunate that so distinguished an authority as Dr. Louis Champoniere, whose fame as a surgeon is world wide, has personally investigated this matter, and learning the truth, has announced it to the world over the authority of his great name, as it may be hoped, that coming from such a source, this startling statement may receive the attention which it deserves, and may prove another important link in the long chain of irrefutable scientific facts and arguments which clearly point to the immense damage to the human race resulting from the habitual use of flesh foods. Thousands of intelligent men and women in this country are already convinced of the evils of habitual flesh-eating, and are rapidly curtailing their butcher's bills, and this new evidence against animal flesh as a food will unquestionably lead many to banish flesh of all kinds from their tables at once and forever.

The Influence of Acids upon the Secretion of Gastric Juice.

Hayem and Winter, several years ago, showed, by numerous experiments upon dogs and men, that gastric digestion was most active during the first two hours, the amount of acid diminishing after that time, and disappearing at the end of four or five hours. Sokolow (*Gazette clinique de Botkin*) has recently repeated these experiments upon a dog whose stomach had been prepared after the method of Pawlow, which provides two compartments, one to contain food, and the other in which food does not enter, and which is made the subject of observation. The author's experiments confirm the observation of Hayem and Winter as regards the secretion and absorption of hydrochloric acid, employing an experimental meal consisting of a hundred grams of raw meat and one hundred grams of water. Sokolow found that the addition of hydrochloric acid hindered the secretion of gastric juice. Lactic and butyric acids encouraged the secretions.

"Who does not in some sort live to others, does not live much to himself."

Tuberculosis in Cattle and Swine in Germany.

Consular Report No. 1250, by Hon. Frank H. Mason, U. S. Consul-General to Berlin, gives some interesting statistics respecting the increase of tuberculosis among cattle and swine in Germany. From this report it appears that of three and a half million cattle slaughtered in the years 1898, 1899, and 1900, nearly 540,000 (more than one seventh), were found to be infected with tuberculosis. The number of infected cattle increased from 14.4 per cent in 1898, to 15 per cent in 1900. Of eleven million hogs slaughtered in the same time, 250,000 were found to be infected. There was also found to be an increase in the proportion of infected hogs. The situation is not quite so bad in this country, but this dreadful infection is steadily spreading among the domestic animals.

The Deadly Oyster Germ.

Zardo has shown that the oyster nearly always contains a bacillus, which he has named the bacillus of Mytilus. This germ apparently produces no harmful effect if the stomach and intestines are in a normal state, but if the gastric juice is not normal, in others words, if it is lacking in germicide properties, and especially if the intestine is not in a perfect condition, gastro-enteritis and general infection occur, which may result in death. In experiments upon guinea pigs, it was shown that the injection of this germ beneath the skin or into the peritoneal cavity gave rise to general infection, the germ being found everywhere in the body, even in the blood. The poison produced by this germ, when introduced into the body of a guinea pig in any way whatever, gave rise to interstitial hemorrhage, fatty degeneration of the liver, and necrosis.

From these facts, it is plainly evident that the oyster is a very unsafe article of diet, especially when eaten raw or imperfectly cooked. Even thoroughly cooked oysters may give rise to serious symptoms if there happens to be present a considerable number of poisonous substances previously formed by the germ, for while cooking destroys the germ, it does not destroy the poison produced by it.

The Influence of Cold Water and Cold Air on Heat Elimination.

J. Lefèvre has recently shown by experiments that the rate of heat elimination is increased when the naked body is exposed to the action of a current of cold air. The rate is not only increased, but is accelerated; that is, it increases more than proportionately to the reduction of temperature. The same observer some time ago made the same determination in reference to the influence of the application of cold water.

Poison in the Saliva of Smokers.

Schneider recently published in the *American Journal of Physiology* a report of a series of experiments in which he made a careful investigation of the amount of sulpho-cyanide of potassium in the saliva. He found this poison present in 224 out of 225 persons examined. A remarkable fact which he noted, and to which he called especial attention, was that while the sulpho-cyanide is ordinarily present in the saliva in only .003 per cent, the quantity in the saliva of smokers was more than four times as great, .013 per cent. This fact indicates that the system of smokers is saturated with poisons, at least one of which is eliminated through the saliva.

Relation Between Physical and Mental Work.

Beyer shows (*Journal of the Boston Society of the Medical Sciences*), as the result of an examination of a large number of children, that a definite relation exists between the capacity for mental work and the height, weight, and circumference of the thorax; that is, superiority in the three points mentioned is usually accompanied by superior capability for mental work. It is thus clearly established that physical training is valuable as a means of increasing the mental capacity.

ANSWERS TO CORRESPONDENTS.

Food Elements in Nut Foods.— A. B. B., Washington: "1. What is the exact amount of the several classes of food elements in one pound can of Sanitarium protose and beans? 2. Also of nuttena and protose? 3. Is not nuttena equal in strength and nutritive value to nuttose? 4. How long should rice be cooked? 5. Are the Sanitarium beans ready for use as put up?"

Ans.— 1. The composition of protose is: Albuminous elements, 21.30; free fat, 10.23; starch, 2.85. The composition of beans is: Albuminous elements, 26.9; starch, 48.8; free fat, 3.0. No analysis has been made of beans and protose mixed together. We may calculate, however, that the protose found in baked beans is of the usual composition, while the beans contain three parts of water to one of dry beans; hence the nutritive value of the beans would be just one fourth that of dry beans.

2. No analysis has been made of this composition.

3. No. It contains a considerable amount of starch and less concentrated food.

4. It should be baked in the oven in the dry state until slightly browned, and then cooked for an hour or two, in a steamer, after soaking until well softened. The length of time required in the cooking depends to some degree on the quantity.

5. Yes.

Lisle Thread — Deimel Linen-Mesh Underwear — Length of Time Food Stays in Stomach.— A. T. S., Pennsylvania: "1. Is lisle thread cotton or linen? If it is linen, why is it not good underwear? 2. Why is not Balbrigan and such cotton underwear as good as canton flannel? 3. Do you approve of Deimel linen-mesh underwear? 4. Is there any other linen mesh just as good and lower in price? 5. Does the food most easily digested leave the stomach as soon as it is digested, or does all food remain in the stomach until all is digested? 6. Does the stomach rid itself of water by absorption or by muscular action?

Ans.— 1. Cotton. It is good underwear.

2. These fabrics are good.

3. Yes.

4. Very likely there is, though we do not happen to know the name of the goods or the manufacturer.

5. The fluid portion of the food, that is, that part which is thoroughly digested, probably escapes from the stomach in larger or smaller quantities during the whole digestive process, but the larger portion leaves the stomach at the end of three or four hours after digestion begins.

6. By muscular action. The stomach is not an absorbing organ. Very little fluid is absorbed by the stomach itself.

Catarrh of the Stomach — Liver — Plants in Sleeping Rooms.— T. A. B., Iowa: "1. What are the symptoms of catarrh of the stomach? 2. Is there any test to determine if one has catarrh of the stomach? 3. Will an unhealthy liver cause cough and expectoration? If so, what would be the color of the mucus? 4. In bronchial trouble, does one cough and expectorate, especially after exercising or reading aloud, and also on waking in the morning? 5. Would a bronchial cough keep one awake nights? 6. While flowers and plants are healthful, does not the moisture in the flower pots make them undesirable in a sleeping room?

Ans.— 1. Pain and tenderness in the region of the stomach. Frequent attacks of nausea and vomiting. Inability to digest flesh foods.

2. In taking a test meal, large quantities of mucus are removed, and hypopepsia is generally found. When violent vomiting occurs, there is a large amount of mucus.

3. Coughing and expectoration are occasioned by the same cause which disturbs the liver. The color is not significant.

4. Yes.

5. Yes, frequently.

6. No, or at least unless the number of plants is very large.

Substitute for Meat — Nut Foods — Malt Extract — Fruit.— A subscriber asks: "1. What is the best substitute for meat that can be prepared at home both with and without a nut-butter mill? 2. Can protose or something similar be prepared at home? 3. What nuts are best? 4. How prepared? 5. Do almonds require blanching? 6. What nuts are good without blanching? 7. Is fine nut meal or nut butter better? 8. Are preparations of malt extract with nuts and grains good? 9. How best prepared? 10. In what other way may malt extract be used? 11. What fruits are best?"

Ans.— 1. Nuts themselves are the best substitutes for meat. Almond butter is perhaps the next best substitute. The next best is perhaps a mixture of peanuts and beans, boiled eight to ten hours. The peanuts alone may be used, being first parboiled, and then cooked a long time.

2. Not with any appliances found in the ordinary home. Protose is so highly nutritive that any one who can afford to eat meat can afford to eat protose. Those who use it regularly may buy it by the case, and thus diminish the price; just as meat can be bought cheaper when purchased in considerable quantity, or canned meats when bought by the dozen or the case.

3. Almonds, filberts, pecans, fresh walnuts, chestnuts. If well chewed, they are all digestible when eaten raw. It is best to remove the skins, and crush them by passing through a mill of some sort. A mill that divides into small bits without crushing into a paste is, however, worse than none, as the

small particles cannot be easily chewed, and are likely to be swallowed without thorough mastication. The nuts must be reduced to a fine paste to be easily digested.

5. Yes.

6. Pecans are perhaps the best, as they have very thin skins.

7. Nut meal is wholesome if cooked into a purée; otherwise nut butter is better.

8. Yes, if the malt extract is pure. Doubtless much of the cheaper commercial malt is adulterated with glucose. We have never found any that did not contain germs, and when diluted, ferment very quickly. Malt honey consists of thoroughly sterile malt sugar and is of an agreeable flavor, while the so-called malt extracts have a flavor which to most people is disagreeable.

9. The malt honey may be mixed with nut dishes and with grains in any proportion desired.

10. Malt honey may be used in any way in which sugar is used, and should be substituted for ordinary sugars. Malt extract cannot be used because of its unpleasant flavor.

11. All stewed fruits are wholesome. Raw ripe fruits, such as peaches, strawberries, etc., are best.

Paralysis Agitans.— J. P., Pennsylvania, sixty-eight years old, has paralysis agitans, cannot sleep, and can walk but little. Please advise treatment.

Ans.— Take a neutral bath at night. This is a full bath for twenty or thirty minutes at a temperature of 92° to 96°. This bath may be taken twice a day. The bath may be extended for an hour or two without injury, and in many cases with decided benefit. Cold mitten friction, cold towel rub, and massage are beneficial. The diet should be strictly aseptic in character; that is, cheese, meats of all kinds, and unwholesome foods should be strictly discarded.

Perspiring Feet — Pain in Limbs — Diet — Complexion.— L. K. D., Pennsylvania: "1. What causes excessive perspiration of the feet? 2. An aching from ankle to kidney, the limb being at other times stiff and sore? 3. Advise treatment. 4. Please prescribe diet for one whose bowels act irregularly. 5. Why should one in poor health have red cheeks?

Ans.— 1. This condition, known as hyperhidrosis, is generally due to sympathetic nervous disturbances. It is commonly the result of indigestion, sedentary life, lack of sleep, weak abdominal muscles allowing prolapse of the abdominal viscera. All of these causes may be acting in combination. Some relief may be obtained by alternately bathing the feet in hot and cold water for a minute each, alternating eight or ten times, night and morning. Afterward dry the feet well. Wear linen or cotton stockings next to the feet. Do not clothe the feet too warmly. In some cases linen stockings or thin cotton stockings and felt shoes are found serviceable.

2. Possibly prolapsed kidney or prolapsed bowels.

3. See answer to L. W. C., Michigan.

4. Granose biscuit, grānut, malted nuts, prunes, steamed figs, nut preparations of all sorts.

5. Ill health does not always involve anemia or poverty of the blood. Flushing of the face is often due to irregular distribution of the blood through disturbance of the sympathetic nervous system.

Grānut and Nuttola.— A. T. S., Pennsylvania, asks (1) the difference, if any, between grānut and nuttola; (2) which is the better food?

Ans.— 1. Grānut is a predigested cereal. It has a solubility of fifty per cent or more. Nuttola is equally soluble, but contains a considerable portion of nuts.

2. Nuttola is a richer food and more fattening. The two foods are equally good, but adapted to different purposes.

Mealtime — Hercules Club — White Bread. — J. M. Holt, W. Va.: "1. Are 5:30 and 12 o'clock proper hours for meals when one begins work at 7 A. M. and quits at 6 P. M. with but one hour — 12 to 1 — for rest? 2. Can one live hygienically by this routine? 3. Do you recommend the Hercules Club? 4. Is white-flour bread wholesome for one in good health?

Ans.— 1. One may eat at these hours if his business requires it, but 8 A. M. and 3 P. M. are better hours.

2. Yes, if he retires early at night, and secures plenty of sleep. A little fruit may be eaten at night if one feels the need of it, but do not eat simply for the sake of pleasure.

3. If it is a health club, yes. We know nothing about it.

4. Fine-flour bread is food,— wholesome food; but graham bread is better. Granose is best.

Diet During Menses.— L. E. McE., Iowa, asks (1) if there should be any change in diet or mode of life during menses; (2) if the use of acid fruits at this time has any effect.

Ans.— 1. Eat lightly, and avoid nitrogenous foods.

2. Unless there is chronic gastric catarrh or some disturbance following the use of fruits. Make the combination as simple as possible.

A Farmer's Diet.— E. E. B., Michigan, asks for a perfect diet for the farmer.

Ans.— Fruits, grains, and nuts, taken to the amount of one and a half to one and three-fourths pounds daily. The proportion should be about one part of fat, two parts of proteids, and ten parts of starch.

Deafness. — Wm. R., Kansas, asks (1) will constipation aggravate deafness? (2) What will relieve?

Ans.— 1. No, except on general principles.

2. Consult an aurist.

To Reduce Fat.— F. H. H., West Virginia: "1. What food manufactured by the Sanitarium Food Company will keep one in a minimum of flesh? 2. Which of the Sanitas foods?

Ans.— 1. The gluten preparations.

2. Malted Gluten.

Bromidrosis.— F. E. F., Illinois: "Is general bromidrosis, not associated with excessive perspiration, curable?

Ans.— 1. Yes, probably by means of a strict fruit-and-grain diet, with fruit only at intervals; daily warm bath followed by cold bath; out-of-door life; electric light baths and sun baths.

Pain in Back — Painful Heart Beats — Dizziness — Cramping of Limbs.— L. W. C., Michigan: "1. What causes an almost constant aching just below the small of the back on the left side? 2. Extreme weakness after stool? 3. Every heart beat at times seems to be a throb of pain. 4. Dizziness, and staggering always to the left? 5. Could stomach trouble be the cause? 6. Why should feet and limbs cramp at night? 7. Why should the feet be sore and painful when one is doing work, and not after a long walk?"

Ans.— 1. The cause is probably enteroptosis, or a prolapsed condition of the bowels. Possibly it is a movable kidney.

2. Same cause.

3. The cause may be the same, or it may be due to indigestion.

4. Sympathetic nervous disturbance, very likely connected with the causes above mentioned.

5. Yes.

6. Yes. May also be due to sympathetic disturbances arising from displaced abdominal viscera.

7. Probably the cause is that in working the viscera are forced downward by straining, as in lifting, thus increasing the sympathetic disturbance which influences the nerves of the limb. The remedy for this condition is to be found in supporting the abdomen by a proper abdominal supporter, and strengthening the muscles by electricity and special exercises.

Boils — Itching in the Ear.— F. A. W., Minnesota: "1. What plaster will bring boils to a head? 2. Do you recommend plantain or burdock leaves to be worn at night for this purpose? 3. What will relieve constant itching in the ear?"

Ans.— 1. Nothing better than a fomentation followed by a cotton poultice, consisting of moist cotton kept warm by a hot bag.

2. Anything to keep the parts warm and moist is beneficial.

3. Wash the parts carefully with castile soap. Afterward apply a little zinc ointment. If there is a discharge, dry boracic acid in fine powder should be applied.

Hair.— A subscriber in North Carolina asks (1) the best treatment for the scalp and hair; (2) the best tonic for both; (3) if anything but electricity will remove superfluous hair.

Ans.— 1. The scalp should be thoroughly treated with an antiseptic lotion, together with bathing in cold water and friction twice daily. The following lotion will be found useful: Alcohol, three ounces; resorcin, one ounce; castor oil, ten drops.

2. Simple dietary and general health culture, shampooing the scalp with cold water.

3. There are various depilatory processes which will cut the hair off close to the skin, but electricity is the best method of destroying the roots.

Grānut and Grape Nuts.— F. P. S., Washington, "wishes to know (1) if grānut and grape nuts are identical; (2) if grape nuts is what it is recommended to be."

Ans.— 1. No.

2. The application of practical common sense to this question will easily suggest the correct answer.

Strawberries — Drinking Water — "How to Live on a Dime a Day."— A Montana subscriber asks: "1. Can one who suffers from indigestion eat too many strawberries? 2. GOOD HEALTH at one time advises the use of cold drinking water, and again warm. Which is better? 3. Where may "How to Live on a Dime a Day" be obtained?"

Ans.— 1. Yes. One can eat too much of anything, especially one who has indigestion.

2. Persons who have hyperpepsia, that is, those who have excessive formation of hydrochloric acid, indicated by acidity occurring very soon after eating or constantly present, may take with advantage half a glass of hot water half an hour before eating. Persons who have gastric catarrh may drink two or three glasses of hot water an hour and a half before eating, with advantage. Persons who have hypopepsia, often indicated by pale, flabby tongue, flatulence, coated tongue, biliousness, frequent bilious

attacks, constipation, should drink cold water, one third of a glass three quarters of an hour before eating. Water at ordinary temperature may be taken three or four hours after eating. It is not wise to drink liquids of any sort in other than small quantity with a meal or immediately afterward.

3. Address Good Health Pub. Co., Battle Creek, Mich.

Underwear — Corns.— W. G. L., Illinois: "1. What is the best material for underwear for one who perspires freely and is exposed to chilly drafts? 2. How may corns be removed?"

Ans. —Porous linen next to the skin, with a suit of light flannel over the linen.

2. By a chiropodist.

Catarrh of the Stomach, and Eczema.— R. B. C., Ohio: "1. What climate is best in case of catarrh of the stomach, and eczema? 2. Is that of South Dakota favorable? 3. What home treatment would you recommend for these troubles?"

Ans. — 1. Any climate in which there is an abundance of sunshine and other conditions favorable to an out-of-door life.

2. The climate of South Dakota is exceptionally excellent for building up vigorous general health, which is the thing most needful.

3. Simple dietary of dextrinized grains, such as zwieback, granose, granola, malted nuts, grānut, malt honey, sweet and subacid fruits, fresh and stewed, avoiding the use of cane sugar; very simple preparations of fruits, grains, and nuts. Avoid mustard, pepper, and all condiments. Avoid the use of mushes, coarse grains, very acid fruits, and especially meats of all kinds. Cheese and butter should be avoided, and in some cases, milk and cream must be discarded also. Rich gravies, tea and coffee, and all foods difficult of digestion must be discarded.

Quaker Bath Cabinet.— G. G. B., Missouri, asks if we recommend the Quaker Bath Cabinet.

Ans.— It is a good vapor bath, but not a cure-all.

Grape Nuts — Ventilation — Condensed Milk.— E. L. M., Pennsylvania: "1. Is grape nuts to be recommended? 2. Is it best to ventilate by letting a window down from the top or raising it at the bottom? 3. What is your opinion of condensed milk for family use?"

Ans.— 1. We have never made use of this commercial food, and have found no occasion to recommend it.

2. Do both. Ventilation of a room requires two openings: one for the fresh air to come in and the other for the foul air to go out.

3. Condensed milk which contains a large amount of sugar cannot be recommended. The so-called evaporated milk or cream which is preserved without sugar is more wholesome than ordinary milk because it is thoroughly sterilized.

Sick Headache.— F. C. B., Kansas, who has observed healthful rules in general, suffers from an attack of sick headache every week. 1. What is the cause? 2. Why should a diet of zwieback, granola, with nuts pounded fine, and subacid fruits cause derangement of the stomach? 3. Are subacid fruits injurious when only one kind is used at a meal? 4. Are raw nuts unwholesome when pounded fine? 5. What fruits are best? 6. What can be done when there is mucus in the stomach, and palpitation present? 7. What can be done for cold feet? 8. Please outline general health rules to be observed during pregnancy."

Ans.— 1. Dilated stomach.

2. It does not. The food is all right. It may be taken in excess, however, or at too frequent intervals. The stomach which will not agree with such food taken properly twice a day must be in a bad state. The cause is probably the stomach and not the food.

3. In case of gastric ulceration, and in some cases of gastric catarrh, acid fruits irritate the stomach. In time, however, this difficulty can be overcome.

4. The digestibility of raw nuts is increased by reducing to a paste. It should be understood, however, that peanuts are not nuts, and must be cooked. Chestnuts also require cooking.

5. All ripe fruits are wholesome. These most easily digested are very ripe, mealy apples, ripe peaches, strawberries, and grapes, excluding the skins and seeds of the latter. Other fruits are easily digestible when cooked, and most fruits are more readily digested if cooked. Experiments seem to show, however, that most fruits, if taken raw, are more valuable as a means of correcting the evil state of the stomach or bowels.

6. In such a case lavage or washing of the stomach is necessary, especially when mucus is present in considerable quantity.

7. Clothing warmly, wearing felt shoes if necessary. Morning cold foot bathing is beneficial. The same result may be obtained by dipping one foot in cold water for half a minute and rubbing it, putting the other in cold water meantime. Dry well afterward.

See "Ladies' Guide," page 382 and onward. Address Good Health Pub. Co., Battle Creek, Mich.

LITERARY NOTICES.

The April **Forum** opens with an article in which Sydney Brooks pertinently applies to our own problems in the Philippines the lessons to be drawn from "The Example of the Malay States" under British rule. Among other papers on questions affecting foreign affairs are "The Anglo-Japanese Alliance," by A. Maurice Low, and "Prince Henry's Visit," by Prof. Paul S. Reinsch. There figure also in this month's contents, discussions of various subjects of domestic politics now attracting the attention of Congress; such as, "The Amendment of the Interstate Commerce Act, and Railroad Pooling," by W. A. Robertson; "Promotion in the Army," by Major John H. Parker; "Shall the United States Lease Its Grazing Lands?" by John P. Irish; and "Proposed Amendments to the Constitution," by Henry Litchfield West. In educational matters, Yale is represented by Professor Ladd's paper on "The Disintegration and Reconstruction of the Curriculum," and Harvard by Professor Hanus's criticism of "Our Chaotic Education," while Mrs. M. K. Genthe, a Heidelberg Ph. D., gives an account of the present position of "Women at German Universities."

Is it an act of defiance to the foreigner and to Christianity that Prince Ching has authorized the dismissal of President W. A. P. Martin and all professors of the Imperial University of Peking? Dr. Martin has been in China over fifty years, and has been on intimate relations with the government and life of the Empire. That he is one of the intellectual giants of our time is agreed by statesmen, educationists, scholars, and literary critics. His prodigious powers and original learning are nowhere better attested than in his two magnificent volumes "A Cycle of Cathay," and "The Lore of Cathay," published by Revell. Dr. Martin will shortly return to New York.

The Arena for April has its quota of strong educational articles. Señor A. R. Jurado speaks thus of education in the Philippines: —

"If the United States desires to benefit the Filipinos, let it establish in the archipelago such schools as the Boston Institute of Technology, the Cornell University School of Mines, and the Brooklyn Polytechnic Institute. Even more important than these, as being of use to the greater number, are industrial schools for teaching such subjects as carpentry, plumbing, masonry, and painting."

Not one person in ten thousand of those who will read the story of Hellen Keller's life, as published in the *Ladies' Home Journal*, will have the least conception of the amount of hard work required to write the story. First of all Miss Keller puts down her ideas "in Braille," as the blind express it; that is to say, in the system of "points" raised on paper by means of a stylus and slate devised to aid the blind; these "points" being read afterward by passing the sensitive fingers over them. When all of this Braille work has been completed, Miss Keller goes to her typewriter, and uses these notes as a guide to the rewriting of the story.

As soon as a page of matter is typewritten it is, so to speak, lost to Miss Keller, who has to depend upon her faithful teacher, Miss Sullivan, to repeat it to her by spelling out each sentence by means of the hands. It is a tedious task, especially as some of the pages have to be read again and again, with changes here and there, before Miss Keller is satisfied. Then, when the proofs are sent to her, all this slow process of spelling word after word has to be gone through once more, so that each word that Helen Keller writes goes through her fingers at least five times. It will be satisfaction to everybody to know that the publishers of *The Journal* have recognized in a substantial manner the extraordinary ability and patience which Miss Keller has shown in her work.

The Gloucester fisherman, as James B. Connolly pictures him in the April **Scribner's,** is the viking of the present day. He owns fishing schooners that are the equal of our cup defenders, and are designed by the best designers. He takes risks that no yachtsman would take in any gale, and moreover he is often a man of wealth, education, and great influence in his community. Mr. Connolly draws him at first hand, being himself the son of a New England skipper.

"Should a mother with a 'man-child' to rear, not only for time but for eternity, be a chronic fault-finder, complainer, and uncheerful companion to her own son?" writes Miriam Zieber in **Good Housekeeping.** "Does it ever occur to such a woman that perhaps as her boy nears his mother's house he feels a little pang of dread because of the gloomy spirit he knows he will find there? Maybe his heart longs for a whole-souled cheeriness and brightness, such as some other boy's mother he knows of possesses; maybe this same heart aches for a real home life, where his own nature could the more readily expand and bloom and flower. Oh, the dark homes throughout the land, just for want of a little self-control and thoughtfulness on the part of the mothers inhabiting them!"

PUBLISHERS' DEPARTMENT.

GOOD HEALTH

A JOURNAL OF HYGIENE

J. H. KELLOGG, M. D., Editor

Subscription Price, $1.00 a year
Single Copies, 10 cents

Published Monthly by

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303 West Main Street

Battle Creek - - Michigan

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"Manifestly what we need is a sweet more nearly conforming to the nature of digested starch (natural sugar), which possesses all the sweetness of cane sugar, and is as readily absorbed as the levulose of ripe fruits.

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MY MOTHER'S LIFE.

SUBSCRIBERS to GOOD HEALTH will be glad to know that the publishers have on hand four hundred copies of that instructive and interesting volume, "My Mother's Life." It can be had at the old-time price. Those desiring copies should send in at once, as orders for the book are coming in all the time. First come, first served. One could not have a better companion on the holiday trip than this book. Interesting to the old; fascinating to the young. "My Mother's Life" and GOOD HEALTH for one year for $1,65. Address Good Health Pub. Co., Battle Creek, Mich.

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" " " Cosmopolitan	2 00	1 50
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" " " Century Magazine	5 00	4 35
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" " " Delineator	2 00	1 50
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" " " Independent	3 00	2 75
" " " Journal of Applied Microscopy	2 00	1 50
" " " Modern Culture	2 00	1 50
" " " Munsey's	2 00	1 50
" " " Music (Chicago)	4 00	3 20
" " " New Voice	2 00	1 60
" " " Pearson's	2 00	1 50
" " " Scientific American	4 00	3 50
" " " Scribner's	4 00	3 50
" " " Union Signal	2 00	1 50
" " " Woman's Home Companion	2 00	1 50
" " " World's Work	4 00	3 50
" " " Youth's Companion (new)	2 75	2 15
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"The Niagara Falls Route."

Corrected Nov. 3, 1901.

EAST	8 *Night Express	12 †Detr'it Accom.	6 †Mail & Express	10 *N.Y. & Bos. Sp.	14 *East'n Express	4 *N.Y. St.Sp.	36 *Atl'tic Express
Chicago	pm 9.35		am 6.45	am10.30	pm 3.00	pm5.30	pm11.30
Michigan City	11.25		8.43	pm12.08	4.39	7.00	am 1.20
Niles	am12.40		10.15	1.00	5.35	7.55	2.30
Kalamazoo	2.10	am 7.30	pm12.10	2.08	6.45	9.03	4.10
Battle Creek	3.00	8.10	1.00	2.42	7.17	9.37	5.00
Marshall	3.33	8.38	1.30	3.09	7.43		5.30
Albion	3.55	9.0(	1.50	3.30	8.03		5.52
Jackson	4.50	10.0(	2.35	4.05	8.40	10.50	6.40
Ann Arbor	5.55	11.1(	3.47	4.58	9.30	11.40	7.45
Detroit	7.15	pm12.2(	5.30	6.00	10.00	am1240	9.15
Falls View							pm 5.09
Suspension Bridge							5.32
Niagara Falls							5.40
Buffalo				am12.20	am 7.00	7.50	6.30
Rochester				3.13	9.00	10.00	8.40
Syracuse				5.15	10.55	pm1215	10.45
Albany				9.05	pm 2.30	4.50	am 2.50
New York				pm 1.30	6.00	8.45	7.00
Springfield				12.16	6.10	8.32	6.05
Boston				3.00	9.00	11.30	8.46

WEST	7 *Night Express	17-21 *NY Bo. & Ch.Sp	5 †Mail & Express	3 *Fast Mail.	23 *W'st'n Express	13 †Kal. Ac'm.	37 *Pacific Express
Boston		pm 2.0(			pm 4.15		pm 6.00
New York		4.00		am 8.45	6.00		am 3.15
Syracuse		11.30			am 2.00		10.20
Rochester		am 1.20			4.05		pm12.10
Buffalo		3.20		pm 6.25	5.20		3.50
Niagara Falls					6.02		4.32
Suspension Bridge							
Falls View					6.31	pm	5.07
Detroit	pm 8.20	8.25	am 7.15	am12.30	pm12.40	4.35	11.15
Ann Arbor	9.38	9.23	8.40	1.20	1.38	5.45	am12.20
Jackson	11.20	10.20	11.05	2.20	2.40	7.25	1.35
Battle Creek	am12.40	11.34	pm 12.25	3.30	3.50	9.00	3.00
Kalamazoo	1.40	pm12.10	1.20	4.05	4.28	10.00	3.40
Niles	3.25	1.22	3.25	5.28	6.05		5.08
Michigan City	4.47	2.20	4.45	6.22	7.05		6.06
Chicago	6.55	4.00	6.40	7.55	8.55		7.50

* Daily. † Daily except Sunday.

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EAST	8	4	6	2	10	76
Chicago	AM11.05	PM 3.02	PM 8.15		AM 7.32	
Valparaiso	PM12.49	4.53	10.25		10.05	
South Bend	2.08	6.15	11.52		11 35	AM 7.10
Battle Creek	4.14	8.15	AM 2.00	AM 7.00	PMA2.00 LA.45	PM 5.00
Lansing	5.20	9.28	3.28	8.30	5.25	
Durand	6.00	10.15	4.25	9.30	6.30	
Saginaw	8.10			11.05	8.10	
Bay City	8.45			11.40	8.45	
Detroit	8.00		7.30	11.50	9.20	
Flint		10.40	4.54	10.21	7.28	
Port Huron	9.40	AM12.30	7.00	PM12.20	9.30	
London	AM12.32	3.27	10.10			
Hamilton	2.10	5.24	PM12.25			
Suspension Bridge	3.40	7.05	1.55	8.50	AM 3.40	
Buffalo		8.20	3.05	10.00	6.15	
Philadelphia	PM 3.47	PM 7.20	AM 6.55	AM 8.56	PM 3.47	
New York	4.33	8.23	8.23	9.33	4.33	
Toronto		AM 7.40	PM 1.30	PM 7.40		
Montreal		PM 7.00		AM 7.30		
Boston		AM 8.15		PM 7.05		
Portland		8.00		6.30		

WEST	3	5	7	9	11	75
Portland	AM 8.15	PM 6.00	AM10.30			
Boston	11.30	7.30				
Montreal	PM10.30	AM 9.00				
Toronto	AM 7.40	PM 1.00	PM 5.25		AM 8.30	
New York	PM 6.10	8.00	AM10.00			
Philadelphia	7.00	8.45				
Buffalo	AM 6.15	AM 8.00	PM 9.30			
Suspension Bridge	7.00	PM 2.00	11.15			
Hamilton	8.45					
London	11.05					
Port Huron	M 12.00	9.00	AM 3.20	AM 6.50	PM 3.50	
Flint	PM 1.35	11.07	4.54	8.45	5.54	
Bay City				7.25	4.00	
Saginaw				8.00	4.25	
Detroit	AM11.30	10.00		7.00	4.10	
Durand	PM 2.02	AM12.05	5.22	9.30	6.30	
Lansing	2.45	12.57	6.05	10.50	7.50	
Battle Creek	3.50	2.17	7.10	PM12.15	9.10	AM 7.30
South Bend	5.35	4.08	8.55	2.39		PM 5.20
Valparaiso	6.51	5.25	10.05	3.57		
Chicago	8.45	7.20	11.55	6.18		

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Nos. 10—76—Daily ex't Sunday

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This rate will include rail and stage fare covering seven and one-half days' trip, including all meals and lodging beyond Monida.

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TWO influential magazines have made an offer to the management of Good Health by which we are enabled to make an unusually low price for three of the leading magazines named below. That offer is now and hereby announced, to hold good until June 1st. Send your subscriptions NOW.

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Woman's Home Companion	One Year .	$1.00
Cosmopolitan . .	One Year .	1.00
Good Health . .	One Year .	1.00
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SPECIAL PRICE FOR ALL THREE $1.90

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Good Health . .	One Year .	1.00
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The Cosmopolitan secures and prints many new and original articles. It is finely illustrated. Like the Woman's Home Companion, it finds a place in nearly four hundred thousand homes.

The Good Health is the leading health magazine, and it will be more interesting than ever in 1902. It is attractive and beneficial and should have a distinct place in every home. Well-known contributors. Well illustrated.

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The offer is made by us to give readers of our paper the best that is to be had in magazine combinations this year.

USE THIS COUPON Cut it out, write your name and address on it, and send it with the money to our office. You will receive the periodicals at once, as offered above. Send the different magazines to different addresses if you so desire.

Name.....

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I desire to take advantage of your special magazine offer and inclose herewith the money for the same. Please enter my subscription at once.

GOOD HEALTH PUBLISHING CO., BATTLE CREEK, MICH.

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		REGULAR PRICE	OUR PRICE
Good Health	and World's Work . .	4 00	2 25
" "	World's Work, and Success .	5 00	2 80
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" "	Country Life, and Success . .	5 00	2 80
" "	World's Work, Country Life, and Success	8 00	3 75
" "	World's Work, and Country Life	7 00	3 20
" "	and Criterion	2 00	1 45
" "	Criterion, and Success . .	3 00	2 00
" "	and American Boy . . .	2 00	1 45
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Everybody knows World's Work, Country Life, and Success.

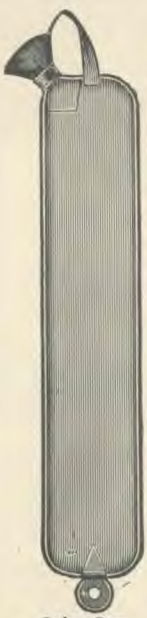
Subscription Dept.,

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

WHY NOT

Send us your orders for

Sanitary Supplies?



Spine Bag.

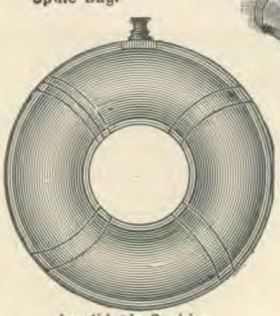
We can furnish them at these prices, POSTPAID.

Combination Water Bottle and Fountain Syringe. ..... "*B*"	$1.75
Combination Water Bottle and Fountain Syringe..... "*A*"	2.00
Water Bottle, cloth insertion, 2 qt..	1.25
" " " " 3 qt..	1.50
Spine Bags, 26-inch.....	1.40
Invalid Air Cushions, 9-inch in diameter	1.70
Invalid Air Cushions, 12-in. in diameter.....	2.00
Invalid Air Cushions, 15-in. in diameter	2.50
Air Pillows, No. 1, sateen cover, 9x13	1.75
" " No. 3, " " 12x18	2.65
Ear Syringe.....	.25
Safety Syringe	.40
Breast Pump.....	.64
Rubber Bed-pans, round.....	$3.35
" " oval.....	4.35
" " oval, with outlet tube.....	4.85
Stomach Tubes.....	1.60

Combination Water Bottle and Fountain Syringe.

Flesh Brush.

Natural Flesh Brush.....	$ .30
Wet Abdominal Girdle.....	1.75



Invalid Air Cushion.

Invalid Chair Cushions.

	Seat.	Back.	
No. 1, sateen cover,	16x16,	16x16	7.50
No. 2, " "	16x16,	16x18	7.75

Hot Water Bag.

GOOD HEALTH PUB. CO.,

BATTLE CREEK, MICH.

In replying to advertisements please mention GOOD HEALTH.

Many subscriptions to GOOD HEALTH expire with the May and June numbers. Please renew promptly.

Consult our great combination offers given in the advertising pages this month. Renewals to GOOD HEALTH accepted in these combinations. Send subscriptions now. GOOD HEALTH for 1902 will be more interesting than ever. You cannot afford to allow your subscription to expire. Subscribe now.

GOOD HEALTH,
Battle Creek, Mich.

The GOOD HEALTH Adjustable Waist

THE LONG WAIST.

A Special, Healthful Garment,

devised at the Battle Creek Sanitarium. Made to fit the natural form. Affords ease, comfort, and health. Supports all garments without harmful pressure.

It is adjustable. Can be made larger or smaller at the waist, according to expansion. Can also be adjusted at shoulder to realize proper length of clothing. Full directions accompany each waist.

THE SHORT WAIST.

The GOOD HEALTH ADJUSTABLE WAIST

allows the weight of clothing to be adjusted about the shoulders, chest, and back, thus distributing it evenly. This is a desirable and comfortable feature.

Two Styles.— The LONG WAIST ends five inches below the waist line. The SHORT WAIST ends at waist line. Please mention style desired.

Material.— The waists are made in two kinds of material: a good grade of sateen, and jean, a lighter weight twilled goods. Each quality is supplied in either white or drab. The black only in sateen.

Measurements.— The bust, waist, and hip measurements (carefully taken) must be sent with order.

Sizes.—The regular sizes are from 30 to 42, bust measure (even sizes only, 30, 32, 34, etc.)

Prices.— The waists will be sent, postpaid, at the following prices:—

White and drab Sateen, size, 30 to 38 bust measure, **$1.75**
Size 40 . . **2.00**
Size 42 . . **2.25**

Black Sateen, size, 30 to 38, . **$2.00**
Size 40 . . **2.25**
Size 42 . . **2.50**

Jean, 30 to 38 bust measure, (not made in large sizes) **$1.50**

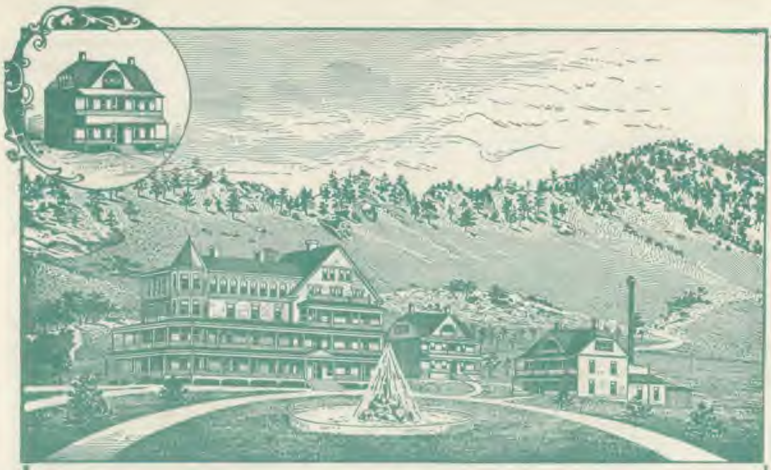
Write for circular with full information.

Agents Wanted.

Dress Department

GOOD HEALTH PUB. CO.,

Battle Creek, Michigan.



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EAST HALL.

WEST HALL.

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