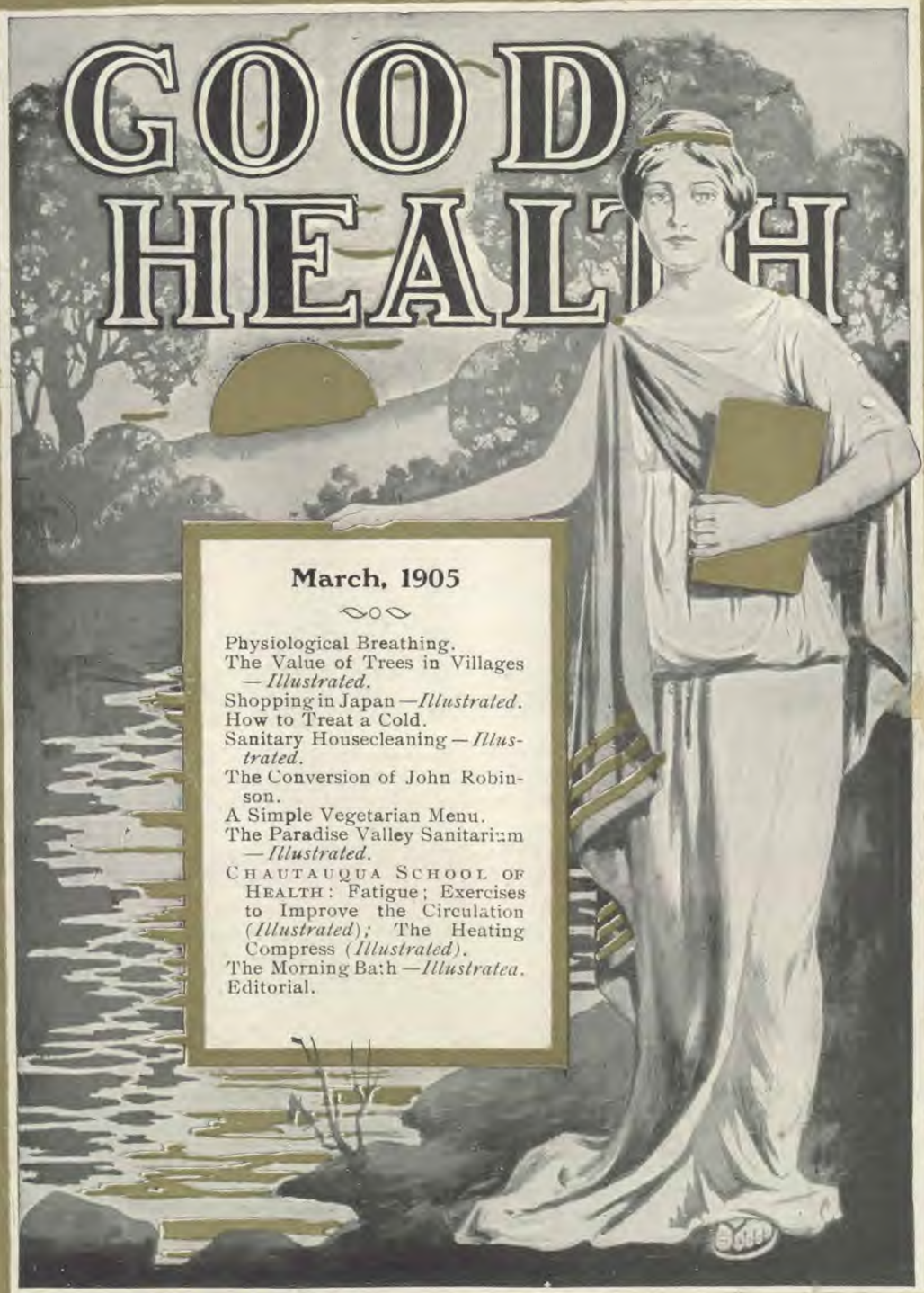
SHOPPING IN JAPAN—Illustrated.

VOL. XL. *Edited by J. H. KELLOGG, M. D.* NO. 3

GOOD HEALTH



March, 1905

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Excellent in Quality

SHORT WAIST

REPLACES the *CORSET*, fulfilling all requirements without its harmful effects. For *Gracefulness*, *Ease* or *Comfort* this garment surpasses anything ever before manufactured. For *Economy* this waist is cheap at any cost when compared with the old style corset, because it does not deform the body, nor destroy health, but benefits and restores instead. It is *washable* and *adjustable*. You can make it larger or smaller by adjusting the shoulder straps and oval elastic in either side. By making the former longer or shorter, the length of the skirt may be regulated.

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115 Washington Avenue North, ... Battle Creek, Michigan

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Is the oldest health journal in the world. It is owned and published by a philanthropic association organized for the purpose of promoting hygienic reform in general and especially dietetic reform. There is no private interest, and the journal is not the organ of any institution or association other than its own.

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Where Should an Invalid Spend the Winter?

THE answer is easily found.

The invalid should spend the winter where he may find greatest profit for his health.

Shall it be a warm or a cold climate?

There are considerations to be thought of.

Warm weather in winter time is an attractive novelty.

Flowers, palms, bananas, and other tropical growths in January are delightfully luxurious and seductive.

But the system needs the stimulus of cold, dry air. There is no other tonic half so valuable.

Heat depresses, enervates, weakens, lowers vital resistance, breeds germs, and invites disease.

The delights of a tropical winter annually allure away from the frost and snow of the north thousands who are quite unconscious that Jack Frost, though a very austere and blustering sort of fellow, is, after all, a good friend, and especially to chronic invalids.

The keen, cool, crisp, oxygen-laden air of December to January is the purest, sweetest, most healthful of the year. There are no germs in it, no dust in it, no poisonous gases of decay from bogs or barnyards in it; only pure, life-imparting oxygen, condensed, vitalizing, stimulating, appetizing. Appetite, as Pawlow, the St. Petersburg savant, has shown, means gastric juice — digestive power.

So cold air purifies the blood, energizes the heart, puts new vim into the muscles, helps the stomach, wakes up the liver, lifts the whole being to a higher plane of life.

The "winter constitution," which all animals put on when cold weather comes, is hardier, tougher, more enduring, more resisting to disease than the feebler "summer constitution" which springtime brings to northern dwellers, and which tropical animals and men have all the year round.

This "winter constitution" is just what the chronic invalid needs.

The consumptive gets it by living out of doors in a tent, sleeping with windows open, and getting close to nature. The "winter constitution" which he cultivates, eats up the germs which are consuming his lungs, and thus cures him. It is the cold air that does the work.

The most successful consumption resort in the world is Davos, a winter resort in the Swiss Alps, near the Engadine, where the snow is six feet deep and the temperature close to zero all winter. Every winter, hundreds of tubercular patients from all parts of the world resort to Davos to take the "cold-air cure."

Cold air cures. There is no doubt about it when it is accompanied by wise and skilful management and careful regulation of diet. Highly nourishing, easily digestible food, massage, electricity, baths and other sanitarium methods are essential for the fullest success.

That which will cure that dreaded disease, consumption, will cure almost every other chronic malady.

The body heals itself. What the sick man needs is a more vigorous body and cleaner blood, for "it is the blood that heals."

There is, perhaps, no place in the United States where an invalid can be so comfortable in the wintry weather of the year — late autumn, winter, and early spring — as at the Battle Creek Sanitarium.

There is no winter inside of the great absolutely fireproof main building of the Battle Creek Sanitarium: an artificial climate (70° F. during the day, and 60° F. at night); perfect ventilation for each room; pure warm air in rich abundance — 9,000 cubic feet per hour for every guest. This is the way that out-of-door purity is maintained. Warm floors; kitchen and dining-room at top; no smells; solid walls, partitions, and floors, — no place for bugs; no harmful drafts, no dust.

There is probably no place in the region of frost and snow where an invalid can find so favorable conditions for wintering as at the Battle Creek Sanitarium. Nowhere else has so successful an effort been made to create an artificial climate, on a scale large enough to meet the needs of several hundred invalids. In the great solid structure summer reigns from October to April more uninterruptedly than from May to September. There are no chilly mornings or evenings; no raw, damp nights; no cold, drizzly days; and on the other hand, no oppressive tropical heats. Seven acres of floor space inclosed by heavy impervious walls through which the cold can not penetrate; thick stone floors which, once warmed by the radiation from heated steam pipes, remain warm the whole winter through, making cold feet from cold floors impossible, — a difference of not more than ten degrees between day and night; air always dry, pure, full of ozone, unmatched by

any natural climate on earth; with palms, flowers, foliage everywhere, to remind one of summer.

Thus perfect protection is offered those who need it, while those who need to be hardened by contact with cold air, are able to secure the benefits of this great invigorating force whenever desired, day or night, and to any desired degree or extent. In the summer season this great healing force is available only in small measure by means of cold baths, ice rubs, and fans; but in the winter season, the keen frosty air is everywhere ready to be put to work as the great uplifting power it is when rightly applied.

Warm air comforts and allures,
But cold air hardens and cures.

A mammoth gymnasium for exercise; two great swimming pools; a grand solarium; ingenious mechanical exercise machines; and a great palm garden in which the patient may easily imagine himself in a tropical clime as he sits cosy and warm under a great palm or a banana tree rising twenty feet above his head, — these are features well calculated to produce an atmosphere of summer in the coldest weather.

One does not realize it is winter until he looks out of doors, except for the buoyancy of his spirits, the elasticity of his step, the keenness of his appetite, and the joy of living, which returning vigor brings.

Under the doctor's prescription, excursions are made into the outer region at the proper hours and with suitable precautions,— sleigh-rides, tobogganing, walks, skating, and skiing for strong folks; "air packs," that is, lying out of doors enveloped in cold-proof wrappings, for feeble folks,— from which everybody comes back with a keen appetite for the nourishing, easily digestible food which the Sanitarium menu supplies in rich abundance. Nowhere in the world can an invalid find such a rich and endless variety of wholesome, toothsome, tempting delicacies, easily digestible, even predigested, and so daintily served, as at the table of the Battle Creek Sanitarium.

The winter season, under right conditions, affords the chronic invalid the best possible chance for recovery. All persons suffering from a chronic malady are in need of one and the same thing; namely, more health,— a higher degree of vitality, of resistance, higher nerve tone, higher digestive tone. Hence every chronic sufferer requires tonic treatment — tonic conditions. The winter season alone provides continuous tonic conditions. The dense air, containing from one-eighth to one-fourth more oxygen than midsummer air, stimulates all the vital processes to a higher degree of activity. Air is a curative force, in operation day and night, and steadily lifts the patient up to a higher level until the ebbing tide of life turns backward, and the renovating forces of the body resume their activities with all the old-time vigor.

An outdoor sun bath finds a complete substitute in the electric bath. Powerful arc lights concentrated upon the body by means of highly polished metal reflectors produce effects the most powerful of which light is capable. In three or four minutes the skin may be as red as if exposed to the sun for half an hour, and in seven or eight minutes a veritable sun burn may be produced when this is desirable. An eminent French doctor in prescribing for some puny infants presented to him by a titled lady, horrified her by the command, "Roast them, Madam. Roast them,— in the sun." An electric-light "roast" may be four times as powerful as a sun bath, thus securing the effects of the actinic rays in a very much shorter time. The actinic ray of the arc light is much more powerful in proportion to the amount of light than that of the sunlight.

During the winter season the phototherapy department of the Battle Creek Sanitarium is thronged from morning till night, and is fairly ablaze with the glorious health-imparting rays sent forth from a number of powerful arc lights especially constructed for the purpose.

Life is never dull at the Battle Creek Sanitarium. The patients are kept busy all day getting well. There is no routine treatment. Each patient has a program providing something to be done every hour, which will give him an uplift. With rare exceptions, improvement is experienced with the very first application made, and the healing impulse gathers energy from day to day. The patient soon sees through the philosophy of the Battle Creek Sanitarium System, and learns how to co-operate with the physicians in their work, not of healing,— for doctors can not heal,— but in pointing out the way, removing obstacles, and co-operating with the mighty healing forces of nature, which, divinely implanted, are divinely guided. The same power which created, heals. Healing is re-creating.

A school of health is in progress during the entire winter. Afternoon classes and evening lectures give every patient an opportunity to obey the injunction of the great philosopher, "Know thyself," and by acquiring this knowledge he can learn, not only how to get well, but how to keep well.

Sanitariums

The following institutions are conducted in harmony with the same methods and principles as the Battle Creek Sanitarium.

COLORADO SANITARIUM, Boulder, Colo.
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LEICESTER SANITARIUM, 80 Regent St., Leicester, Eng.
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Hygienic Company, 1209 G St., N. W. Washington, D. C.

Dining Room, Church and Vine Sts., Nashville, Tenn.

Hygeia Dining Room, 279 Woodward Ave., Detroit, Mich.

Hygeia Dining Rooms, 5759 Drexel Ave., Chicago, Ill.

Hygienic Cafe, 426 State St., Madison, Wis.

Hygienic Cafe, 865 5th St., Milwaukee, Wis.

Pure Food Cafe, 607 Locust St., Des Moines, Iowa.

Pure Food Cafe, 403 E. 11th St., Kansas City, Mo.

Good Health Cafe, 145 S. 13th St., Lincoln, Nebr.

Nebraska Sanitarium Food Co., College View, Nebr.

Pure Food Store, 2129 Farnum St., Omaha, Nebr.

Vegetarian Cafe, 322½ N. Tejon St., Colorado Springs, Colo.

Vegetarian Restaurant, 555 Boylston St., Boston, Mass.

Vegetarian Cafe, 105 6th St., Portland, Oregon.

Vegetarian Cafe, 1543 Glenarm St., Denver, Colo.

The Vegetarian, 755 Market St., San Francisco, Cal.

Vegetarian Dining Rooms, 317 W. 3rd St., Los Angeles, Cal.

Portland Sanitarium Rooms, Mt. Tabor, Ore.

Vegetarian Cafe, 214 Union St., Seattle, Wash.

White Rose Restaurant, W. H. Nelson, 36 W. 18th St., New York City.

Boston Health Food Store, W. F. Childs, Room 316, 100 Boylston St., Boston, Mass.

Vegetarian Cafe, S. 170 Howard St., Spokane, Wash.

The Laurel, 11 W. 18th St., New York City.

Hygeia Cafe, 203 3rd Ave., Peoria, Ill.

Pure Food Cafe, 1807 Franklin Ave., St. Louis, Mo.

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GOOD HEALTH

A Journal of Hygiene

VOL. XL MARCH, 1905 No. 3

PHYSIOLOGICAL BREATHING

BY J. H. KELLOGG, M. D.

IN physiological breathing the entire chest cavity is expanded. The chest is constructed in such a way as to facilitate normal breathing. In the lower part of the trunk we have the pelvis, which supports the form. At the top are the collar bones, shoulder blades, ribs, and breast bone, and the vertebræ behind, to form a support for the upper part of the trunk. In the middle portion of the trunk are the floating ribs. At this point there is great flexibility and opportunity for movement, so it is apparent that the greatest movement should be in the center. Unfortunately, women so adjust their clothing that it is impossible for the center part of the trunk to expand, and whatever expansion there is, must be in the upper or the lower part.

The trunk is divided by a flexible, movable curtain, — the diaphragm, — which moves to and fro. When air is taken into any part of the trunk, the whole cavity must be enlarged. The lower part of the trunk must necessarily expand with the upper part. Normal breathing is the means of rhythmically compressing and relaxing the viscera, and so pumping the blood out of the large veins of the abdomen. At the same time, with each breath the diaphragm comes down and squeezes the viscera as one might squeeze water out of a sponge. This movement of the viscera is necessary for health.

The diaphragm is a pump; it pumps air on one side, and blood on the other. Breathing has an important relation to the circulation; for the movement of the diaphragm pumps the blood out of the liver, sending it into the general circulation.

It is an interesting fact that four women have gall-stones to one man. This is because of the compression of the waist, which interferes with the movement of the diaphragm. The same movement which pumps the blood through the liver, also sends the bile out through the bile ducts and discharges it into the intestines. When the diaphragm can not act, the bile stagnates in the liver. The diaphragm is a bile pump, as well as an air and blood pump.

By emptying the blood vessels of the portal circulation, the way is prepared for the absorption of food, and food is actually pumped out of the stomach into the intestines. So the diaphragm is also a stomach pump. Deep breathing is very beneficial in a variety of ways.

In the process of digestion a kneading movement is required. The kneading movement of the diaphragm upon the stomach and small intestines is of the greatest importance. The dia-

phragm has five functions: it is an air pump, blood pump, bile pump, stomach pump, and kneading machine.

When one knows how much there is to breathing, one begins to see the importance of breathing exercises. To make sure that we breathe right we should prepare the lungs before we begin, as the runner does, who takes a little run before he starts in the race, in order to get the "second wind" by the expansion of the whole chest cavity. We can get our second wind simply by tapping the chest, which causes the lungs to expand and get hungry for air. Place the hands over the stomach and observe whether they go in or out as you draw in a deep breath. Nearly every woman, when asked to take a deep breath, draws in the abdominal wall instead of expanding it. Take pains to push the hands out, and fill the whole body with air. Breathe as the bird does, clear down to the toes. In ordinary breathing one takes in only about a pint of air; but if we empty the lungs completely and then breathe fully, we can draw in about a gallon instead of a pint.

BREATHING EXERCISES

I

Place the hands on the hips, and draw in a full breath, at the same time throwing the head upward and backward. Exhale as the head is brought forward. The hands on the hips hold the shoulders down. Count four while breathing in, and four while breathing out.

II

Clasp the hands over the abdomen, and take a full, deep breath, at the same time pressing upon the abdomen and lifting the chest as high as possible. Count four while breathing in, and the same in breathing out. Do not relax the pressure on the abdomen while breathing out, but continue it all the while.

III

The third movement is full breathing with chest lifting — almost the same as the last. Raise the chest high and hold it there, letting the breath go out, and pressing hard upon the abdomen to prevent the chest from sinking. You can not let the chest down while you clasp the hands tight.

IV

Empty the lungs completely of air, close the throat, and raise the chest as high as possible. This makes a suction that creates a vacuum in the chest. The blood is then being pumped out of the liver. Open the throat for a few seconds and let the air in, then repeat the exercise.

These four exercises are easy to remember, and may be taken in various positions: with the hands on the hips, on the back of the neck, on the top of the head, and stretched up above the head.

"I WILL be strong:
Burdens are muscle-makers; tests wake powers,
And weariness well-won brings happy balm.
'Tis fretful, coward weakness saps our strength and kills.
I will be strong."

THE VALUE OF TREES IN VILLAGES *

BY STEPHEN SMITH, A. M., M. D., LL. D.

TREES in villages serve two chief purposes, viz.: They promote the health of the people residing in the village. They beautify its scenery. They promote the public health in many ways, for example: —

1. They equalize the temperature. The temperature of the wood of a healthy tree is, at all seasons, about 45°. In the winter, when the cold is excessive, the thermometer registering zero or below, the wood of the trees in the village registers 45°, and thus they render the air around them warmer by many degrees. If the trees are in large number and closely planted, as in a grove, every one entering the grove on a very cold day immediately experiences a feeling of warmth, much as he would on entering a house. This warmth is due, not, as many believe, to the shelter which the grove affords from the winds, but rather to the heat which the trees impart to the surrounding air. Again, if the heat on a summer's day is excessive, the thermometer registering 90° or upward, the wood of trees registers only 45°, and thus they render the air around them cooler by many degrees. The cooler atmosphere of the tree or grove in summer is due not altogether to the shade, but also and largely to the lower temperature of the trees themselves. To this cause must be added the cooling effect of the immense quantity of vapor given off from the leaves of the tree in hot days, which is a cooling process.

A BIT OF NATURE

2. Trees absorb poisonous gases from the air and give back to the air oxygen. This physiological act of vegetation is necessary to the maintenance of the life of man on the earth. Vegetation and man are counterparts; man inhales oxygen and exhales carbonic acid, while vegetation absorbs carbonic acid and exhales oxygen. Oxygen is essential to man's life, and carbonic acid is a deadly poison to him; but with vegetation, the reverse is true; viz., carbonic acid is its food, and oxygen is its poi-

* Remarks at a meeting of the Women's Village Improvement Association of Skaneateles, N. Y.

son. Vegetation as we have it on trees is far more effective in purifying the air than in any other form. In the meadow the air does not flow freely through the grass as it does through the tree top. The tree presents to the moving air an immense amount of foliage in a very small and compact space. For instance, the Washington elm, at Cambridge, Mass., a tree of ordinary size, was critically examined by Professor Pierce, of Harvard University, with a view to estimating the amount of foliage which it presented to the air, and he found that it equaled five acres of meadow grass. This fact proves that our village trees are each so many parks, of greater or less size, spread out in the air over our heads. We may thus have a small park at each of our windows, filling our lungs with oxygen, and absorbing greedily the poisonous carbonic acid which we exhale with every breath.

THE SUGAR-MAPLE

3. Trees absorb malarial poisons. It has long been known that when trees intervene, in the form of dense groves, between marshes and the habitations of man, the latter are free from malaria. English army officers are required by their regulations to make their encampments with groves protecting them from the air of marshes. In the same way trees absorb the bad air of cities and villages and give back oxygen. This bad air is made dangerous to health by the emanations from the many sources of putrefaction which always exist around and in the homes of the people.

That trees beautify scenery goes without saying. The tree itself is a thing of beauty. Many evergreens standing alone on the lawn are as perfect in form as art could make them. The sugar-maple standing alone in the meadow is a thing of beauty which, in the gracefulness of its outline, art can only faintly imitate. Umbrella elms, growing on opposite sides of a long and straight village street, make a Gothic arch in the center of the street which surpasses in architectural beauty the aisle of the most famous cathedrals in the world. The oak, poised on a hill top, where for centuries it has defied the tempest and the lightning, is one of the grandest and most inspiring objects on which we can gaze. Trees may also be so combined, in variety and position, as to be pictures of great beauty. The most famous landscape painter of this or any other period can not paint a picture as gorgeous in coloring as the

forest trees present on the mountain sides of the Adirondacks to-day.

But there is an obverse view of trees which deserves consideration. Trees may be injurious to health, and they may destroy the beauty of scenery. They may be injurious to health when they are so placed and cultivated that they render our homes damp. An investigation into the conditions which promote consumption, made by a government commission in the State of Massachusetts, reported that this disease is most prevalent in houses made damp by location on wet grounds or by the dense shade of trees. It is not difficult to find in any village many houses that are so densely shaded that they are continually damp, and in which mold forms readily. Families living in such houses can never be in a state of high health, but are very susceptible to low forms of disease, as erysipelas, diphtheria, rheumatism, typhoid fever, etc. Children reared under such conditions have greatly impaired vitality, and show little resisting power when attacked by acute diseases. Trees may destroy the beauty of scenery when they are improperly placed or are unsightly from injury or age. They may be so placed as to shut out from view beautiful stretches of scenery that can be seen from but one point.

The preceding facts find ample illustration in this village. The health of the people of the town is greatly improved by its abundant growth of vigorous trees; its summers are cooler and its winters are warmer; its air is purer. That the trees add greatly to the beauty of its scenery is the testimony of every visitor. It is true also that there are homes in this village that are made unhealthful by the deep shade of the surrounding trees, and it is equally true that in many places the beauty of the scenery is greatly impaired by the presence of trees.

The first residents of a village usually plant trees very liberally and without

THE WHITE OAK

due regard to their future growth. Subsequently the trees grow without pruning, and in time assume a great variety of forms, according to the thickness of the original planting and the injuries to which they have been subjected. Meantime, houses multiply, but it is rare that a tree is sacrificed, and, as a consequence, in time, the homes of the people become enveloped in the dense shade of the numerous trees. As the street trees are rarely properly pruned, they become unsightly with low-hanging, irregular limbs, dead branches, and straggling outgrowth.

The remedy for defective street trees in a village already amply supplied with trees as regards the number, is intelligent pruning of those worth saving; the removal of those unfit or im-

properly placed, as where they were too thickly planted, and the planting of trees where there are vacant spaces requiring shade. No village is better adapted for improved tree culture than Skaneateles. The street trees are generally the sugar-maple and the elm, two kinds of trees recognized by arboriculturists as the best adapted to this climate, both for health and beauty. The great defect in these trees in this village is the failure properly to prune those to be saved and to remove others that are too thickly placed or that have become unsightly. Much of the beauty of the village is lost by the low-hanging limbs of the trees in many streets. In some places the trees were originally planted twice as thick as they now should be, and the remedy is the removal of the superfluous trees. There are many localities where trees should be planted, and in such planting, care should be exercised in the selection of trees of different varieties from those now growing. There are many kinds of trees that would flourish in the streets of this village besides the maple and the elm. The Superintendent of State Forests, William F. Fox, mentions several varieties adapted to planting in village streets. He says: "The basswood, or American linden, commends itself to the lover of trees by its ample shade, fragrant flowers, and bright green foliage, which in spring contrasts well with its dark-colored branches." Of the horse chestnut he remarks that it is the earliest of our trees. "Before the buds have opened on many of the others, and while the willows are showing a 'misty green,' the horse chestnut unfolds its cunningly packed leaflets to the sun, a welcome sight to those who are waiting and watching for spring. Its large leaves afford a shade more dense than that of any other tree. In parks and on lawns, where its growth is not restricted, this tree assumes a grand, massive appearance that always arrests the eye. In early spring it is gay with large white and pink flowers whose erect panicles, standing on the upturned tips of the branches, are suggestive of a leafy candelabra." The white ash is recommended on account of its resemblance to the elm in the spread of its limbs. The scarlet oak is a beautiful village tree on account of its crimson leaves. The white or silver maple he speaks of as a favorite shade tree on account of its rapid growth, its slender, pendant branches, and the whiteness of the under side of its leaves.

It is apparent that the variety of trees in this village might be greatly and advantageously increased by judicious selection and cultivation. And it is to be noted that the grounds of the village are remarkably well adapted, by lowlands, highlands, and elevations around the shore lines, for such variety. If the existing trees in the village had been selected with a view to that effect, Skaneateles might have appeared in the spring and fall as if a bed of flowers.

It seems to me to be the duty of this Association to have among its objects of special interest, methods of conserving the trees of the village and rendering them subservient in the highest degree to the health of the people and to the beauty of its scenery. Tree culture is an art based on scientific principles, and can no longer be entrusted to unskilled hands. In the selection of tree plants, great familiarity with the varieties of trees and their adaptation to the soil and local conditions is required to secure the highest degree of success. The actual planting of a tree needs skill based on a knowledge of the physiology of the growth of

plants and a large experience. The pruning of trees demands an intimate acquaintance with the natural healing of wounds of trees, and for the want of that knowledge, hundreds of trees in the streets of this village are suffering slow death.

The question of securing expert supervision of the trees of the village is very important, and I would suggest that the Secretary of the Association be directed to correspond with the Professor of Forestry of Cornell University with a view to obtaining suggestions and, perhaps, assistance in securing competent persons for that purpose. The State has made large appropriations to the Department of Forestry at Cornell, and it is possible that the Professor might annually visit the village with his class and do the work for the purpose of training students in the cultivation of village trees. Such classes are now taken to the Adirondack forests for practical work, and such a scheme of study and practice as is here proposed might be included in the plans of instruction.

SHOPPING IN JAPAN

BY PAULINE S. COLVER,

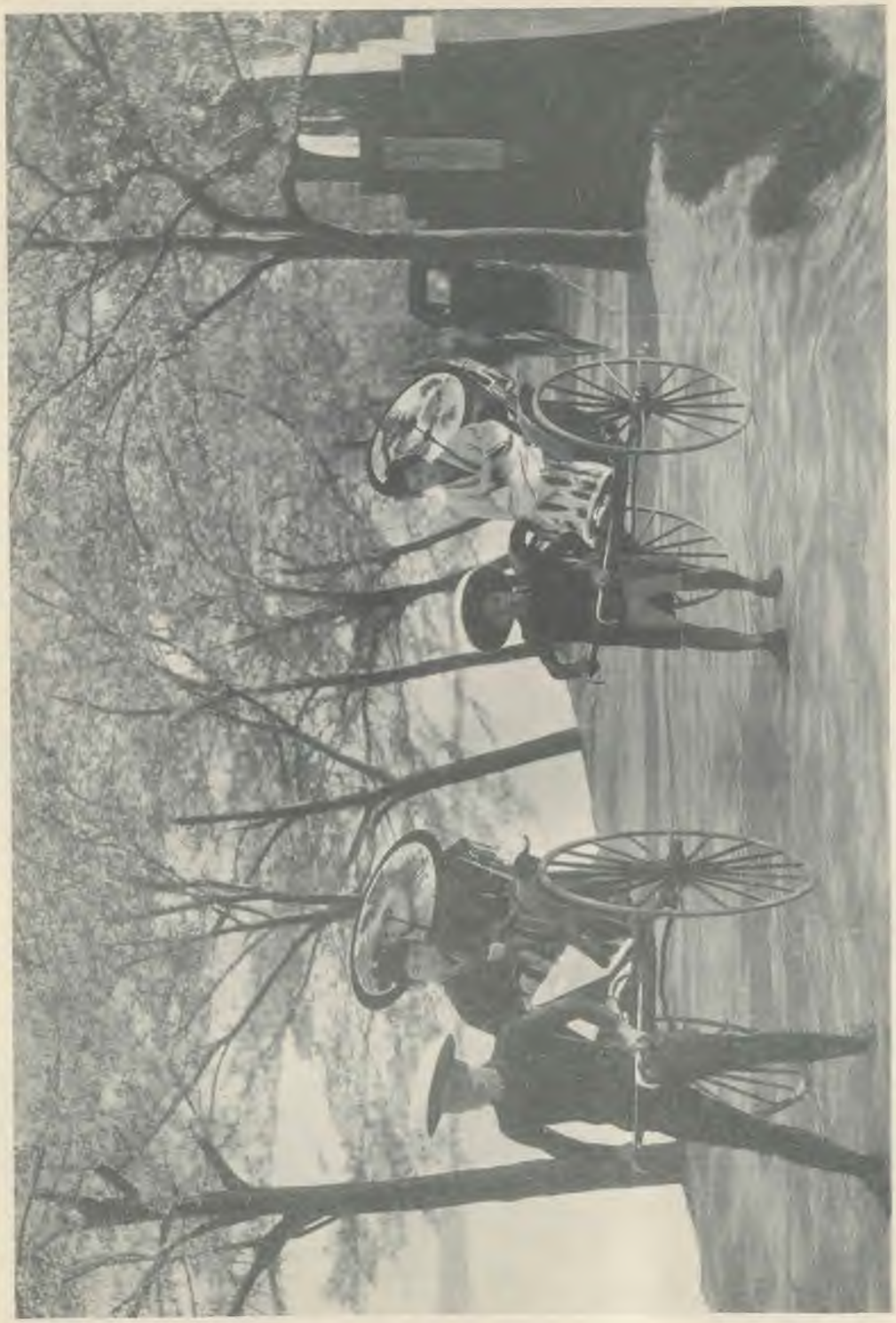
Cleveland, Ohio

A SHOPPING tour in the capital of Japan is full of surprises and interesting incidents, unlike any experience to which one is accustomed in America.

We had no sooner registered at the hotel and been assigned to our room than there was a gentle tapping at the door, and a Japanese gentleman, in American dress, entered. After several salaams he presented us with cards and booklets representing a large silk firm. "You come see. You show card jinrikisha man; he know where. Great pleasure show you beautiful silk," was his best attempt at English. We promised to pay him a visit the next day, and with many bows he departed. At least ten of these advance agents, or "runners," for the different firms came to our door that afternoon, each one bestowing the conventional number of bows, smiles, cards, and invitations to visit their respective shops and art-stores.

The next morning we were up bright and early, ready to start out on our first shopping tour. It is possible to secure a guide, who will take one to all the places of interest, but we preferred to poke about the queer corners ourselves, and make our own discoveries.

First of all, our rickshaw must be ordered and bargained for, by the hour or the day. These two-wheeled baby carts, drawn by coolies, afford the American a novel experience. They are very comfortable, and have the appearance of a flying arm-chair as they spin along the streets. The coolies who pull them wear loose coats, and tights of dark-blue cotton ending at the knee, with straw sandals on their bare feet, and an inverted washbowl of a hat on their heads. At night the shafts are ornamented with paper lanterns bearing the owner's name and license number. When flitting about in the darkness they look like so many lightning-bugs. Each coolie



OFF ON A SHOPPING TOUR

owns a warm blanket, which he carefully tucks about his passenger's knees and feet. These men have great power of endurance; they will trot along with their burden for hours without changing their pace, and never seem to be much out of breath. The weather at this time of the year is very cold and raw, but they pelt along with bare legs and feet as if it were midsummer.

When the destination is reached, the coolie slowly rests the shafts of the rickshaw on the ground, and helps his passenger out. Then he wraps himself up in his blanket and squats on the pavement to wait. The passenger may be gone inside for hours, or minutes, but always finds his faithful coolie patiently waiting in the same spot, smoking his tiny pipe or munching from a bowl of rice.

The streets are narrow, crowded with rickshaws, soldiers, carts, and children, and it is almost impossible to walk about. There are no sidewalks on the side streets, but the *ginza*, or main business street, is as wide as the average street in an American city, and has sidewalks and trolley-cars.

The shops are low, one- and two-story toy-like structures, with the front entirely open on the street. The proprietor and assistants sit on the floor, which is covered with Japanese matting, writing in their account books with paint-brushes, or warming their hands over a bowl of charcoal and ashes. The shops on the sunny side of the street have waving curtains of black or blue cloth, with crest and name painted in white, as their only protection from the sun and weather. The entire shop is revealed at a glance. There are no shelves or counters, and in groups on

WEAVING

the matting sit salesmen and beautifully dressed women inspecting the heaps of rainbow silks strewn about them. There is no exhibit of goods in the best shops; everything is stored in the "go-down." The "boys" bring out armloads and baskets of silks for the customer's inspection. A selection may soon be made, but the bargaining is a long and tedious process. Very few salesmen are able to speak any English, and there are no bargain tables. The price of the goods is determined, to some extent, by the appearance of the would-be purchaser and the amount of eagerness that he shows for their possession.

THE MAIN SHOPPING STREET IN TOKYO

These patient, polite little salesmen are quite willing to go to any amount of trouble to show their fascinating materials, and are equally as gracious if no purchase is made. They seem to think it a pleasure to serve you in this manner.

Shopping in Japan is accompanied with much tea drinking, which it is practically impossible to avoid. In each of the shops visited, tea is served in tiny cups, and a refusal would mark one as low-born and ill-bred. Sometimes dainty confections, such as salted cherry-blossoms or beanflower sweets, are served with the tea.

When purchases are made, several small boys run to wrap the articles in dainty crêpe paper, carefully placing them in your jinrikisha, which is waiting a few feet away. Upon leaving the shop, the proprietor and salesmen salaam, and with a profuse chattering of thanks they all go to the street to see you safely in your rickshaw, and wave good-by.

The ivory and silver shops are as

TEA HOUSE AT NOGE HILL, YOKOHAMA

fascinating as the silk shops, and it is very easy to spend a whole afternoon in one or two of these curio places.

Peddlers of all sorts gather along the ginza, spreading their porcelains, lacquer, and embroideries on the pavement, and it is quite impossible to walk five feet without stopping to look over some group of curios. On certain days of the week a rag fair is held, and venders with neat piles of old clothing, scraps of embroidery, and odd bits of decorations are huddled along the thoroughfares, patiently waiting to make a sale amounting to a few *sen*. One could not wish for a more attractive or fascinating sight than a glimpse of the ginza, aflame with bright-colored banners, gilt signs, and paper lanterns, and crowded with a multitude of fantastically garbed little people.

The pictorial effect of it all is, however, marred by a financial disenchantment when one meets cold, shrewd business methods in these toy-like stores, and at the hands of these polite little merchants. The Japanese have learned that their exquisite silks and their beautiful embroideries and ivories will find a ready market in Europe and America and at big prices. The result is that here in Tokyo, which is so near Yokohama, and consequently on the main line of ocean travel, goods are not sold at Japanese prices, but at only a trifle less than the prices which they would bring across the sea. The great war being waged at present has sent prices skyward, although the war itself has had more effect on the cost of actual necessities,—food, clothing, and the like.

WHERE THE JOY LIES

THE joy is in the doing,
Not the deed that's done;
The swift and glad pursuing,
Not the goal that's won.

The joy is in the seeing,
Not in what we see;
The ecstasy of vision,
Far and clear and free!

The joy is in the singing,
Whether heard or no;
The poet's wild, sweet rapture,
And song's divinest flow!

The joy is in the being—
Joy of life and breath;
Joy of a soul triumphant,
Conqueror of death!

Is there a flaw in the marble?
Sculptor, do your best;
The joy is in the endeavor—
Leave to God the rest!

—*Selected.*

HOW TO TREAT A COLD

BY KATE LINDSAY, M. D.

AS indicated in our article last month, cold being due to toxins in the tissues, the ideal method of treatment is prevention by internal and external cleanliness. But as many of us have acquired the cold-taking habit in the days of our youth, and have confirmed and strengthened this habit by hygienic sins of omission and commission in our older, self-responsible years, it is impossible at all times so to regulate our health habits as to escape colds entirely. Therefore we must do the next best thing for ourselves; that is, treat the disease by helping Nature in her efforts to clean up the organism by expelling the toxins from the tissues.

The first thing to be done is to give the digestive organs a rest, and in many cases, where there is catarrh of the stomach and indigestion, a large and thorough enema or a mild saline cathartic will help matters greatly. The old and feeble, and infants and young children should have complete rest in bed for twenty-four hours. During this time no food should be taken, unless it be mild strained fruit juices. After the acute stage, as manifested by the cessation of sneezing, aching, fever, and change in the character of the expectoration and cough, the former being now thicker, more like yellow pus, and the cough what is known as "loose" and "easier," gruels, well-cooked grains, and zwieback may be added, but still no full meals should be taken.

The lessening of the constitutional symptoms indicates that Nature is doing her work of cleaning and is being successful in the battle with disease, and, if given a chance, will succeed. But extra work for the liver, kidneys, lungs, and mucous surface, caused by chilling and dampness, an overamount of food, fatigue, or any other cause which adds to the work of the eliminative organs, may cause a relapse and further extension of the disease, involving not only the air passages, but extending to the lung cells and causing pneumonia; involving also the digestive tract and causing catarrh of the stomach and bowels, and even infecting the bile ducts of the liver.

A neglected common cold in the aged and feeble may and often does lead to a fatal pneumonia because of want of proper treatment at the outset.

The most common cause of death in children from whooping-cough, measles, scarlet fever, and other infectious children's diseases, is from the complications, the chief of which are capillary bronchitis and catarrhal pneumonia.

A cold is also very dangerous to feeble patients who suffer from rickets, heart, lung, kidney, or other chronic disorders.

When the infectious winter disorders — diphtheria and grippe — are prevailing in epidemic form, most of the fatal relapses in infants and young children with hereditary tuberculous tendencies, are due to cold contracted by unwise exposure to cold and dampness or by the overeating of indigestible food.

The marked increase in pneumonia mortality reports so manifest in the past two or three years is no doubt due mainly to pulmonary weakness resulting from damage done to the respiratory organs by repeated attacks of influenza, lessening the power of these organs to resist the inroads of a common cold. This startling increase of death from pneumonia at this time, when science has brought out so much knowledge about preventing and treating disease, and when death from so many infectious disorders is markedly decreasing, shows a lack of knowledge of the causes and proper treatment of these very prevalent respiratory disorders. Few of either the people or physicians give much attention to the treatment of a "common cold," as it is called, until some grave symptom develops. Then it is often too late to save the patient. A few days' rest, fasting, bathing, and cleaning the system at the outset of a cold might have saved many a life, which, because of neglect of proper treatment at this time, was speedily taken by pneumonia; or perhaps the patient partially recovered, only to succumb to tuberculosis a few years later.

Infants and small children allowed to acquire the cold-catching habit by neglecting proper treatment at the outset are likely to develop enlarged tonsils, chronic nasal catarrh, adenoid growths in the nose, and inflammation of the middle ears. These disorders may wreck their lives from mouth-breathing and deafness, causing dulness of intellect as well as physical ill health and weakness. Such patients suffer from repeated attacks of tonsillitis and take cold easily. Mouth-breathing also greatly increases the danger of throat and lung infection, because the inspired air is not filtered and freed from germs and dirt by passing over the mucous surfaces of the nasal membranes, which, when healthy, free this important gaseous food from dirt, and also disinfect it by destroying disease germs.

The old and often-repeated adage, "Feed a cold and starve a fever," is responsible for much damage to both classes of patients. Undoubtedly the cold-taking victims have suffered the more from the bad treatment.

The chief directions for treating a cold hydropathically run something like this: Get the skin active by taking a hot bath and inducing free perspiration, or take a hot foot bath and drink plenty of hot teas or other warm drink. So the sneezing, watery-eyed city victim of a cold in the head rushes off to some bathing establishment to get rid of his coryza by sweating in a hot water, Russian, or Turkish bath. Then a ride home in the cold in a 'bus or a street-car, or a walk in the cold, damp air chills the heat-relaxed cutaneous surface.

More congestion and more wastes for the already overburdened mucous membranes and excretory organs, and the patient is surprised to find his cold worse instead of better; in fact, he feels sick enough to go to bed, which is just where he should be.

The hot treatment for the purpose of increasing the action of the skin is all right in theory, but fails in practice because improperly administered. A hot bath should never be taken unless the patient suffering from cold has freed the alimentary canal, is giving the digestive organs a rest, and can lie down in a moderately warm, well-ventilated room for several hours after. A hot bath is best taken before going to bed at night. It should be followed by a cool sponge, spray, or cold mitten friction, etc., so as to tone up the skin. In fact, the moderately strong toning up of the skin by cool or cold bathing, especially in the morning, is much better than parboiling the cuticle and paralyzing the coats of the cutaneous blood vessels by overheating by excessive hot bathing.

Summing up the treatment for an incipient cold: First, stop eating, to give the digestive organs needed rest, and the eliminative organs a chance to expel the toxins from the body. If the patient is weak, or a young child, he should rest in bed from twenty-four to forty-eight hours in a well-ventilated room the temperature of which is not above 65°. If there is nausea and loss of appetite, with coated tongue and constipated bowels, give a lavage, enema, or saline cathartic. To tone up the skin, give two or three cold mitten frictions, sponges, sprays, or quick short cold full baths, being sure to leave the skin warm and ruddy. At night a thorough hot bath may be taken once or twice at the outset, being careful to avoid chilling afterward. When the throat is sore and dry, spraying with hot water and salt — a teaspoonful of salt to the pint, or, better still, a nasal douche of the same — may relieve the pain and discomfort, and cleanse the mucous surfaces of the throat and nose. A pocket menthol inhaler is also useful in cases of this kind.

In infants, who often suffer from being unable to nurse when the nose is stopped up, the nostrils should be freed from dried mucus by cotton saturated in warm sweet oil or liquid vaselin. Wrap small pieces of the cotton around wooden toothpicks, making small swabs, and, dipping in the oil, cleanse out the nose thoroughly. Also apply oil to the outside, and gently massage the nose downward from root to openings. Keep the eyes cleansed with a warm saline solution; and watch closely for middle-ear infection in cases where a baby has a cold in the head.

Air baths, sun baths, and oil rubs are all good treatments for colds; also the use of soothing and disinfecting solutions by means of inhalers, sprays, nebulizers, etc. But when a cold has been contracted and the symptoms manifested, it indicates systemic infection. Then the main treatment to shorten the attack and prevent complications and troublesome or dangerous after-effects is to fast, rest, cleanse the alimentary canal, and by judicious water treatment tone up the skin, avoiding overheating, and chilling afterward by exposure to cold and dampness. Breathe pure air of moderate temperature.

A robust adult may overcome a cold at the very outset by fasting and by out-of-door exercise, provided he keep active enough to avoid chilling the skin, and does not expose himself to dampness or allow his feet to become cold.

SANITARY HOUSECLEANING

THE idea of using an air blast in cleaning fabrics has for some years been utilized by a number of railroad companies in this country; the seats and curtains, as well as the walls and ceilings, being freed from dust by means of air directed through a hose-pipe against the surface to be cleaned. Although preferable to the broom method, there was room for improvement in this system, since no means was provided for collecting the dirt. The idea, however, suggested a more elaborate system, which has been tried with success. A description of the apparatus used appeared in the *Scientific American*, from which the following is condensed: —

The air is supplied by compressors operated either by steam engine or electric motor, the latter usually being preferable.

If the compressor is operated by electricity, the motor is usually direct-connected, taking the current from an isolated plant, or the generating set, which may be installed in the building. Some of the compressor plants used for supplying air for cleaning large buildings are stationary. They are generally located in the basement for convenience. From the air reservoir extend standpipes, as they might be termed, to each floor of the building. In a well-managed hotel the floor coverings of the halls, dining-room, and parlors are usually swept or "run over" with the carpet cleaner at least once a day, while the bedrooms are cleaned several times a week, depending upon the extent to which they are used. Consequently, the compressor plant is apt to be almost in daily use in a building of this kind.

For the cleaning of smaller buildings, such as dwellings and offices where the installation of a plant would be too expensive, a portable system is employed. A compressor of suitable size, operated by a gasoline engine, is mounted upon a truck especially built for the purpose and hauled from house to house. Hose-

By permission of the Scientific American.

CLEANING UPHOLSTERY WITH THE HAND MACHINE

By permission of the Scientific American.

REMOVING DUST FROM CURTAINS

lines are attached to the air reservoir and extended into the building as pipe is laid in extinguishing fires, and in this way the housecleaning can be performed as often as desired without removing the furniture or even taking up the carpets if it is not desirable. It is interesting to note that the automobile has been brought into use in this service, the motor which operates the air plant being also used to propel the machine when under way. Such is the capacity of a portable plant that three men can clean every portion of an ordinary ten-room house in a day of ten hours.

The types of apparatus for applying the air to the material vary, of course, according to the work to be performed. In the Nation-Christensen system, which has been installed in a number of large hotels and buildings, the carpet renovators are of various sizes, ranging from twelve to thirty-six inches in width. They consist of a steel framework which lies flat on the surface of the fabric. This is termed a hood, and contains an expanded nozzle connecting with the hose. In the bottom of the hood is a slot about $\frac{1}{100}$ inch in width, through which the air passes in what might be termed a sheet. It is forced into the fabric at various pressures, according to the thickness of the latter and the amount of dirt which has accumulated. The usual pressure varies from sixty to seventy pounds to the square inch. This is sufficient to blow the dirt out of and from under the covering. It passes upward through two other slots into the hood, as it can not escape outside of the machine on account of the weight on the surface. It is prevented from escaping into the air by a cloth bag which collects it, but is loose enough to allow the air to pass through. The dirt settles into a pan especially designed to collect it. When filled, this can readily be removed by

taking off the bag, and emptied. To the renovator is attached a handle for moving it over the floor. The handle also acts as a conduit for the compressed air, the supply of which is regulated by an ordinary valve. The apparatus is usually pushed over the carpet, and does its work so thoroughly that it will remove any kind of substance which can be driven out by air pressure. In several instances, flour was thrown upon a rug and trod in with the feet. When the renovator was applied, it apparently collected every particle of the flour, none escaping into the air.

In treating lambrequins and other kinds of upholstery, the hose is connected with a jointed steel tube long enough to extend to the upper portion of the apartment. The ordinary air blast is directed against the draperies, and the dirt allowed to settle upon the floor and furniture. Obviously the draperies and upper portions of an apartment are the first cleaned, then the furniture and floor covering. For removing the dust from upholstered chairs, sofas, and other kinds of furniture, what might be called a hand renovator is employed. It is constructed on the same principle as the larger type, with the slots for applying the air pressure and collecting the dust, and is pushed over the surface by hand. If the chair, for example, is stuffed with cotton or some other material, more power is employed to force the air through this material as well. In freeing such articles as pillows and mattresses, a simple pneumatic needle is used, the air being injected with sufficient force to circulate among the feathers, straw, or other stuffing, and expels the dust which may have collected.

The Tonic Use of Water.

Cold water is the universal tonic. The best time for taking a cold bath for tonic effects is just after getting out of bed in the morning, when the body is warm. A cold bath should never be taken when one is chilled. One not accustomed to cold bathing should begin carefully with water not colder than 75° F. The bath should be short, not to exceed a minute, and for feeble persons not more than fifteen or thirty seconds when applied to the whole surface. The bath should be immediately followed by rubbing and exercise for from fifteen to thirty minutes. There should always be good reaction; that is, the whole surface, including the hands and feet, should quickly become warm. The bath should not be followed by languor, headache, lassitude, or other indications of excessive reaction. When one experiences such symptoms, the indication is that the bath was too long or too cold or not followed by sufficient exercise. For feeble, very young, or elderly persons the water used should rarely be lower than 65° to 75° in winter. The bath should be taken in a suitably warmed room.

IF we look down, then our shoulders stoop. If our thoughts look down, then our character bends. It is only when we hold our heads up that our body becomes erect. It is only when our thoughts go up that our life becomes erect.— *A. McKensie.*

"ARE you the trained nurse mama said was coming?"

"Yes, dear, I am the trained nurse."

"Show me some of your tricks."

—*Punch.*

THE CONVERSION OF JOHN ROBINSON

BY ROSE WOOD-ALLEN CHAPMAN

"BUT, my dear, it's so good for you. Beefsteak and potatoes are too hearty for breakfast, so the doctor at the sanitarium said, and this dish of granola with fruit juice is so delicious. If you'd only try it!"

"Well, I won't! There's no use harping all the time on what the doctor at the sanitarium said. I've had meat and potatoes, coffee and hot rolls, for breakfast every day of my life since I was a boy, and I intend to continue."

"Well, John, you know what Dr. Thornton said the last time you went to him."

"Thornton's an old croaker. How does he know my stomach's out of order? And, anyway, he didn't tell me to take any such stuff as you're trying to get me to eat. My father ate as I do and he lived to be sixty-five, and that's old enough to suit me."

"Yes, dear. But I remember he suffered a good deal with his stomach during the last few years of his life. If you'd only try it, John, you'd——"

"Now, see here, Maria, we've had this food question up for discussion every day since you came back from the sanitarium. I'd be almost sorry I let you go there if they hadn't sent you home so well and strong. I'm positively losing my temper over the matter — and didn't your doctor ever tell you that that was mighty bad for the digestion? Now let's end this matter once for all. I'm like the little boy whose mother wanted him to eat something — probably some of your 'hygienic foods' — because it was 'good for him.' 'I don't want to eat what's good for me,' he said. 'I want to eat what I'd rather.' That's my case exactly. I want to 'eat what I'd rather,' and I intend to do so."

Mrs. Robinson sighed deeply, and ate the rest of her breakfast in silence. Her husband, with a frown on his usually genial countenance, cut up his beefsteak with a rather defiant air for a short time, and then lost himself and all recollection of the disturbance in the depths of the morning paper.

As he kissed his wife good-by, however, he noticed her worried look, and said, "For heaven's sake, Maria, do let's keep the family peace. Nothing is worth as much as that. I'm sorry I was cross and I hate to get so worked up every morning. Let's drop it all." His words, kindly meant though they were, but served to deepen his wife's depression, and she went about her morning tasks with a heavy heart. It cut her to the quick to think that her conscientious endeavors to lead her husband into more healthful habits of life should only result in domestic inharmony.

"John is so stubborn," she murmured to herself.

What should she do? Should she "drop it all," as he had urged, for the sake of peace and quiet? They were certainly worth great sacrifices. But on the other hand, there was John's health, and the health of the children to be considered. John's father had, in his later years, been a confirmed dyspeptic, whose sufferings made himself and every one around him miserable. John was already beginning to experience discomfort which his doctor said was caused by a disordered stomach. Each day he took the prescribed doses of drugs which were supposed to be of marvelous efficacy, but in spite of the

treatment, no improvement could be discerned. Moreover, at the sanitarium Mrs. Robinson had learned of how little value are drugs in such a case, and how indispensable is a return to right living.

She had seen such remarkable cures effected by a careful adherence to hygienic diet; she had herself experienced the joy which accompanies a return to physical harmony resulting from right living, and this joy she desired to share with her husband. He was growing more irritable every day, and she was sure it was the fault of his stomach. She *must* preach to him the gospel of hygiene; she would be failing in her duty if she did not bring him into the light.

She had not the heart to broach the subject to him again, however. As usual she prepared the meats, fried potatoes, hot breads, pies, and cakes which his taste craved. But all the time she was thinking, pondering the problem of how best to bring the matter to his attention.

That her husband appreciated her silence was evident in his every look and word, and again her heart smote her to think that she had been the cause of their recent period of domestic infelicity.

Quiet did not long reign in the Robinson household, however. Ever since Mrs. Robinson's enlightenment concerning the value of healthful food, she had been trying to give her children the benefit of her new knowledge. They, at least, she vowed, should have a good start in life — just as good as she could give them by means of hygienic food, which would result in strong, healthy bodies.

Little Elsie obediently followed her mother's every suggestion, and quickly showed, in clear eyes, rosy complexion, and exuberant spirits, the benefit she was reaping. Johnnie, however, seemed to feel that his years and his masculinity gave him the privilege to protest, and with all his might and main he fought against the new régime. The fact that his father refused the new kind of food encouraged him in his rebellion, and every effort of his mother in the way of gentle persuasion proved useless and unavailing.

"I don't want to eat your old sawdust food," he said, over and over again. "No, I won't even taste 'em. I know what I like, and that's what I want to eat."

His continued protest at last attracted his father's attention, and one evening he turned to his wife and said, "Maria, I don't see why you think Johnnie and I ought to eat things that we don't like. It's all right for you and Elsie to eat them if you enjoy them. For my part, I never did believe in this Puritan idea of 'denying the flesh' and getting credit by doing things that are distasteful to you. I believe in doing those things that you want to do,— as long as they aren't positively wrong — and eating those things that you want to eat."

Mrs. Robinson made no reply, for she felt that whatever she might say would have no effect. Her husband's words gave her food for thought, however, and she pondered them deeply. Why shouldn't we eat what we want to? Weren't we given our desires in order to gratify them? No, that couldn't be wholly true, because sometimes we would commit a sin if we followed our desires. But oughtn't we always to desire to do right?

Ah! there was her clue. If we always desired the right, and nothing but the right, our desires could all be gratified. If we craved healthful food and only that kind, it would be perfectly

proper to govern our eating by our taste.

There came to her mind an article which she had recently read in a well-known health magazine, in which was explained how appetites were perverted by custom. Habit created appetite, she remembered it had said, and the way to reform the appetite was to change the habits, to accustom the individual to the desired diet until finally that diet, and that alone, satisfied him.

Just as she reached her momentous conclusion, her husband was called away on business. This left her free to turn her attention to her son. How could she create in him a desire for the good things that he ought to eat?

Suddenly there came to her an inspiration. She remembered how, from babyhood, Johnnie had always wanted most determinedly the things which were hardest for him to get. Possibly that characteristic would aid her now.

Nothing was said to the boy about the new foods for some time, but one night Elsie and her mother were served with a most appetizing-looking concoction. Johnnie sniffed the air appreciatively as the dishes were placed in front of the favored two. It smelled like tomatoes, and Johnnie was particularly fond of tomatoes.

"What's that, mama?" he asked.

"Tomato toast, dear," his mother replied.

"Where's my dish?"

"There isn't any for you, my son. It was just made for Elsie and me."

"Oh!" Johnnie was too proud to say more, but he thought it queer that mama should leave him out in that way.

The next day at dinner he noticed that they had some queer-looking stuff which they spread on their bread.

"What's that?" he asked.

"Peanut butter."

"I like peanuts," he said with emphasis.

"Do you?" replied his mother quietly. "This is made from peanuts." But she made no motion to pass any to him, and he subsided into a piqued silence.

At supper they had Graham mush with dates; he knew what was in the dish, for he had seen it in the process of preparation. He said nothing at meal-time, but looked rather longingly when Elsie passed her plate for a second helping and said it was "dood."

For several days Johnnie watched them with a new interest in their food, which was no longer designated by him as belonging to the "sawdust" variety.

At last, one evening, he saw his mother again preparing tomato toast. He went up to her in a confidential manner, and said, a little hesitatingly, "Say, mama, won't you please make some of that for me?"

"I'm afraid you won't like it, my dear; it's hygienic food, you know. I don't care to prepare any just to be thrown away."

"But, mama—I—I will like it—I know I will. If you—if you'll make some for me, I—I'll try all the new dishes you make. Honest, I will."

"I don't want to make you eat what you don't like, my dear. You'd better be content with your own food. You know you like that and probably wouldn't care for this."

The boy started to leave, but turned back suddenly, saying, "Now, see here, Mama Robinson, I know what you're up to. You're trying to pay me back for not wanting to eat your 'sawdust food.' Well, I give in. Let's call it square and begin over again, and I'll see how many hygienic dishes I can learn to like."

"Very well, my son, I'll be very glad to 'call it square;' but, remember, you're doing this of your own free will."

"I'll remember," said the boy, as he left the room with a whoop of delighted anticipation at the good supper in store for him.

Johnnie kept his word, and by the time his father returned, had become quite an enthusiastic champion of hygienic food. So much greater variety was possible than where meat and potatoes were the rule for three meals a day, and so many delightful combinations with fruits and grains and health-food preparations resulted from his mother's following of the new plan that he was more than content with his bargain.

His father looked surprised upon his return to see the boy eating the "sawdust food," but made no comment. Meat and potatoes were still good enough for him, although he occasionally looked rather interestedly at the new dishes over which the children were so enthusiastic.

"Oh, goody! goody! Apple-sauce gems, and prune toast, and chocolate," shouted Johnnie one night, as he passed through the dining-room just previously to the evening meal.

"Say, papa," he remarked later, when they were at the table, "you just ought to try these apple-sauce gems. They're bully. Better'n cake every time."

"I'm sorry," said Mrs. Robinson, as she helped herself, "but this is the last one. I didn't prepare any for you, you know, dear."

Wily Mrs. Robinson! She had learned her lesson from her experience with her boy, and had made up her mind to try the same strategy on that boy of larger growth, her husband.

Several times his curiosity was aroused to the point of asking for a bit of some strange dish, but never did there seem to be enough for him. At last a most enticing pie appeared, which was served to the other three, but not to him. Someway, that pie looked most wonderfully appetizing.

"How about letting me have a piece of that, Maria?" he asked, feeling that, under the circumstances, an indirect question might result in less chagrin to him.

She couldn't say there wasn't enough, but she replied, "I don't think you'll care for it, dear. It's just some of my hygienic food." Johnnie gave his mother a quick look as these rather familiar words passed her lips, and then dropped his eyes to his plate with a queer chuckle.

"See here, Maria. What objections have you got to my trying some?"

"Why, none, my dear; only I don't like to think of your being forced to eat things you don't like, and as you know you don't like my new-fangled food, I think you'd better not taste it."

"H'm!" said John Robinson dryly. Some of the phrases in her speech sounded familiar to him, as if they might be quoted from previous remarks of his own.

Just then Johnnie spoke up. "Say, papa, I'd advise you to capitulate — I guess that's what they call it. It's when you give up in war, you know. Mama worked me that way until I gave in — and I'm mighty glad now that I had sense enough to come around to her way of living. Her stuff is awful good, and this pie is particularly scrumptious."

John looked at his boy reflectively for a moment and then said, with mock solemnity, "My son, your words are the words of wisdom. I give up — capitu-

late — surrender. I throw myself upon the mercy of my noble antagonist and humbly beg — for a piece of that pie."

Mrs. Robinson knew that her cause was now practically won. Smilingly she handed him the desired piece, as she asked, "Shall I count you in when preparing my hygienic dishes? You might not like some of them, you know."

"Count me in always, my dear. If I don't like 'em the first time, I may the second. At any rate, I want to try 'em all — every one of them."

Gladly Mrs. Robinson followed out her husband's instructions, and little by little he found himself becoming more accustomed to the new dishes, and more fond of them. After a time he began to notice that he felt brighter mornings; that he no longer had headaches; that the dreadful gnawing at his stomach troubled him no more, and it dawned upon him that the only possible cause for this improvement lay in the change of diet. To feel as fresh and strong as he did every day was worth a big sacrifice — but it was no sacrifice now to go without his meat, hot breads, coffee, and other "abominations." Caramel cereal for his drink, protose and other substitutes for meat, Graham gems and rolls, together with the other innumerable and attractive dishes now prepared by his wife, more than satisfied his desires.

"I'll tell you, wife," he said one day at dinner, "I've found out the secret of the joy of living. It's this: eat what you want, but want only what's good for you. The result of that principle is that your desires are gratified, and at the same time, and most important of all, your body is maintained in that healthful condition which is essential to exuberant joy. I tell you I'm glad you went to that sanitarium and came back to educate my appetite. I'll take another apple-sauce gem, if you please. Better than cake, aren't they, son?"

"You bet," was the enthusiastic rejoinder.

MUSIC AS MEDICINE

THE curative effect of music, especially in cases of melancholia and other nervous maladies, has been recognized from antiquity. The melancholy that haunted the soul of Saul was exorcised by the harp of David. Philip the Fifth, and Ferdinand of Spain, two hypochondriacal monarchs, kept, as court physicians, sweet singers and harpists, finding nothing else so efficacious as music in dispelling their mental gloom. De Quincey, whose nervous system was shattered by opium smoking, spoke of music as "a necessity to his daily life."

At the present time, when the tendency in the practice of medicine is more and more to eliminate drugs and to work upon the patient from the outside by the use of various physiologic agencies, music is coming to be regarded as one of the most important aids in the treatment of disease. "For if anything is obvious," writes Gustav Kobbé in *Good Housekeeping*, "it is that music, according to its kind, excites, exults, or soothes the listener; and the deduction that from these emotional states there results a physical reaction, such as often is sought for in the administration of medicine, is equally obvious." The same writer describes the results of experiments

made in different parts of the world to determine the efficacy of music as medicine : —

" Dr. E. C. Dent, the medical superintendent of the Manhattan state hospital, west, on Ward's Island, New York, is so convinced of the efficacy of the treatment that the funds for the employment of hired musicians having given out, he has organized an orchestra from among the attendants of the institution and thus is able to continue the experiments.

" What physicians would call the 'physiology of music,' why and how music acts upon the body, has been considered by no less an authority than the *Lancet*, the leading medical journal of England. Simplified, its statements signify that, as music consists of sound waves, its vibratory action stimulates the nerve centers, braces depressed nervous tone, and through the nervous system reaches the tissues and 'acts as a refreshing mental stimulant and restorative.'

" Among the best known foreign experiments in the 'physiology of music' are those of Professor Tarchanoff, in St. Petersburg, and of the Frenchmen Ginet and Courtier. Their object was to show that distinct bodily action occurs as a result of listening to music and thus to prove that music can be employed to produce similar action in patients when such action is desirable. Tarchanoff's experiment was a peculiarly interesting one. Divested of all technical terms, it may be described as follows : —

" Taking a man to experiment upon, he exhausted this man's fingers by means of voluntary exercise on his part and electricity. So complete was the exhaustion that it was impossible for the man to move a finger. When sad music was played, the sense of fatigue in the fingers was, if possible, greater, but when a lively tune was struck up, it was overcome and the man was able to move them. This indicates that fatigue, even extreme fatigue, can be overcome by cheerful music, and is in line with what I have written regarding the overworked orchestral player. But the increased lassitude induced by slow music also serves a purpose. One of the difficulties in treating mental disease or such other illnesses in which the mind also is affected, lies in the inability of the physician to gain the patient's attention. The musical method consists in creating such a complete state of lassitude through slow music that the moment a lively tune is struck up, the contrast makes an impression on the patient and attracts his attention. This method has, by repeated experiment, been found to be the first step in securing the mental concentration which forms the foundation of the cure.

" The experiments of Ginet and Courtier were conducted with a view to determining the effect of music upon breathing and upon the action of the heart. It was found that lively major chords, without relation to melody, quickened breathing. Melodies, grave or gay, caused rapid breathing, the respiration approximating its time to that of the music. Rallentando and diminuendo effects made the breath come more slowly. Single notes without tune accelerated the heart's action, but melodies quickened it still more, operatic pieces resulting in the quickest action. These experiments would seem to show conclusively the stimulative effect of music. . . .

" Music is a splendid remedy for overfatigue and brain fag. Its systematic application in such cases will, however, be a new idea to many, no matter how deeply they may be interested in music, but they will grasp the

idea and see the possibilities in it at once. Nor will they be surprised when told that dance music, martial music, and ragtime affect the muscles of the lower limbs, and by thus tending to draw the blood to the feet, are good for congestive headaches. They will accept without protest the statement that music can be substituted for noxious and insidious opiates in the treatment of insomnia, by riveting the patient's attention and then tiring it with low, soft music. Also they will understand the full meaning of a physician's dictum, that the mother who soothes her baby with a lullaby, not only is singing sleep, but also strength into its little body. . . .

"What they will wonder will be whether music can be applied to unmusical people, and therein experiments seem to bear them out. 'It is necessary that the patient have some natural love for music,' is one of Dr. Dent's deductions from the experiments carried on at the Manhattan state hospital. . . .

"Nearly all the systematic experiments which have been made in public institutions have been in cases of mental disease, but highly important results have been obtained, and, what is more, the reports are complete and absolutely authentic. The lover of music will be amused to see it spoken of in these reports as a 'dose.' To show the effect of the treatment, let me quote from one of Dr. Dent's reports:—

"'The patient, a woman afflicted with chronic mania, was brought into the room. She was violent, was in a strait-jacket, and her language was loud and profane. A Chopin nocturne was played, with the result that her profanity ceased, and she began talking sensibly. Under the influence of a Beethoven adagio her pulse became full and strong. With "Home, Sweet Home," her skin became warm, showing a healthy reaction; she was less nervous, and, in the end, was sent back to her quarters *without the strait-jacket*.'

"The results at the Manhattan state hospital, west, show that out of every one hundred patients treated musically, thirty-eight recovered ,thirty-three improved, while only twenty-seven remained unbenefited. Observation showed an increased pulse, breathing, and bodily temperature; a gain in weight in nearly all cases; and they were quieter during the night, showing that the soothing effect of the musical treatment was prolonged.

"'I advise the band in every case,' Dr. Dent said to me recently, in speaking of musical treatment and of the orchestra which had been organized at the institution of which he is medical superintendent. Indeed, the efficacy of music when applied to the treatment of mental diseases is overwhelmingly certified to by actual results in practice, and if nothing more had been accomplished or were in prospect, this of itself would be of vast importance to humanity. But it seems that as a means of counteracting fatigue of mind and body and as a soothing medium in insomnia and nervous affections, its possibilities are infinite; while the experiments of Ginet and Courtier show that it quickens the action of the heart. Once let music as medicine become the subject of more general experiment, and its use in the alleviation of disease will be rapidly extended."

A SIMPLE VEGETARIAN MENU

BY ISABEL BELL,
Belfast, Ireland

ALMOND ROLLS — STEAMED MACARONI — BAKED POTATOES
GREEN PEAS — BROWNED RICE
ZWIEBACK — GRANOSE BISCUIT
BAKED APPLE PUDDING — SULTANA PUDDING
FIG SAUCE — STERILIZED CREAM

Recipes.

Almond Rolls.—

2 large cups of zwieback crumbs
1 " cup " gluten
1½ large cups of almond meal
2 large cups of cold water
½ teaspoonful of salt

Mix all the dry ingredients together, add water; press the mixture into an oiled mold, and steam for four hours. It should turn out in shape, and may be sliced before serving.

The mold should be cylinder-shaped, about seven inches deep and four inches in diameter.

Steamed Macaroni.—

6 oz. macaroni
2 eggs
2 cups milk (small)

Break the macaroni into two-inch lengths, drop into one and one-half pints of boiling water, and add a teaspoonful of salt. Cook in a double boiler for about two hours or until tender. Put into the dish from which it is to be served. Beat the eggs thoroughly and mix with the milk. Pour over the macaroni and let it stand ten minutes. Set the dish into a pan of boiling water and let it simmer gently for about half an hour or until set. Garnish with parsley.

Baked Potatoes.— Select potatoes of uniform size, wash, peel, dry, and bake in a moderate oven about an hour.

Browned Rice.— 1 cup of rice which has been browned in the oven, 3 cups of boiling water. Steam for two hours.

Baked Apple Pudding.—

3 cups zwieback crumbs
1 egg
1 small cup of cold water
About 3 lbs. of fresh apples or 1 lb. dried
¾ lb. stoned raisins

Peel apples and cut into small pieces, stew until tender, using as little water as possible. Chop the raisins, or, better still, grind through an Enterprise Food Chopper. Beat the egg thoroughly, mix with water, stir into the zwieback crumbs. Put a layer of the same into a pie-dish, then a layer of stewed apples, a layer of raisins, another layer of apples, cover with the zwieback crumbs, and bake in a moderate oven for two hours. It may be served either warm or cold.

Sultana Pudding.—

1 pint milk
2 small cups granose flakes
2 eggs
1 cup sultanas

Stew sultanas until tender in a small quantity of water, drain off the water, beat the eggs, mix with milk, add granose flakes, stir in the sultanas. Bake in a slow oven for one hour or until set and nicely browned on the top.

Fig Sauce.—

1 large cup of figs
1 pint of water

Wash the figs carefully, remove the stems, and grind through an Enterprise Food Chopper. Blend thoroughly with water; strain to remove any coarse pieces. Put into an enameled saucepan to heat, but do not allow to boil.

THE PARADISE VALLEY SANITARIUM

THE so-called "open air" method of treating chronic pulmonary tuberculosis or lung consumption has proved so marvelously successful that the medical profession everywhere have come to recognize the potency of this method of treatment, not only in pulmonary consumption, but in all chronic maladies. Man is naturally an out-of-door animal.

A large proportion of human ailments can be directly traced to the unnatural indoor life led by the majority of civilized human beings, especially in cities. The winter season, in particular, is rendered most unhealthful for those who live in cold climates, such as that of the Eastern portion of the United States, as the average dwelling is unventilated; and the superheated, stifling air to which the shut-in inhabitants of our Eastern cities are exposed night and day during the winter season is highly enervating, and lays the foundation for physical decay and various degenerative disorders.

Thousands, realizing this fact, having once tasted of the blessings of outdoor life, flee to the South, especially Florida and other portions of the Southern States as soon as Jack Frost makes his appearance in the fall. The number of people who participate in this annual migration increases from year to year, and now counts up to many thousands. Doubtless many are benefited by the change, but the variable weather of the South is a great drawback. The hot Gulf breezes, saturated with moisture, are enervating and depressing, and prepare the system for the greatest possible injury from the cold "northers" which are likely to put in an appearance almost any time. Over the greater part of Florida the thermometer drops to the freezing-point, so the orange raisers are compelled to build bonfires among their trees to prevent the destruction of the crop.

Recently the attention of health seekers has been called to the extraordinary qualities of the climate of Southern California. San Diego County undoubtedly presents advantages that are not found in any other section in the United States. The greatest obstacle in the way has been the lack of facilities for caring for invalids in this region.

We are glad to announce that this want is now supplied. Through the efforts of Mrs. E. G. White, one of the founders of the Battle Creek Sanitarium, her son, W. C. White, Mrs. J. Gotzian, and a few interested friends, an institution has been established at one of the most favorable spots in San Diego County, known as Paradise Valley. A large building on the grounds, shown in the accompanying illustrations, was erected a few years ago by a physician, to be employed for sanitarium purposes, and more than sixty thousand dollars was expended on

PARADISE VALLEY (CAL.) SANITARIUM

the buildings and grounds. Unfortunately the promoter of this enterprise had overlooked one very important feature in sanitarium work; viz., a constituency. It takes something more than a building and a site to make a sanitarium. Every such institution, in order to succeed, must have behind it an army of men and women scattered over a broad area who are acquainted with the institution, its objects and purposes, and who are in sympathy with them and ready to work for the development and maintenance of the enterprise.

The building was completely equipped for sanitarium purposes, and the opening was announced, but patients did not arrive, and so the enterprise failed. This fine plant was secured by the persons above named, and several thousand dollars have been expended in further equipment and improvement.

The situation of the Sanitarium affords a fine landscape scene with the table mountains of Mexico to the south; San Miguel and lower peaks of the Coast Range to the east; and a magnificent view of the silvery Bay of San Diego and the Pacific Ocean and the Coronado Islands on the west; Point Loma, with her celebrated lighthouse, a little further to the north; and the whole of National and San Diego cities, and the surrounding valleys, whose olive and orange orchards are always green, constituting a grand panorama calculated to give joy and health and life to those who can avail themselves of the privilege of visiting this, one of the loveliest and most attractive places in the world.

There may be other localities where

A SIGHTLY VIEW

an equally delightful climate is enjoyed for a brief period, but there is no other place in the world where the temperature is more even, delightful, and healthful all the year round than in San Diego County. The temperature of San Diego has exceeded 90° by nineteen times in thirty-two years. Four times in the history of San Diego the temperature has gone down to 32° (the freezing point), but it has never fallen lower, and within the history of the city there has never been a snowstorm. Flowers bloom out of doors every day of the year. There is an average of 135 days in the year when the thermometer stands between 55° and 65° day and night.

The following table gives the maximum and minimum temperatures for each month in the year:—

1900	Max.	Min.	Average
Jan.	79°	46°	57.8°
Feb.	76°	45°	57.6°
March	80	46	59.2
April	67	45	56.8
May	75	49	60.9
June	87	56	64.4
July	84	60	67.6
Aug.	80	59	66.2
Sept.	87	55	65.6
Oct.	72	50	63.1
Nov.	89	51	64.6
Dec.	79	44	60.4

Last year there were 291 clear days, and a rainfall of only about five inches.

During the past ten years there has been an average of one day per month when there was an hour or more of fog, and during that period there have been only seventeen thunder-storms, an average of less than two per year. The average humidity covering a period of thirty-one years has been 73 per cent.

During this same period of thirty-one years there has been a high wind twice each year. There is a sea breeze from about ten in the morning until

four or five in the afternoon, the average velocity being 5.6 miles per hour. These statistics are all collected from the official records of the weather bureau, and will indicate to our readers how well adapted this climate is for a pleasant out-of-door life all the year round. No place is more free from seasonal diseases, and no climate is better for health seekers.

The Sanitarium is not yet formally open, and its work has not yet even been announced to the public, but still applications for admittance began to come in as soon as repairs were commenced. One good woman insisted upon coming, and has been with us about two months, while the painting and repairing were going on. Week before last, six patients pressed their way in upon us; others have come since, and all are pleased and are doing well. We expect the formal opening to take place about the middle of February, and it seems probable that our building will be full before we have time to open, as there are only four unoccupied rooms at the present time. In making announcement of the preparation of this place for sanitarium work, the Board of Managers and Investors wish thus to express publicly their thanksgiving to God for the marked providences which have opened the way for the launching of this enterprise.

Those wishing to visit the Paradise Valley Sanitarium should buy tickets to San Diego, via Los Angeles. The Sanitarium maintains a city office at 1117 Fourth St., San Diego. Patients will be met at San Diego by an easy conveyance from the Sanitarium, which is reached after a delightful ride of a few miles over a fine road running through one of the most beautiful semitropical regions in the world, — orange, lemon, and olive groves on every side, the grand old Pacific in full view to the West, picturesque mountains raising their lofty heads in long rows toward the east, while at the south, only a few miles distant, lies that delightful, but little-known region of Old Mexico, Lower California.

Full particulars respecting rates, facilities, etc., may be obtained upon application. Ask for Booklet "A." Address Manager Paradise Valley Sanitarium, National City, Cal.

YOUR PLACE

JUST where you stand in the conflict,
There is your place;
Just where you think you are useless,
Hide not your face;
God placed you there for a purpose,
Whate'er it be;
Think! He has chosen you for it;
Work loyally.

Gird on your armor! be faithful
At toil or rest,
Whiche'er it be, never doubting
God's way is best.
Out in the fight, or on picket,
Stand firm and true;
This is the work which your Master
Gives you to do.

— *Helen M. Richardson.*

A VEGETARIAN BABY

LITTLE WILLARD, the son of Mr. and Mrs. I. C. Sultz, was born Dec. 25, 1903. And on account of the vegetarian habits of his parents and his extreme health and strength he has already acquired fame as "The Vegetarian Baby."

WILLARD SULTZ

The mother was fed wholly on a vegetarian diet, and treated according to Dr. Kellogg's method. This gave the child such a thorough development and the bones were so hardened that when he was twenty-four hours old, he was able, with a little support, to stand erect, bearing his entire weight (ten and one-half pounds) on his feet, and to carry his head like a four-months-old child. He has stood and jumped up and down on his feet every day since he was two weeks old, and his limbs remain perfectly straight.

At the age of three months he weighed twenty pounds, and at six months (when the accompanying picture was taken) he weighed twenty-five pounds. When he was eleven months old, Willard weighed thirty and one-half pounds. When nine months old he began to walk; and at ten he was able to walk all about the house. Now he says nearly everything he is told to say.

He has never been sore or chafed, this being due to his cool morning bath, and his sitz bath once and sometimes twice a week.

Some may infer that the father and mother are large, which would have something to do with the child's strength and development. But that is not true; the mother's average weight being only one hundred and twenty pounds, and the father's, one hundred and forty-five.

This is certainly a living rebuke to the old theory that the mother, as well as the child, in order to have proper strength and development, should use a great deal of flesh food.

A Safety-Valve.

In the February *Ladies' Home Journal* a writer tells of an interesting visit which he paid when a boy to the "Autocrat of the Breakfast Table." After breakfast Dr. Holmes took the boy into a basement room, which was fitted up as a complete carpenter's shop, and gave him the following advice, which he considered would be of more value to him than anything he had ever written: —

"You know I am a doctor, and this shop is my medicine. I believe that every man must have a hobby that is as different from his regular work as it is possible to be. It is not good for a man to work all the time at one thing. So this is my hobby. This is my change. I like to putter away at these things. Every day I try to come down

here for an hour or so. It rests me because it gives my mind a complete change. For, whether you believe it or not," he added with his inimitable chuckle, "to make a poem and to make a chair are two very different things.

"Now, if you think you can learn something from me, learn that, and remember it when you are a man. Don't keep always at your business, whatever it may be. It makes no difference how much you like it. The more you like it, the more dangerous it is. When you grow up, you will understand what I mean by an 'outlet.' Every man must have an 'outlet' — a hobby, that is — in his life, and it must be so different from his regular work that it will take his thoughts into an entirely different direction. We doctors call it a 'safety-valve,' and it is. I would much rather," concluded the poet, "you would forget all that I have ever written than that you should forget what I tell you about having a safety-valve."

For a Cold.

The daily cold bath is one of the most effective safeguards against taking cold. Of equal importance is abundance of fresh air in the sleeping apartment. Upon the first symptoms of "a cold," deep breathing exercises in the open air or in a well-ventilated room should be taken at frequent intervals. In nearly all cases where this simple treatment is taken, there will be no further development of the cold, and the symptoms will disappear. A doctor connected with a large children's institution recently tried this method upon the inmates with surprising success.

"There is nothing," he writes, "more irritable to a cough than a cough. For some time I have been so fully assured of this that I determined, for one minute at least, to lessen the number of coughs heard in a certain ward of the hospital of the institution. By the promise of rewards and punishments, I succeeded in inducing them simply to hold their breath when tempted to cough, and in a little while I was myself surprised to see how some of the children entirely recovered from the disease.

"Let a person, when tempted to cough, draw a long breath, and hold it until it warms and soothes every air-cell, and some benefit will soon be received from this process. The nitrogen which is thus refined acts as an anodyne to the mucous membrane, allaying the desire to cough, and giving the throat and lungs a chance to heal."

A Difference.

The Amherst freshmen recently gained in five weeks an average of seven pounds apiece in weight and one-fifth of an inch in height. The cause of this expansion was that instead of swinging dumb-bells three times a week in the gymnasium, they were taken out of doors and practiced in running and other out-of-door track exercises.

Exercise of the muscles not only strengthens them, but, by improving digestion, helps every organ and tissue. Exercise encourages the growth of the bones, thus increasing height.

"WEAR a glad look. No matter how you feel, look up. God is good, and his sunshine is there always. Clouds may come between you and it, but keep looking, feeling glad that the sunshine is surely there and will remain to warm you, but the clouds will pass away."

Chautauqua School of Health

FATIGUE

BY J. H. KELLOGG, M. D.

WHEN any large group of muscles, for example those of the legs, is set in active operation, as in jumping or running, one becomes very quickly out of breath. This is a species of fatigue. It is due to the fact that when the muscle is at work, it throws into the blood which passes through it a large quantity of carbonic acid gas, which is poison to the body, and must be hastened out through the lungs. The greater amount of this gas thrown into the blood, the quicker one becomes out of breath, and the more rapid and urgent the breathing movements. Under the influence of active exercise the lungs are expanded to their utmost capacity by strong chest movements, which are made without voluntary effort, for the process of breathing is under the control of the automatic will. The breathing movements induced by vigorous exercise are deeper than those that can be induced in any other way, because they are executed in obedience to an imperative command from the nerve centers, through which the automatic will controls the lungs.

If the exercise is less violent and continued for a longer time, one may not get out of breath, but after a while the muscles will become wearied, so that movement is difficult, and may become impossible. This fatigue, or exhaustion, is due, not to the using up of the supply of energy with which the muscles are stored, but to the production of certain poisonous substances which result from muscle work, and which have the effect to paralyze the muscle. If one rests for a time, the sensation of fatigue will disappear, the fatigue poisons having been washed out by the blood. The fatiguing exercise may now be repeated.

After very prolonged and violent exercise, especially exercise to which one has not been accustomed, one may find himself suffering from muscular soreness, stiffness, together, perhaps, with great lassitude, and even fever, if the exercise has been very violent or prolonged. These symptoms do not generally appear until some hours, perhaps a day or even longer, after the exercise producing them. This is known as secondary fatigue.

A fatigue induced by a short period of exercise is very quickly recovered from, possibly disappearing within a few minutes. The longer and the more arduous the work performed, the longer the period of rest required for recuperation. Exertion may be carried to such a point that death may result from the fatigue induced. Runners have sometimes dropped dead at the end of a long course. Horses have been known to die suddenly from the same cause; as also have dogs when attempting to fol-

low their master on a long and fast bicycle ride. Carrier pigeons not infrequently fall to the ground dead from exhaustion after a long and rapid flight. In such a case the death is due to the rapid accumulation of the fatigue poisons formed by the overacting muscles. Fatigue may be said to be always a condition of poisoning, whether it be local or general fatigue.

It is interesting to note that exercise of a portion of the muscles may give rise to general fatigue. For example, one's arms become tired as the result of running, although not to any extent actually employed in the exercise. The brain and nerves are also wearied, as well as the muscles, by prolonged muscular work. It is important to note the fact that one is more likely to become fatigued when performing exercise to which he is not accustomed. When he becomes used to the work, it can be done with less fatigue, or perhaps none at all, and the smaller amount of carbonic acid gas produced shows that the work done by the muscle is less.

Mental work requires much less food than does physical labor. Recent careful experiments show that men engaged in active mental labor and abstaining from muscular exertion, require practically no more food than men at rest. This is a fact of very great importance for students, ministers, and other professional men whose occupation does not require any considerable amount of effort, since the taking of food in excess of that which is required, results in the filling of the blood with poisons, and in consequence crowding of the tissues with tissue wastes and poisonous matters which interfere with all the bodily functions and especially with the functions of the brain and nerves. Mental activity is clouded, sleep may be prevented, and all the effects of nervous exhaustion produced by a comparatively slight expenditure of energy, giving rise to languor, sometimes depression, and at other times irritability, confusion, and indecision of mind, even moroseness and melancholy.

The condition of lethargy produced by excessive eating or habitual drunkenness must be distinguished from fatigue due to work. Persons in this condition often decline to exercise because they "feel so tired." This state of lassitude and enervation can not be overcome by rest. Carefully graduated exercises and regulation of the dietary are the proper remedies. There are many chronic invalids whose sufferings and disability are wholly due to this cause, and who may be readily restored to usefulness by a spare and simple dietary, combined with outdoor exercises, gradually increased in vigor and duration as the strength improves.

Persons whose habits are sedentary are very much subject to secondary fatigue. Two thousand five hundred food units should be consumed by muscular work. A sedentary person consumes in work only one-tenth part of the food eaten, or eight hundred food units, leaving the remainder to accumulate in the body in the form of unused material, provided the same amount of food is eaten. This would give rise to an accumulation of fat at the rate of about one pound a week; but after a time the limit of useful fat accumulation is reached, so that no more of the reserve material can be properly disposed of in this way; if the same quantity of food is still taken, the tissues are flooded with imperfectly burned material. If meat, milk, eggs, or other albuminous foods are used in considerable quantity, uric acid and other similar poisons accumulate in the muscles. Such a person, on taking exer-

cise, even though it may be very small in amount, suffers extremely from secondary fatigue. A slight cold, or any unusual digression in diet, such as is likely to occur on holiday occasions, may increase the amount of tissue poisons to the extent of provoking an attack of rheumatism or gout.

The soreness and stiffness which accompany secondary fatigue usually disappear in a few days, and unless the exertion has been exceedingly violent, so that the parts used have been strained or otherwise injured, the muscles are stronger than before, able to endure more work, and the same exercise may be repeated without injury. The soreness and stiffness which follow the first attempts with any new form of exercise or any unusual amount of exercise, should not discourage one, but should be regarded as an indication that nature is preparing the muscles for better service by strengthening the muscular fibers and storing up a larger amount of energy.

Those who have not been accustomed to active exercise generally manifest a very great reluctance to engage in any vigorous or prolonged muscular effort. The fatigue experienced is disagreeable, more or less distressing, perhaps; but perseverance will work such a change in the muscles and in the whole body as to make active muscular exertion a pleasure and a delight instead of a disagreeable task. All animals delight to work. A healthy child can with difficulty be restrained from almost constant activity when awake. Man is naturally constituted to be the most agile, enduring, and active of all the members of the animal creation.

EXERCISES TO IMPROVE THE CIRCULATION

BY MRS. H. R. SALISBURY

For Cold Hands.

1. If your hands are cold, give them a good, hard shaking. Imagine that you have dipped them in water and that you wish to shake off every drop. Shake them briskly till the fingers begin to feel big and swollen. Keep on shaking them till each feels as "big as a barrel," and shortly they will be tingling and glowing with warmth.

2. If you wish an exercise a little more general in its effect, and also more vigorous, try what is known as the "milkman's slap." Extend the arms at the sides, level with the shoulders, with the palms facing front. With an energetic swing, fling them across the chest, crossing each other, the right hand giving a decided "slap" to the left shoulder while the left hand does the same to the right shoulder. Take this twenty times, first with the right arm crossing above the left, then vice versa. See Fig. 1.

3. If the hands are not yet warm, this exercise will undoubtedly produce the desired effect. Start in the same position as for No. 2. Strike the palms of the hands together sharply in front, shoulder high; then

2 3 4

strike them low down, behind the back; then reaching as high as possible overhead; then behind the back again; making four strikes for each exercise. Keep the chest well lifted, and the head erect. Take ten to twenty times. See Figs. 2, 3, and 4.

4. A very good general warming-up exercise is as follows: Raise the arms shoulder high at the sides with the hands strongly clenched. As you raise the arms, rise on the toes, and begin to inhale slowly. Stretch the arms to the greatest extent possible, and without allowing the elbows or wrists to bend, rapidly describe very small circles back and down with the clenched fists, making the circles at the rate of three a second. After you have made from thirty to forty circles, let the arms and heels slowly lower as you breathe out. Repeat four to eight times, or until you are warm. This exercise, besides stimulating the circulation, broadens the chest, and strengthens the muscles of the upper part of the chest. In practicing it lean a little forward rather than back.

5. Another exercise which may be taken without attracting attention when walking, or while sitting in a 'bus, is to clench the hands very tightly, then to force the fingers open, making strong resistance at the same time. Take first with one hand, then with the other.

For Cold Feet.

1. Nothing will warm the feet more quickly or effectually than a good run out of doors, or, if that is impossible, a "run in place." In your out-of-door run, run on the balls of the feet, leaning a little forward, and holding the arms in an easy position at the sides. Keep the mouth closed, breathing through the nose, and breathe slowly and deeply. If you are careful to take the breath slowly and evenly, you can run much farther without getting out of breath.

2. Rise quickly on the balls of the feet; hold the position for an instant, then slowly let the heels sink. Inhale as you rise, and exhale as the heels come down. Take from twenty to thirty times.

3. The muscles of the calves of the

5 6

leg will be rather tired after taking the heel raising, and it will both rest them and help bring blood to the feet if you practice the following: Place the hands on the hips, and touch the right toe straight back as far as you can without bending the body or stooping. Then swing the leg with a pendulum movement forward and backward, counting *one* for the forward movement, and *two* for the backward swing, till you have counted ten. This will leave the foot in the starting position. Change your weight to the right foot, and take the same exercise with the left foot. In swinging let the leg be relaxed at the knee. Take this exercise from six to ten times with each foot.

4. An exercise which may be taken either sitting or standing, is to raise one foot slightly from the floor, extending it in front. First flex the foot forcibly, then extend it till all the muscles in the upper part of the foot are at full stretch. Take from ten to twenty times with each foot.

5. If you are a stenographer or a clerk, and can not stop for a run or a walk, or even three minutes' "heel raising," try an exercise for the feet similar to one already given for the hands. Contract the toes as strongly as you can. Hold the position for a moment without relaxing the muscles in the least. Then let go, and take the exercise with the other foot. Exercise the feet alternately till they are warm.

THE HEATING COMPRESS

THE heating compress consists in the application of a cloth wrung quite dry out of cold water, covered, and left in place until it acquires the temperature of the body, or until it is dried by evaporation.

There are two forms of this compress — *the heating compress* and the *well-protected heating compress*.

The heating compress is one in which the cold wet cloth is covered with two or three thicknesses of flannel, sufficient to encourage reaction, so that the compress will be well warmed up while still allowing evaporation, thus drying the compress in the course of a few hours.

The well-protected compress is covered first with rubber sheeting, oilcloth, mackintosh, or some other impervious material, so that evaporation will be completely prevented. Several thicknesses of flannel are then applied, so that the compress will be promptly and thoroughly heated.

THE WET GIRDLE

The effects of these two forms of compress differ materially. The first fills with blood the skin area to which the compress is applied, while at the same time stimulating the movement of blood through the internal organ which is reflexly connected with it. In the protected compress, cooling by evaporation is prevented while the surface circulation is stimulated. The result is heating of the skin to a temperature above normal, and venous congestion, such as follows any hot application. At least this is the final effect of the compress, although for some time after the application is first made, while the skin is being heated, the tonic effect of the ordinary heating compress is induced. The protected compress does not dry out; hence, when it becomes warm, it acts like a poultice, not only congesting the surface vessels, but encouraging an accumulation of blood in the internal parts associated with the skin surface to which the application is made.

The heating compress is, then, an exceedingly useful measure, one which may be employed in a variety of conditions, and with which varied effects can be produced. It is indeed one of the most valuable of the many measures known to scientific hydrotherapy, and has been in use from the most ancient times. The ordinary poultice, no matter what the material of which it is composed, is practically a heating compress, as the effects induced are chiefly those of warmth and moisture.

When employed for the relief of constipation, and for indigestion in its various forms, the compress should generally be protected only by flannel, but should be covered sufficiently to secure prompt reaction.

When the compress is employed for the purpose of accumulating blood in a part, to produce a local therapeutic result it should be well protected with impervious material. This form of compress should be used for tubercular joints, over the painful part in neuritis, to promote the absorption of exudates, in catarrh of the bronchial tubes or bronchitis, and intestinal catarrh.

The well-protected compress applied to the abdomen is useful as a means of relieving insomnia by accumulating blood in the portal vessels. Applied

THE ABDOMINAL HEATING COMPRESS

to the legs, the heating compress diverts blood from the head and from all other parts above the legs.

There are several precautions which it is important to observe in relation to the heating compress. Great care must be taken to see that the compress is always warmed up quickly after the application. If the compress remains cold, the effect will be the opposite of that desired, and the patient will probably be injured instead of being benefited.

To encourage reaction, observe the following points: —

1. Wring the compress very dry. Only very strong persons can warm up a very wet compress.

2. Use cold or very cold water. The colder the water, the more promptly reaction will take place, provided the compress is not too thick, and is wrung very dry.

3. Do not make the compress too large. It should be just large enough to accomplish the purpose required. If the patient can not heat up a large compress, make it smaller the next time.

4. See that the compress fits the body tight at every point, especially about the edges. Wrinkles and air spaces should be carefully avoided.

5. Cover very warmly, drawing the dry bandages very smooth and tight, and making the edges extend at least an inch beyond the wet cloth on all sides.

6. In persons who do not react well, rub the surface to which the compress is applied, with the hand or with the hand dipped in cold water, until it has been well reddened, before making the application.

7. A fomentation of three to five minutes' duration may be applied to the parts before the cold application is made.

The heating compress is frequently applied at night, to be worn until morning. It is sometimes worn day and night, being renewed once or twice during the daytime. When it is thus worn continuously, the wet bandage should be boiled daily, and the surface treated washed with good laundry soap, to prevent eruption of the skin. Whenever the heating compress is removed to be left off for a time, the part should be well rubbed with the hand dipped in cold water.

J. H. K.

SCHOOL OF HEALTH SEARCH QUESTIONS

FATIGUE

1. What is the effect of active muscular exertion ?
2. Explain the cause of this.
3. Describe the fatigue following less vigorous and more prolonged exercise.
4. Can exercise be carried too far ? Give instances.
5. How much food is required by those engaged in mental work ?
6. What are the effects of the use of too much food in such cases ?
7. To what are sedentary persons subject ?
8. What proportion of the food eaten by a sedentary person is consumed in work ?

EXERCISES TO IMPROVE THE CIRCULATION

1. What is a good exercise for cold hands ?
2. Describe the " milkman's slap."
3. Give another exercise for warming up the hands.
4. By what exercises may cold feet be quickly warmed ?

THE HEATING COMPRESS

1. Of what does the heating compress consist ?
2. How many forms has it ?
3. Describe each.
4. What is the effect of each ?
5. What are some of the conditions in which each is useful ?

An Anti-Uric-Acid Diet.

Nuts, grains, and fruits constitute a uric-acid-free diet. All the foods that the earth produces are free from uric acid. There is not enough of it in any natural food to be productive of any possible harm. It is only when we eat forbidden food that we are likely to take in uric acid. By forbidden foods are meant flesh foods of all descriptions — the flesh of a hen, for example, or of the scavengers of the sea, in the shape of oysters, shrimps, lobsters, or crabs, or of anything else that lives in the water. Every dead animal contains uric acid. Simply leave out all corpses from your bill of fare, and you have nothing to fear from uric acid.

To live for common ends is to be common.
The highest faith makes still the highest man ;
For we grow like the things our souls believe,
And rise or sink as we aim high or low.
No mirror shows such likeness of the face
As faith we live by of the heart and mind.
We are in very truth that which we love,
And love, like noblest deeds, is born of faith.

— *Browning.*

THE MORNING BATH.

HOW the little birds enjoy their morning bath! See how they splash the sparkling drops all over themselves in a fine spray. Then they dry their feathers in the sunshine, and this keeps them beautifully smooth and glossy. If they need a little powder in making their toilet, they sprinkle themselves with dust.

What a strange bath pussy gives her babies! She uses her own tongue for a sponge, and licks them all over their furry bodies. Her tongue is so rough that it combs their fur at the same time, and cleans out all the dust and dirt. A great many animals wash their little ones in the same way. Perhaps you have seen a cow licking her calf all over.

An elephant takes a fine spray bath with his long trunk. He goes down into the water and draws some up through his trunk. Then he uses his trunk as a hose, and squirts the water all over his body.

What would you think of a dust bath to keep you clean? Yet this is what many animals, and even some people take. Have you not seen a hen sending a shower of dust all over her feathers? She enjoys this as much as you do a dip in the pool or a good shower bath. It is the only kind of bath she takes.

The Arabs, the followers of Mahomet, are very strict about keeping themselves clean. When they are traveling in a sandy desert, where there is no water, they strip off their clothes and rub sand or dust all over their bodies.

The ancient Spartans were a very brave, strong, hardy race of warriors. The only kind of bath their young people were allowed to take was a thorough rubbing of the body with dry powder.

If you look carefully at the picture on the next page, of a piece of the skin, many times magnified, you will see the reason for keeping the skin clean and for rubbing it thoroughly. The little coiled up tubes are the sweat glands. Through these some of the poison made in the body is poured out and gotten rid of. If they should be stopped up, this poison would be kept in the body, where it does a lot of mischief. At the roots of the hairs are little oil glands, that keep the skin well oiled, glossy, and smooth. If these can not act properly, the skin gets dry and rough.

The outer layers of the skin are made of little scales something like fish scales. These scales die, and new ones are constantly being made to take their place. Now, if these old dead scales are not gotten rid of, or if the skin gets very dirty, the sweat and oil glands are stopped up, and the skin can not do its work of getting rid of the poisons and protecting the body.

A thorough washing of the body with warm water and soap loosens all the dirt and the little particles of dead skin. Then they can easily be brushed off by a good rubbing of the body with a rough towel, which leaves the skin quite free and clean.

Besides this cleansing bath, a cold water bath should be taken every day. This keeps the skin active, and makes the blood flow quickly through the body to keep it healthy. It freshens and strengthens one, and makes him lively and active. After the cold bath, rub the skin all over until it is rosy red, and glows all over.

Healthy children love their cold morning plunge as much as the birds do, and it keeps them as happy and gay as these lively little songsters.

.. By the Editor ..

THE EFFECT OF HEAT AND COLD UPON THE NERVES

HEAT is inhibitory. It lessens the sensibility of the nerves, while cold increases their sensibility. Cold is simply a lesser degree of heat. They are not opposite things, but simply different degrees of the same thing. It is not because heat is absent that a thing is cold. It is because it has less heat than some other thing you have just been feeling. For instance: Take three glasses of water, one 40°; one, 100°; and one, 75°. Put a finger in the water at 40°, then put it in a glass of water at 75°, and it will seem warm. Put the hand in the water at 100°, and then in the other glass of water at 75°, and you will say it is cold. If two persons were to do this, one man would say the water at 75° is cold, and the other would say it is hot, when the temperature is just the same.

We have nerves which appreciate a lesser degree of heat, which are called cold nerves, and nerves which appreciate a high degree of heat, and they are called heat nerves. These heat and cold nerves have different relations in the body. Their reflex connections are different. When the cold nerves are stimulated, the result is to produce general excitation of all the functions of the body — the heart, the brain, and the nerves; in fact, every organ in the body, including the muscles, is excited. Suppose in the springtime you start to take your first bath in the lake. As your feet strike the water, your chest heaves and you make a deep involuntary sigh. You can not help it. Suppose somebody drops a little piece of ice down the back of your neck when you do not know it. Immediately you "catch your breath," because the cold excites the muscles of respiration.

In the same way cold excites every nerve in the body. It does it by stimulating the nerves of the body; by exciting those which contract the muscles. When a swimmer is in water for some little time that is too cold, he gets a cramp, because the nerves become so excited that they cause the muscles to contract spasmodically, or, as we say, produce a tonic contraction. This strong contraction draws the limbs up so that the swimmer has no use of them.

So, cold, if one is exposed to a chill for some little time, will produce shivering. Shivering is simply clonic contraction — the same sort of thing, only it is clonic instead of tonic; spasmodic instead of sustained contraction. Nature does this when one is exposed to cold, for the purpose of warming him up so as to produce heat. Heat is generated whenever the muscles contract. This heat warms the blood, so when a person has taken cold from a reduction of the temperature of the blood, which is the cause of taking cold, the exposure causes the nerves to excite the nerve centers. That sets the cells to contracting. Shivering warms up the person. There is always a fever after the chill. After the chill, the shaking and the shivering pass off; whether it is produced by cold or by malaria or in any other way, the result is the same. A man who went on an Arctic exploration some years ago found himself with his

company one day exposed to very severe cold. It was more than 40° below zero, and a strong wind was blowing. In his official account of the journey he says, "We sat down on a block of ice and shivered ourselves warm." That was an interesting illustration of how cold excites muscular contraction, and how the muscular contraction generates heat.

Cold excites not only the muscles, but also the glands. That is why, when a man has no appetite, his physician says to him, "Lie down for half an hour before dinner, and put an ice bag over the stomach." The ice bag over the stomach excites the glands of the stomach, causing them to pour out gastric juice; in other words, creates appetite. As Pawlow has shown, appetite means juice, and juice means appetite. If you have juice in your stomach, you will have appetite for food, because you have power to digest food; and if you have appetite, it means that there is juice in your stomach calling for food, ready to digest it, and all you have to do is to feed yourself.

The same thing is true of all the functions of the body. When your brain will not work, and you don't know what else to do, you bathe your face with cold water, and that wakes up your brain. This is because the cold nerves are connected with the brain in such a way that when cold is applied to them, they appreciate the cold, feel the impulse, and telegraph to the brain to wake up. The heart, liver, kidneys, lungs, and every one of the organs of the body receive similar impulses. They are all excited by the application of cold. So cold excites the nerves. If a nerve is painful or sensitive, and you apply cold to that nerve in any way, either dry or not dry, it increases the pain, because it increases the excitability of the nerve, and this aggravates the brain, which indicates a too great irritability. Heat, on the other hand, does exactly the opposite, has exactly the opposite effect.

MAJOR SEAMAN'S CRITICISM OF THE ARMY RATION

Major Louis Livingston Seaman, U. S. V. E., was sent out by the United States government with four other military men to accompany the Japanese army in the field as military attaches. At the recent International Congress of Military Surgeons held at St. Louis, Major Seaman gave an account of some of his observations. He spoke in the highest terms of praise of the Japanese hospitals, and of the efficient and skilled medical officers in charge of them; but it was the Japanese army ration which in his paper received the highest praise and most enthusiastic commendation.

Major Seaman declared that the diet of the soldiers is the secret of the marvelous success which the Japanese have won in their conflict with the Russians, and which has astonished the world. It is admitted on every hand that the Japanese soldiers have, in the great conflict which has been waging in the far East, accomplished feats which have never before been equaled in the history of military operations. This success Major Seaman attributes chiefly to the habitual diet of the Japanese soldier at home, and his ration in the field. The Japanese soldier, says Professor Seaman, "is supplied with a plain, palatable, easily prepared and easily digested ration that can be thoroughly metabolized and converted into the health and energy that makes the man who has it the ideal fighting machine of the world to-day."

As the result of a diet consisting of rice, beans, and other simple foods, as pointed out by Major Seaman, the percentage of deaths from wounds among the Japanese is exceedingly small, while death from diseases other than those attributable to wounds is almost unknown, amounting only to a fraction of

one per cent. The Major makes a strong contrast between the facts above stated respecting the high vital resistance of the Japanese soldier, and his almost absolute immunity from the maladies which ordinarily prevail in military camps, and the state of things which now exists in the ration of the army in Manchuria. In addition to the vicious diet, ill adapted to developing strength, energy, and ability to resist disease, the Russian Army is exposed to the destructive influence of forces even more deadly than Japanese bullets. "Arriving trains," says Major Seaman, "that should have been crowded with men and munitions of war, brought each a full complement of the demi-monde and *vodka*, the Russian liquor. Wine, woman, and song were certainly the undoing of Russia."

It seems very remarkable that the United States government should have sent only military students to study the operations of the Japanese army during this great conflict, one of the most notable of all history. Possibly the military officials were not conscious of how much might be learned from the splendid example of these intelligent, quick-witted, and, as yet, comparatively unsophisticated people. The experience of our own army during the Spanish-American War was such, however, as should have awakened at least an interest on the part of military men to learn of some better way of feeding and caring for soldiers in camp and on the battle-ground. Major Seaman gives his views of the present United States army ration in the following paragraph: —

"But what can be expected of a government that after its terrible lessons of 1898–99 still insists — especially in the tropics — on subsisting its army on a ration so rich and elastic — lovely term, that, elastic — that when in the emergency of war its elasticity is tested, it bursts its bands and is found to consist of pork and beans and fermenting canned rubbish that in six weeks prostrates fifty per cent of its 250,000 units with intestinal diseases, and sends 3,000 to their last homes, to say nothing of the enormous number invalided and the 75,000 pension claims; that holds its great life-preserving department in such light esteem that but one officer in the entire army can even reach the rank and emoluments of a brigadier-general?" This certainly affords food for serious thought.

The conflict in the Orient presents many points of interest aside from this strictly military character, which are well worthy of study; but none more important than that of the influence of diet upon human endurance and resistance to disease. The two armies are so evenly matched in numbers and in military equipment that the result ought to indicate particularly which is the better man, the Japanese or the Russian. At the present time there seems to be little doubt as to how this question should be answered.

DR. HAIG ON FLESH EATING

Dr. Alexander Haig, an eminent London physician, whose connection with one of the largest hospitals of London and whose position as a scientific investigator give great weight to his opinions, has definitely declared himself in opposition to flesh eating. Unfortunately, the majority of scientific men who have expressed opinions upon the subject of flesh eating have based their views, not upon scientific experiments, but upon the conclusions drawn from general observation and ordinary experience. That such conclusions are often wrong, is clearly enough demonstrated by the continual discovery of new facts and truths which have shown up the absurdity of notions and practices which have for centuries previous been current, and supposed to have a foundation in truth. The mere

fact that a custom has the sanction of antiquity and general belief, although presumptive evidence of truth, can by no means be set as an assurance of verity.

Modern scientific methods of research have placed in our hands the means for testing and probing questions such as the world has never heretofore possessed; hence, those who live to-day are responsible as no others have ever been for a careful examination into the foundations of all current beliefs, and for the elimination of error when discovered.

Dr. Haig has for twenty years or more been making most careful researches in relation to the influence of foods upon the vital operations of the body. His observations have often been made hour by hour, as well as day by day, and have probed deeper into the question of nutrition than those of any man who has ever lived before. The result of these observations Dr. Haig has embodied in a compendious volume of nearly one thousand pages. These researches have shown beyond possible question that flesh eating, the use of tea and coffee, alcohol, tobacco, and other poison habits are responsible for enormously reducing the longevity of the race. In the Professor's new (the sixth) edition of this remarkable work, which has perhaps done more to change the opinions of medical men upon this question than any other work which has ever been published, Dr. Haig expresses himself in a very clear and positive manner as regards the conclusions to which he has been forced by his observations. We quote a few paragraphs, as follows, as the best means of setting before our readers the latest dictum of science in relation to this question, which has come to be recognized as one of the highest importance in relation to human nutrition, and thus to human welfare in general;—

"What eleven years ago in the first edition was little more than possibility or probability is now absolute certainty, and a certainty which can be made visible to the untrained and unaided eye in a few moments.

"A friend recently brought into my room two people, one of whom was a taker of meat and tea, and the other an abstainer from them, and he said to me, 'Now you must tell me which is which without asking any questions.' The circulation test enabled me to do this correctly in a few moments. The abstainer had a quick circulation and a good color; the self-poisoner had neither.

"I have several times offered people £5 for every meat eater they could produce whose color and circulation would equal my own. I might have made it £50 or £500, for no one has made any money at it, or is ever likely to do so. There are practically no such meat eaters, with possibly a few exceptions in the highest nutrition periods of life. Such exceptions are not to be found among the boys of our meat-loving public schools; I saw two of them only the other day, and their circulation was twice as slow as mine, and their color only about half that of mine, and I have often had to treat schoolboys for anemia, a minor degree of the chlorosis from which their meat-eating sisters suffer so severely.

"It is now also obvious that most of those troubles which I began by calling diseases are not diseases at all, but mere results of food poisoning, and that numerous other troubles, though not directly caused by the poisons, are in many and important ways greatly aggravated by them.

"It is still impossible to compute accurately the real amount of either direct or indirect poisoning. This will only be possible when large numbers of people have lived on a correct diet for several generations.

"As these visible and tangible facts become more generally known and understood, and as large numbers of people see for themselves the results of abstaining from the poisons, a great change of habits will result, and those who do not

change or even go, as some are at present going, ever further and further in the fatal direction of poisons and stimulants, will have a vacant place, for Nature makes no bargains, and favors no compromises; she simply eliminates.

"The records made by such champions as E. H. Miles, Karl Mann, G. A. Olley, and others, within the past few years, bear eloquent testimony to the splendid results which may be produced in athletics by abstaining from the friction-causing poisons; and the condition of these record makers can be tested in a moment by the rapidity of their capillary circulation, as that is the record of the friction in the machine, and other things equal, that machine which has least friction will win.

"Those who consider that sluggish circulation, poor blood, defective cerebration, mental and bodily lethargy, and a life of almost constant pain and disease, terminating in the forties or the fifties, represent the *summum bonum* of human existence, can no doubt get the little they ask for; but it will soon be no longer possible for them to say that nothing better was known or obtainable.

"A stronger, more active, and more noble life lived for a hundred rather than for fifty years, and ending in a natural death which will be painless and unconscious as birth, is what knowledge of the truth promises to-day to all who dare to follow it, and to make this more quickly, certainly, and generally attainable, is, and has always been, the purpose of this volume, and it gives me great pleasure to see that it is fulfilling its object.

"Now, as before, I have to thank an ever-increasing number of fellow-workers, and many who, having experienced the benefits of the change of habits in themselves, are most anxious to spread the knowledge of these facts by every means in their power. For these and more there is room, for whole races and continents have to be influenced, and numerous as are the workers, the harvest is still too large for them; but hope in these and all directions is now, I am glad to know, changing into certainty."

Slaughter of the Innocents.

A study of statistics reveals the terrible fact that nearly one-half of all the human beings born into the world die before the age of five years. In the city of Stetten, Germany, nearly one-half — 473 out of every thousand — die during the first year of their lives. In Ireland, Scotland, Norway, and Sweden, where children are given better care, have more outdoor life, and more intelligent attention is paid to feeding, the number of deaths is only one-fiftieth as many as in the city of Stetten, being ten per cent.

Physicians are coming to recognize that the use of cow's milk which is infected with the germs of tuberculosis is one of the most active of all the causes of death among young children. This should be remembered in the artificial feeding of infants. The milk should be either boiled or well scalded before being fed to the infant. This rule should be universally observed for adults as well as for children, and, if applied, will save thousands of lives annually.

How Fried Foods Cause Dilatation of the Stomach.

Fried breads, griddle cakes, Saratoga chips, pastries, and all foods cooked with grease are very indigestible, for the reason that fat can not be digested in the stomach. Starch is digested in the stomach, but fat is not digested until it reaches the duodenum, where it comes in contact with the bile and pancreatic juice. When food has been fried, the starch is surrounded with fat, and the saliva and gastric juice can not get access to it. The same thing is true of the albumen of fried eggs. All foods saturated with grease are gastric-juice proof,

digestion proof. They lie in the stomach for hours, and the stomach wears itself out in the effort to digest the indigestible mass, which meanwhile ferments, decomposes, decays. This fermenting mass becomes a gas factory, distending the stomach, and actually forming bags or pockets in it. The stomach gets dilated and overstretched, and after a while loses the power to contract, and remains permanently in that condition.

How Much Should One Eat?

Not how much, but how little, ought to be the rule. Reduce the quantity of food until you reach the point where you begin to lose weight, then increase a little so as just to maintain the normal weight of the body. Anything more than this is surplus, and is injurious because the vital force which ought to be devoted to building up the body, repairing tissue, and keeping the blood free from poisons, is used up in disposing of this rubbish. Many persons who are using up a large part of their energy in disposing of surplus food, would gain in weight if they were to reduce the quantity of their rations one-half.

Sour Milk.

Sour milk and buttermilk are more easily digested by most stomachs than sweet cow's milk. It is a curious fact that the majority of people who take milk use it in the form of sour or curdled milk. All through Africa the native tribes using milk take it curdled. In most countries of Continental Europe sour milk is used very largely in preference to sweet milk.

You find it in nearly all the German stores; in Vienna and Berlin, sour milk is sold. In Constantinople one will often see a man with a great yoke on his shoulders, carrying a pile of pans of sour milk arranged one above the other, for people to buy. They call it *metju*, which means simply sour milk.

Sour milk is better than sweet for the reason that sweet milk forms curds in the stomach, especially when there is a large amount of acid there. If a person has hyperpepsia, the milk forms large tough curds that require a long time for digestion. If a person has hypopepsia, the milk is a long time in curdling, but it ferments, undergoes decomposition, and decays, and he is bilious after using milk a few days. When milk is taken in the form of curds, sour milk, or cottage cheese, it has already been curdled, and so does not form curds in the stomach, and if it is well chewed, it is very quickly digested.

Devil's Food.

The *Cooking Club*, under the above head, gives the following recipe:—

"Two cupfuls of brown sugar, one-half cupful of butter, two eggs, one-half cake of chocolate, one-half cupful boiling water, one-half cupful sour milk, one teaspoonful soda, one teaspoonful baking-powder, a teaspoonful vanilla, three cupfuls flour. Put baking-powder in the flour and soda in the milk."

This recipe seems to be rightly named. We can hardly imagine a better method of preparing men to enter heartily into the service of his majesty the Evil One than this concoction. If this recipe is intended to be used exclusively by the party whose name it bears, we have no objection. We would recommend those who have any particular interest in their welfare in this world or the next, or who desire to cultivate a good digestion and good morals, to leave this dish, together with similar concoctions, to be devoured by the party from whom they are named.

Physiology in the English Public Schools.

Sixteen thousand English physicians have signed a petition requesting Parliament to inaugurate systematic instruction in the public schools of Great Britain in relation to the preservation of health, especially in relation to the evil effects of alcoholic drinks. It is hoped that this petition will be granted.

. . . Question Box . . .

10,173. Cartilage System.—Mrs. K. W., New York: "What is your opinion of the Cartilage System? 2. Would you advise this treatment for curvature of the spine? 3. What is your opinion of the Cascara Bromid Quinin tablets for colds?"

Ans.—1. It is rank nonsense.

2. No.

3. We should never think of recommending this preparation.

10,174. Growth under the Tongue.—Mrs. R. Mc G., Minnesota: "The cords under my tongue swell, and a bunch the size of a bean fills with a bloody mucus. A similar growth was cured ten years ago by iodin treatment. It is not painful. Please advise."

Ans.— Consult a good surgeon. A slight surgical operation is probably required.

10,175. Fruit Juice — Bread — Eggs — Sanitarium Foods.—S. D. P., Minnesota: "1. Do you recommend fruit juice (unfermented cider) to be drunk daily instead of water? 2. If not, give reasons. 3. Should this cider be made from sweet, slightly tart, or quite tart apples? 4. Is it best kept sweet the year round by canning it, or by boiling it down first and then canning it? 5. What is the difference in the chemical analysis between grape and apple juice? 6. Is there any difference in the time of digestion of the same food between a weak and a strong stomach? 7. Should any food which is digested slowly be taken into a weak stomach? 8. Should fruit containing small seeds, as currants and raspberries, be taken with a weak stomach? 9. Should bread hot from the oven be covered to prevent the steam and gas escaping? 10. Are eggs wholesome? 11. What is the best way to cook them? 12. Are Sanitarium foods cooked by electricity?"

Ans—1. It is not necessary, but the practice is found in many cases beneficial.

2. There is no objection to the use of fruit juice in the manner suggested, especially if not sweetened with cane-sugar.

3. Any one of them.

4. The best method is to can it without boiling down, as the boiling down dissipates the natural flavor.

5. Grape juice has a somewhat higher nutritive value. Apple juice contains eighteen calories, or food units, per ounce, while grape juice contains twenty-five calories per ounce.

6. Yes. There is a very great difference.

7. No.

8. No. In eating such food, seeds and woody matter should be carefully rejected.

9. No. The bread should be well aired while cooling.

10. Yes, when fresh.

11. Hard boiled in water at about 180°. A good way is to drop them into boiling water, then take the dish off the stove, and allow the eggs to remain until they are well cooked. The whites should then be put through a vegetable shredder and ground fine. The yolks do not require shredding, but may be shredded with the whites if desired.

12. No.

10,176. Grains — Peanuts — Bad Taste in the Mouth.—"1. Is the gluten of dextrinized grains as nutritious and digestible as when cooked with moisture? 2. If bread is shortened with nuts and then baked until browned through, are not the nuts rendered indigestible? 3. Is it possible, by heating peanuts in an oven to a certain temperature, to render them indigestible? 4. Does a bad taste in the mouth immediately after eating indicate that fermentation has started in so short a time? 5. Why should chewing something, such as a piece of wood, and swallowing the saliva, prevent this? 6. Why should stooping wnen there is food in the stomach cause nausea and belching of gas?"

Ans.—1. Yes, if ground fine.

2. Overcooking may diminish the digestibility of food under the circumstances mentioned.

3. Yes.

4. No.

5. The free secretion of saliva cleanses the mouth.

6. The stomach is compressed by bending forward, and the gas is forced out.

LITERARY NOTES

THE whole matter, therefore, under present conditions, centers around the question of school feeding as part of the school work. I can testify to the wonderful change in the physique of the children — 1,200 in number — in the day industrial schools in Liverpool. In swimming competitions they have beaten every school in the city time and again, while in cricket, football, and other outdoor games they have been most successful. They all belong to the lowest strata of society and all live in slumdom. Fed three times a day by the late school board and now by the Liverpool city council, they manifest the benefits of good food regularly supplied.

Concerning the Manchester schools of the same type, it was stated by a witness that of the children who were physically unable to go through a course of drill on entry, only two per cent remained unfit after a few weeks' feeding. It was also declared that one could easily pick out the industrial school boy in the ordinary school after his discharge.

The remarkable feature about the Liverpool children is that, despite the fact that they return at 6:00 P. M. to their wretched homes, they all escaped being afflicted by recent epidemics of zymotic diseases, which was not always the case with other members of the family who were attending ordinary schools and were not fed. To me it is incredible that these children are made strong and healthy, while the girls in a London school for want of food are unable, to the tune of eighty per cent, to take part in a new scheme of drill, which had, perforce, to be abandoned. Ample evidence was produced by heads of schools that the mental powers of the children were enfeebled by want of food; and the whole situation was summed up by Sir Lauder Brunton when he said, in answer to an economic objection, that "there is no more danger in feeding children physically than there is in feeding them mentally." A great evil has to be met and at once, pending the day when royal commissions and departmental committees are formed to inquire into the bed-rock causes of these evils, and not their results. No uniform method of procedure is suggested in the report; but each local authority, once the question is taken up in earnest, will probably work on lines suited to its locality. — *Thomas Burke, in the January-March* **Forum.**

John Fox, Jr., in the February **Scribner's** tells a great many amusing anecdotes and interesting episodes of his recent journey through Manchuria on the trail of the Japanese Army. In the same number Thomas F. Millard discusses the future of the war correspondent.

The February **Woman's Home Companion** makes good the promise for the new year. Among the feature articles are: "The International Sunday-School Invasion of the Holy Land;" "Bread-Making the World Over;" "The Central Kitchen," a suggestive discussion of co-operative housekeeping; and "Ice-Yachting — The New Sport for Women." The Household Departments are as full, as suggestive, and as timely as ever.

"The New Philosophy." Published by the author, for complimentary distribution only. Arthur Crane, Room 447, No. 129 3rd St., San Francisco.

Although the author of this book states that the philosophy of which he treats "is ignorant of the soul and of those higher matters which belong to it," much of the book is practically a presentation of the doctrines known under the name of "Christian Science." While we believe that a sound mind is a healthy factor in maintaining a healthy body, we can not agree with the author's statement that disease, pain, and evil are mere concepts of the human mind. The health of the mind depends to a large extent upon that of the body, and both mind and body are thrown out of balance and brought into a condition of discord or disease by transgression of the laws of life. With some of the writer's statements, however, we are in accord. There is some good practical philosophy, for instance, in the following, from the chapter on "Modern Molechs:" —

"In some places the weather is a veritable idol. Lowering skies, cold winds, sleet, or fog exercise a greater power over mind than many a philosophic truth does. We forget that sunshine in the heart is more important than sunshine in the street, and that the dew of kindness occupies a more real place than dew on our lawns. In the same way the whirlwind within us finds out in a softer spot than an outward whirlwind could, and we come to see that the real weather is of the mind. He lives in the sunshine who has sun-

shine within, and he who realizes his inward weather ceases to care for the outward rain."

"How to Study Literature." By Benjamin A. Heydrick. Published by Hinds & Noble, 31–33–35 West 15th St., New York City. Price, 75 cts., postpaid.

Being the work of a successful teacher, this book, which grew up in the class-room, is practical in every detail. It is admirably adapted for use in schools, literary societies, and reading circles. Its aim is to enable the reader to ascertain for himself the chief characteristics of the books studied. The "List of Recommended Reading" is suggestive and helpful. It names the chief English and American authors, and designates the works which are fairly representative of each writer.

We have received from London a copy of **"The Temperance Record,"** the organ of the National Temperance League. Besides reports of conferences and the progress of the temperance movement in all parts of the British Empire, it contains much useful information and valuable articles on the temperance question. Prominent among these are, "The Children and the Drink," by Rosa Barrett, and a lecture by John T. Rae on "The Evolution of the Temperance Reformation," which takes us back to the first indications of drunkenness in the days of Noah, and the founding of the Nazarite and Rechabite total abstinence societies. Price, 25 cents. Central Temperance Book Room, London House Yard, Paternoster Row, London.

"Physical Education by Muscular Exercise." — By Luther Halsey Gulick, M. D., Director of Physical Education in the Schools of Greater New York, etc. Published by P. Blakiston's Son and Co., 1012 Walnut St. Philadelphia.

This book, which grew out of the exigencies of a lecture course, although intended primarily for physicians and educators, will be of interest and value to the general reader, also. It is divided into two parts, the first of which deals with Exercise and Development, showing the need for muscular work and the physiology of exercise. "The time is rapidly approaching," says the author, "when man must take consciously under his direction the matter of physical exercise, because the process of civilization is taking away from him those natural demands for muscular exercise which have been its efficient cause during the ages. The conditions of human life in civilized countries have changed more since the development of the steam engine than they had for thousands of years previously. The bulk of the heavy work in the civilized world is done by machinery, and not by human muscles."

The necessity for the intelligent direction of muscular exercise is shown in the following statement: "The position taken during exercise is of the greatest importance. If a person takes pulley-weight exercise with the spine in a forward position, the ribs depressed, and the chest flat, that very exercise will tend to make this position a permanent one; and yet this is exactly the position that uninstructed individuals commonly take in gymnasiums when doing pulley-weight work."

The latter part of the book explains the various systems of gymnastics and athletic sports, and considers their effects. The small volume is packed with valuable information on every phase of the subject of which it treats.

Books Received. "First Lessons in Food and Diet." By Ellen H. Richards, Instructor in Sanitary Chemistry in the Massachusetts Institute of Technology. Whitcomb and Barrows, Boston.

"The Art of Right Living." By Ellen H. Richards.

"True Greatness." An address by Albert E. Place.

Pamphlets Received.— "The Aseptic Technic of Abdominal Surgery with the Topographical Visceral Anatomy of Male and Female Abdomen"—Illustrated. By H. O. Walker, M. D., Detroit, Mich.

"Poisoning by Wood Alcohol: Cases of Death and Blindness from Columbian Spirits and Other Methylated Preparations." By Frank Buller, M. D., Montreal, and Casey A. Wood, M. D., Chicago.

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

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BATTLE CREEK . . . . . MICHIGAN

MUCH has been and is being written on the immigration question, which is one of the most important national questions before the American people. **"The Agricultural Distribution of Immigrants,"** by Robert DeC. Ward, calls attention to the evils resulting from the congestion of aliens in our large northern cities, and the menace to health, education, and religious training from the "Little Italys," "Little Russias," "Little Syrias," etc., in the city slums. The remedies suggested are "a considerable restriction of immigration; *and* (not *or*) the distribution of the slum population through the agricultural districts of the country." The reasons for these measures, and how they may most successfully be carried out, are discussed at length by the author of this pamphlet, which may be obtained from the Secretary of the Immigration Restriction League, 60 State St., Boston, Mass.

"The Bible Temperance Educator." Vol. XXIV, 1904. Published by the Bible Temperance Association, 2 Bellevista, Clifton Park Ave., Belfast. Price, 25 cents.

This periodical is edited by Rev. John Pyper, the venerable president of the Bible Temperance Association, of which it is the organ. The contents of this volume are especially rich, including articles from the most noted temperance workers of Great Britain and Ireland, as well as some of the leading workers in the United States. The primary

aim of the *Educator* is "the entire separation of the church from the liquor traffic." Incidentally, the tobacco habit and other sister vices of the drink curse are also dealt with. It is invaluable to all temperance workers.

THE International Publishing Association at College View, Nebr., have a few sets of the November issue of the German, Danish, and Swedish papers which should be circulated at once. The subscribers pronounce them the best religious numbers ever issued. Order a set for your German, Danish, or Swedish neighbor. A set will be mailed to any address for 10 cents.

Address the publishers or your Tract Society.

TEN DOLLARS IN PRIZES

A GENTLEMAN interested in the teaching of health principles to the public in the most attractive form, wishes to offer through our columns *ten dollars in prizes* for the best health rhymes, simple and easy, such as children would enjoy learning and always remember. The rhymes should be from two to four lines in length, the first part embodying a rule, and the latter, the healthful result.

The first prize will consist of five dollars; second prize, three dollars; third prize, two dollars. Manuscript will not be returned to unsuccessful competitors.

The contest closes June 1st.

CASH OFFERS TO WRITERS

Well-written stories, poems, or recitations showing the danger of the home-prescription of alcoholic liquors or patent medicines, or the evil results of the professional prescription of alcoholics, will receive good prices. Those not accepted will be returned to the authors if stamps to cover postage are enclosed. The shorter the stories, the more likely they are to be accepted. They should not exceed 2,000 words. All manuscripts will be examined and valued by an experienced committee.

Address all articles to Mrs. Martha M. Allen, 27 Broad St., Oneida, N. Y.

THE 20th CENTURY METHOD ILLUSTRATED

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DO you suppose we would be shipping Sanitarium Foods in $5 and $10 lots, direct from our factory to the homes of thousands of satisfied customers — with the number rapidly growing — if the plan were not practical?

Do you suppose the most intelligent and discriminating people — bankers, lawyers, merchants, clergymen, physicians — would send to Battle Creek for our health foods if they did not find the foods themselves satisfactory and this plan of buying them cheaper, more convenient and better in every other way than any other method?

Do you suppose we would have received hundreds of orders from persons whose friends have told them about the plan if it had not been worthy of unqualified commendation? Would you recommend a friend to try something that you had found a failure?

Do you suppose we would have received the hundreds of highly commendatory letters that have reached our office if there had been anything wrong with the plan anywhere?

Did you ever visit a bake shop when the white-capped bakers were taking a morning's baking from the ovens? Don't you remember even yet the delightful odor of the fresh bread and biscuits? That's just the way with our health foods, and you get them almost as soon as they are baked — just as quickly as we can pack and ship them. Taste good, wouldn't they?

Now, Mr. Reader, if you have answered these questions as we think you have, you are ready to sit down and write us for particulars and information about our trial order. Just snip off the coupon, write your name and mail it. We do the rest.

85

Battle Creek Sanitarium Co., Ltd., Battle Creek, Mich.

Gentlemen,—

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FOR 1904-5

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