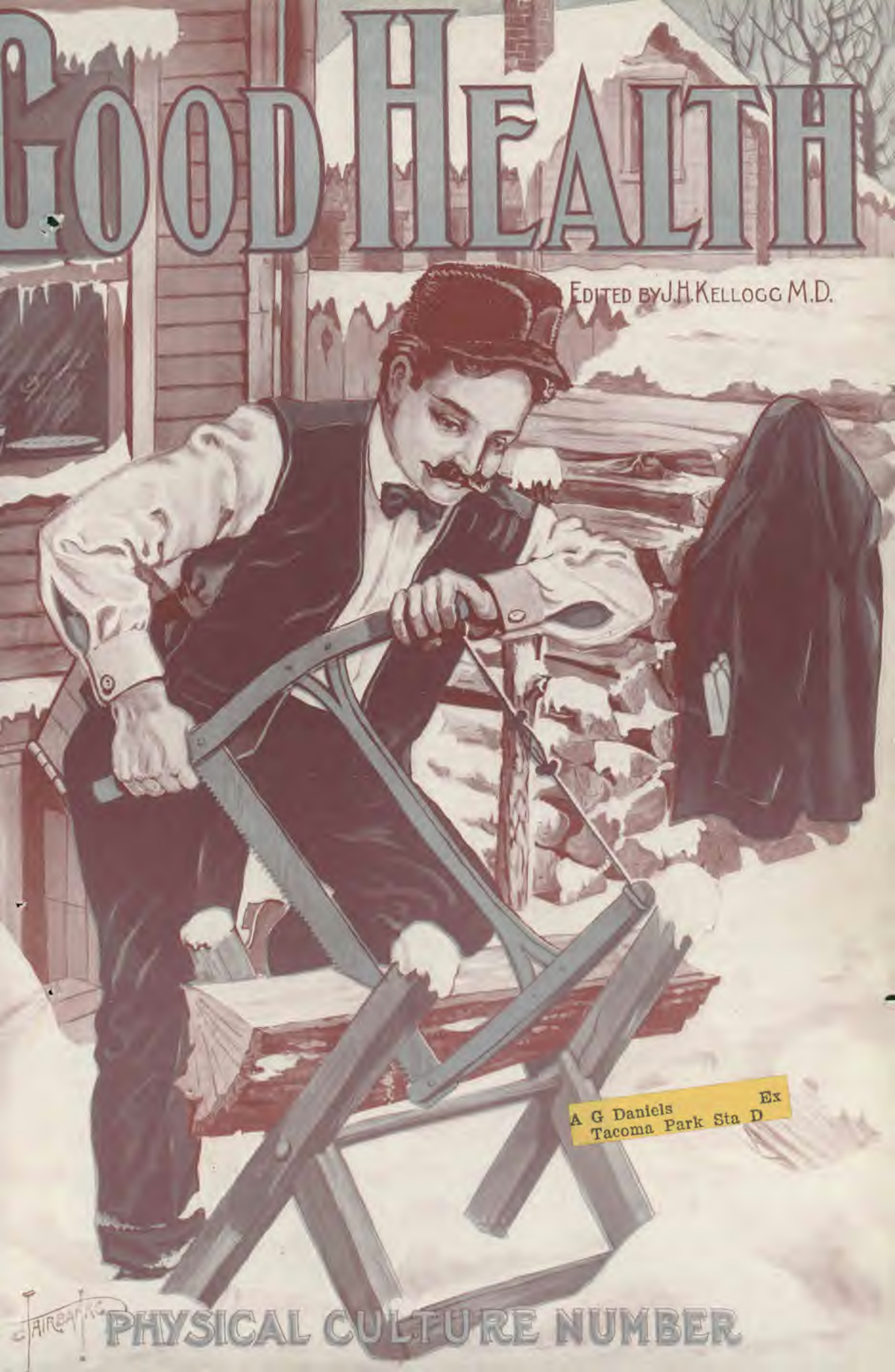
GOOD HEALTH

EDITED BY J.H. KELLOGG M.D.



PHYSICAL CULTURE NUMBER

CONTENTS

February, 1907

A beautifully illustrated article descriptive of the cooperative housekeeping enterprise established by Mr. Upton Sinclair, author of the famous book, "The Jungle," will be a feature of the 1907 Housekeeper's number of GOOD HEALTH, the April issue.

"Simple Life Biographies," by George Wharton James, being a series of articles about some of the most widely known simple-life advocates in the world, will be begun in an early number of GOOD HEALTH. Mr. James will write in many instances from personal acquaintanceship, and will tell about such people as Charles Wagner, Luther Burbank, John Burroughs, Joaquin Miller, John Ruskin, Bishop Huntington, and several others. GOOD HEALTH readers who are familiar with Mr. James' characteristic, forcible style of utterance and his unstilted descriptions, will appreciate the treat in store for them.

William Penn Alcott, representative of one of the foremost "vegetarian families" of the country, will write in the March number of GOOD HEALTH about his kinswoman, Louise M. Alcott, the famous authoress so dear to the hearts of boys and girls throughout all America. This will be followed by other articles about prominent members of this interesting family and their common-sense modes of living.

Any subscriber wishing an index for the 1906 volume of GOOD HEALTH to complete the volume for binding purposes will be supplied upon request.

Entered at the Postoffice at Battle Creek, Mich., as second-class matter, by the Good Health Pub. Co.

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PURE AIR AND EXERCISE

GOOD HEALTH

HOME-HEALTH MAGAZINE

Vol. XIII FEBRUARY, 1907 No. 10

The toast most often heard when medical men banquet together is this: *"Woman: God's best gift to man AND THE CHIEF SUPPORT OF THE DOCTORS."*

Why Is the American Woman An Invalid?

According to the report of the Chicago city health department for the current week, one-third of the population of that city is sick. Much the larger proportion of these are women.

Gynecology has come to be one of the most important and lucrative specialties in medicine. It is well known to physicians that sterility is rapidly increasing among women, especially in the older-settled portions of the country. This is especially true in the cities.

An eminent physician who has made careful study of the subject, brings statistics to show that *nearly one-third of all the mothers of New England are unable to nurse their children.* This fact is a proof of the physical degeneracy of these mothers—a form of inherited invalidism.

Recent statistics gathered in England show the birth rate in that country to have decreased most alarmingly within the last decade. The same thing would be very evident in the older portions of this country were it not for the fact that the birth rate is kept up by the constant importation of healthy peasant blood from foreign countries.

That women are not naturally so much weaker than men is well shown by the facts in relation to the women of semicivilized or barbarous tribes. For example, Stanley tells us that the best porters that he found in Africa were women.

A traveler in a deep valley of the Alps some years ago made a geological collection, and, there being no road out of the valley which could be traveled by a horse or a donkey, called for a porter to carry out his heavy load of rock fragments. He was told that no man could be found who could carry his collection, and that if he wished a porter for such a purpose, he would have to employ a woman. This he did. The load was lifted by two men and poised upon the head of a sturdy woman who marched up the steep mountain paths over the pass and down on the other side without injury to herself or her burden.

One of the early explorers of the Northwest relates how that on a certain expedition into the mountains in which he was accompanied by a number of Indians, the old chief remarked to him as they were about to start, "We will

have to have some squaws to go along to drag the baggage." The men had not the endurance sufficient for such an arduous task.

The women of Tasmania, when that country was first discovered, were found to be much more enduring and nimble than the men. It was a common thing for a native woman to stand upon the edge of a cliff many feet above the sea, and, spying a fish in the waters beneath, dive into the water like an otter, and catch it with her hands. These same women would climb up the tall gum trees, presenting bare trunks for seventy-five to one hundred feet, to catch opossums in the top, with the agility of apes or squirrels.

Travelers in Patagonia tell us that the women of that country are almost equal in size, and quite equal in endurance, with the men. The same fact has been observed with reference to most savage tribes. In civilized countries only are women recognized as "the weaker vessel." Careful dynamometric tests show that the strength of the average civilized woman is just half that of the average civilized man.

That women have naturally as great vitality as men is shown by the fact that although more boy babies are born than girl babies, at the end of the first five years of life, of a thousand boy babies born the number alive is less than the number of girl babies alive out of the same number. It is not to be believed that mothers take better care of girl babies than of boy babies; hence, it is evident that girl babies have at least as much vitality as boy babies, and ought to enjoy as good health. But before reaching the age of twenty the males are again ahead.

What are the influences which produce this reversal of relationships? There are doubtless many. We will mention only a few of the most patent and potent.

Man is naturally an outdoor dweller. The women, as well as the men, of primitive tribes live mostly in the open air.

Women live much more indoors than do men. The indoor life with the numerous artificial and unwholesome conditions which it imposes, is a powerful factor in lowering the vitality, diminishing the power to resist disease, and besides, maintaining a continual contact with conditions productive of disease. The human constitution is naturally so hardy that it endures the unwholesome conditions of civilized life better than that of almost any animal that could be selected.

A COW shut indoors as most women are usually dies of consumption in four or five years.

Monkeys and most other wild animals deteriorate rapidly in captivity, because of the deprivation of the fresh air and sunshine to which they are naturally adapted.

Civilized women are almost compelled to live sedentary lives. This fact accounts in large degree for the almost universal invalidism among them.

MUSCULAR EXERCISE IS ESSENTIAL FOR HEALTH.

Civilized women, especially those of the better classes, do not have enough muscular exercise to keep them in normal condition. Much of their work is done in the sitting position. The chairs in which they sit are so badly shaped as to be necessarily productive of deformities, such as posterior curvature of the spine, flat chests, and, in consequence, a weak and relaxed condition of the abdominal muscles.

The corset contributes to these same deformities, weakening the muscles of the trunk, and giving rise to displacements of various internal viscera.

Scarcely a woman twenty years of age can be found who is not suffering more or less from the displacement of some important internal viscus. The stomach is an inch or two lower than it ought to be. One or both kidneys are more or less displaced.

In older women who have borne children, it is almost impossible to find one who is not suffering seriously from visceral displacement. Displaced and floating livers, floating kidneys, enteroptosis, or prolapse of the bowels, are disorders almost universal among civilized women thirty years of age and upwards who have borne children, and are to be found in many women at a very much earlier age.

The consequences of these deformities are extremely grave, as pointed out by Professor Glenard, of France. Neurasthenias, autointoxications, premature decay of the vital powers, even such dreadful maladies as tuberculosis, Bright's disease, dropsy, and even cancer of the stomach and other organs may be traced directly or indirectly to these internal deformities resulting from the sitting position and the habitual wearing of the corset or tight lacing.

Some years ago, with an audience of young women, not girls, but teachers, mature young women in a western normal school, the writer raised the question, How many of the young women present are as strong, healthy, and enduring as their mothers? *Only two ventured to raise their hands.*

The young women of the rising generation do not compare in vigor with those of the generation preceding them. This fact is apparent to every observing physician. The decaying health of women is unquestionably one of the fundamental causes of race deterioration and degeneration.

This downward tendency will never be checked until women appreciate the importance of health culture, and the necessity for a good physique in order to perform the duties of wife and mother.

The average woman is scarcely better prepared to pass safely through the perils of motherhood than to undertake a boxing bout or a trip to the polar regions.

Femininity alone does not qualify a woman for motherhood. Good digestion, a vigorous liver, strong muscles, steady nerves, pure blood are essential conditions for the welfare of the mother as well as of the child.

The opprobrium of the almost universal weakness, nervousness, and feebleness among the members of the gentler sex will not be erased until women give more attention to the cultivation of personal health and the observation of health principles in their homes.

Simple food, eaten with reference to health requirements and not as a means of pleasure chiefly, some hours of appropriate exercise outdoors every day, proper clothing day and night, sleeping under conditions which permit the constant breathing of cold air, conservation of vital energy, the avoidance of all extravagant and unnecessary expenditures of nerve strength and vitality in fashionable dissipation or in other ways,—these are a few of the essential methods by which women may conserve their health, and may help to stem the rising tide of degeneracy which is hastening the race toward sure extinction.

EXERCISE AND THE "EYE OPENER"

The Important Office of the Cold Morning Bath in the Regular Physical Culture Program

BY BENTON N. COLVER, M. D.

(Illustrations specially arranged by the writer.)

AN eye-opener is an excellent day-opener. Not the time-honored tipple, but a cheery Good Morning from Mother Nature. Even the most vigorous man gets up with a momentary lull preceding the buckling down to the day's routine. Those of less energy find this yawning, stretching period extending into a very stupid feeling for half an hour or longer. At length the entire body bestirs itself, and the man is truly awake, ready for the activities of life.

This is the condition which calls for some sudden, intense stimulant to rouse each sleepy cell to its duty. The morning "glass" hits the spot. The delicate linings of the mouth, throat and stomach wake up to the fiery draught and cry aloud. The man is awake—the eye-opener is effective. But alas! with what results? To do this simple task a quantity of deadly poison has been thrown into the body. To-morrow morning the residue of this poison has the man so benumbed that he must needs have another and possibly stronger dose to scourge himself into wakefulness and stir up a pang resembling an honest appetite. Who has not seen the baneful results in a few years of such drugging? The promised cure has been only a deception and the end results totally bad.

The natural means is either a short, brisk exercise or a vigorous cold bath, or, better still, a combination of both. The morning bath is not primarily

Second movement in arm flinging: Hands carried outward at shoulder height, with a sharp contraction of the arm, shoulder, and back muscles.

for cleanliness. Its objects are to stimulate each secreting gland of the body; to awaken the large muscles to their task of heating the body; to call upon the heart and blood-vessels to quicken the blood flow and force into circulation the slumbering white blood cells; to increase the lung expansion and air intake; and to arouse each nerve cell to a realization of the new day.

Arm flinging: (Position at start and close of exercise) After the second movement, the hands are returned to the first position by a sharp contraction of the arm and chest muscles.

If these objects are accomplished, the man is evidently very much awake. The cold bath will do them all. But "cold bath" is by no means a very definite term. A proper application for one person would well-nigh overwhelm

Drying the back with a vigorous towel rub. Exercise is thus afforded for the arm, shoulder, chest, and back muscles.

"Third degree" cold bath, including face, neck, chest, and abdomen in a brisk, cold rub.

his weaker neighbor. The bath can be graded in three ways. First, by varying the temperature of the water used. Water of 90 degrees F. is cool and from there to 50 degrees F. the intensity of action is rapidly increased. Second, by regulating the time consumed in bathing. A rapid (fifteen seconds) cold rub may be just right for a certain case, while a more prolonged rub or spray or even immersion or swim would be proper in another. Third, by increasing the surface of the body covered. Every one has experienced the reviving effect of a cold face bath. For one having used only this diminutive bath, a gradual increase of area can be made as follows: First, extend the application to the entire neck (front and back), in a day or two include the chest, then at intervals of from one to five days, add other areas, as the abdomen, back, arms, legs. One can judge from the feeling of exhilaration or chilliness following whether or not the bath has been too severe.

Other factors (than these three) which determine the value of the bath are the temperature of the air of the room, the amount of evaporation from the skin permitted before drying, and last, but not least, the vigor with which the body responds to this stimulus. This response is best insured by vigorous exercise. The exercise may precede the bath, and thus prepare the body for the cold application; or, it may follow, and so promote the reaction of the bodily forces. Step quickly from a warm bed (in which the temperature is as high as a midsummer day) to a short, brisk cold rub, properly graded by the three rules before given. Then don the clothing rapidly and follow with five to fifteen minutes of indoor or outdoor exercise. The vital current will be set to flowing with a vigor which will last for hours.

Another view of the towel rub. This may be utilized, first wet to give the cold rub, and then dry to insure reaction and give exercise.

Running in place: The same spring is made as in running, only the body is hurled upward instead of forward. Stand on the toes and ball of the foot with bent knee.

HYGIENE FOR WINTER SHUT-INS

Not All the Evil from Air Contamination and Kindred Causes Is Confined to the City, Slums, and Tenements

BY KATE LINDSAY, M. D.

THE great family of shut-ins is enormously increased during the cold season of the year. There is also a notable increase in contagious disorders due to infections which flourish among those classes subjected to the evil effects of overcrowding and bad air. It is a common mistake to attribute all the evil effects of air contamination from overpopulation to the city tenement and to slum districts. All these conditions may be found in the country, the city suburbs, and our smaller towns and villages, especially in winter. In Great Britain, statistics show that the mortality rates increase with the number of persons living in one room, and that the country death rate for such families exceeds the city death rate of families living in four- or five-room houses, although it is never so great as in the one-room homes of the city poor.

In the summer in the country and where houses are not overclose, there is always the possibility of relieving the overdensity of the small one- or two-room home of many members by an overflow into the yard. In winter, however, the chief object of life in many families is to keep warm, and the women and children are practically shut in for the cold season, growing pale and anemic from lack of fresh air, and cultivating the germs which are the exciting causes of respiratory disorders.

Of all who suffer from this winter imprisonment, none fare worse than the little ones under five years of age. All day long they play on the cold kitchen or living-room floor, subjected to cold drafts from the basement and under the doors, often in damp or even wet clothing, and in the dirt which all the older members of the family bring in on feet and garments from outside. If there is a coal, gas, or an oil stove filling the air with carbonic acid gas, the children suffer from breathing this foul compound more than do their parents or older brothers and sisters. Add to this the odors from cooking, washing, and other housekeeping operations; in many cases the fumes from tobacco; and perhaps the danger of infection from a tubercular member of the household, and it is easily explained why there are so many infants with enlarged, suppurating glands, and why the winter death rate from broncho-pneumonia is so high during the first five years of life. The nasal growths and enlarged tonsils which are responsible for so much mouth breathing and the cause of great physical and mental depreciation, are also usually acquired at this age from infection of the nasal passages with germs from foul air.

Besides the small children of the home, there are the mothers and other female members of the family; often, besides, there are chronic invalids in

the home who choose to imprison themselves more or less in the foul air for the winter. At night the air is rendered still worse by the return of the workers from barn, field, office, shop, or school.

Often the only way of heating the seven-by-nine bedroom with its two, three, or more occupants, is from the kitchen or living-room stove. If the bedrooms, as is often the case, are on the north side of the house, where no sunshine ever reaches them, their walls become coated with the condensed vapors from the other rooms. All through the hours of sleep the close, damp air of these sleeping-rooms grows worse and worse, because the inmates are adding to the atmospheric impurities the exhalation wastes from their own bodies. The foul air of the living-room in the country home is just as detrimental to the health of the family as is that of the congested tenement in the city. Those who leave the home for the day's work of breadwinning, or the children who go to school, suffer less, as a rule, from indoor confinement during winter, especially if the worker is employed out-of-doors. The wood-chopper and the farmer have clean air to breathe for at least some hours of the day, but indoor workers and school children often get only the brief respite afforded them in going and coming from the various places of employment. Factory, shop, and office are alike more or less closed against either exit of foul air or inlet of pure air. If the trip to and fro is made in a close car or an omnibus, even this transient relief from impure air is denied them. To lessen the evil of winter imprisonment is one of the problems which confronts the sanitarian in all localities of the nation. The poor sufferer, the wealthy city resident, and the well-to-do suburbanite—all more or less contract winter disorders due to inhaling foul air.

To stamp out consumption and treat pneumonia, bronchitis, and other foul-air infectious disorders, no method of treatment has succeeded like the fresh-air cure. The little ones who can not breathe even in the modern so-called well-ventilated hospital, begin to breathe easier and recover when taken out-of-doors. Surely, if out-of-door air will cure a case of pneumonia which is to human appearance hopeless, why should not the same agent prevent the disorders in the uninfected? In other words, why wait until the little ones are dying before giving them fresh, clean air? It is time the inventor was using his skill to produce a portable pen for the babies, which might be elevated above the foul air and dirt of the floor, and be adjustable to various heights, with a fence high enough to keep in the most wide-awake youngster, at least up to two years old, and roomy enough to give a chance for healthful, unrestrained exercise. Those with means could build an out-of-door nursery with adjustable screens like the Japanese, who live in their gardens through the day, or by removing their adjustable walls, turn house and garden into one. For the cold days there could be some means of heating, and the screens could be closed on the side from which the wind is blowing. On every sunny winter day the little ones could frolic in the sunshine and fill their lungs with fresh air and be snugly wrapped up for their day's nap in the open air.

Dr. and Mrs. Sitz, of Harvard, are bringing up their baby in the open air in a box on the window-sill. There are many suggestions in their experiment of some form of sleeping apartment which might be hung on the wall by

hooks, or to the porch roof like a bird cage, or made portable to fold up through the day. In these couches the little ones could be wrapped up snug and warm and spend the night in the open air, even in cold weather.

The delicate, bloodless tubercular patient can be made to sleep comfortably out-of-doors. Surely it must be possible to find even in small, crowded houses, means for out-of-door sleeping whereby the little ones can breathe pure air and avoid infection from inhaling that which is unclean. The adult can help himself, but the children must be planned for. The bedclothes should be adjusted so that they will not be thrown off, and some means invented for keeping the outside sleeping cot moderately warm. The author has tried some experiments suggested by fireless cooking, and finds that two rubber bags holding two quarts of water each at the boiling point, and put in cases of flannel of four thicknesses each, the cases being warmed before drawing onto the bags, will keep an ordinary single bed warm until morning, or for eight or ten hours. The cases prevent overheating and heat loss at first, and also lessen the danger of burning. Some means of heating for children should be devised in which any accident would be impossible.

No doubt the measures for keeping warm when sleeping in the open air will be improved upon when there is a demand for heating apparatus for out-of-door winter sleeping-rooms. May we not hope that soon a pressure of the button when we are ready to retire, will turn the electric heat safely on our out-of-door couches where a thermometer will indicate the proper temperature for sound sleeping, and when that is reached, it will turn itself off? Why not be able to do as much for the baby as the poultry raiser does in hatching incubator chickens? Are not the human little ones worth more than these? And is not their welfare an all-important matter for the future welfare of the nation? Why not expend a part of its present great wealth in improving the coming American man and woman morally, mentally, and physically?

SKIING—A POPULAR WINTER SPORT

A Few Facts Regarding This Fascinating Exercise Which Has Been Brought from Scandinavian Lands to America

The sport in its native land where the mountains are high and opportunities endless.

ONE of the most popular of winter sports in countries where deep snow covers the ground for long periods during the winter months is skiing, the antiquity of which reaches back to the vikings. The ski is somewhat different from the snow-shoe, but is used for a similar purpose—that of facilitating progress over thoroughfares of snow and ice. The snow-shoe is broad and short, well suited for walking over comparatively soft snow, while the ski is long and narrow, and its operation of moving is by a series of glides much like skating, without lifting the foot from the ground. A writer in a contemporary magazine says:—

"The runners are usually made from hard pine or ash, and are from six to ten feet in length. They are about a quarter of an inch thick and from two to four and a half inches in breadth. The ski is curved upward at the toe and to a lesser extent at the heel, in order that it may not catch in the snow. It is attached to the foot a few inches back of the center by means of toe-strap and thongs.

"In Norway, skiing is the occasion of great gatherings for competitive sport. In February of each year contests are held at Holmenkollen and Frognersacteren, near Christiania, and the competitors run, jump, and slide upon their skiis in the presence of thousands of spectators. They will slide down a slope at great speed and then

take a flying leap. Four years ago a jump of 134½ feet was made. This sport is, of course, exceedingly dangerous to those unfamiliar with the ski, as no little practice is necessary to enable a man to govern himself perfectly upon these long, slippery strips of wood, which, on inexperienced feet have a strong tendency to become hopelessly tangled. The long-distance run is generally about twenty-six miles, round trip. The jump is from a take-off erected midway down a sloping hillside, and when the sliding skiman reaches it, he stoops, rises in the air, and must, to be successful, land on his feet and keep his equilibrium to the end of the course.

"In the northwestern part of the United States, where there are many descendants of the hardy old vikings, these sports are also gaining popularity, and skiing tournaments are common."

A Tournament in Full Swing.

WHAT WE OUGHT TO DO

Three Things of Importance Which Should Be Observed by Every Aspirant for Perfect Health.

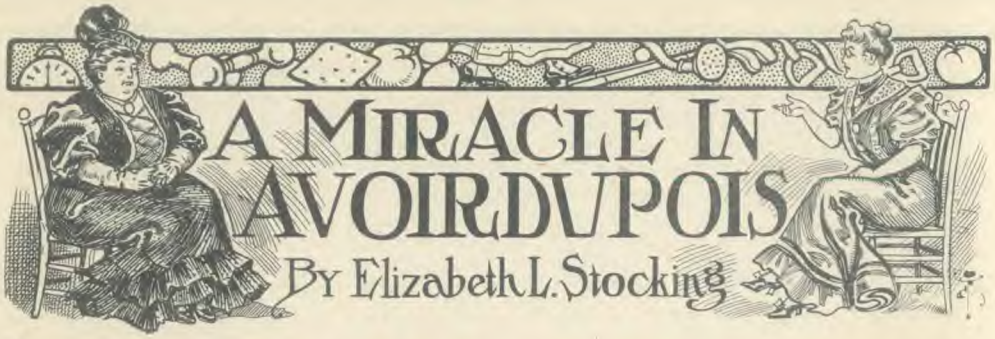
As the old prophet Isaiah exhorts us, we must "cease to do evil and learn to do well." We must cease to sow the seeds of disease and decay, and sow the seeds of health and restoration. We must repent, and "do works meet for repentance."

Specifically, here are the things which we must do: —

1. Return to a natural diet of fruits and nuts and well-cooked cereals and vegetables, eggs and milk in moderation, excluding meats.

2. Live in the open air, sleep always in open-air bedrooms, and provide ample pure air for living-rooms and workrooms.

3. Exercise the muscles abundantly to keep nutrition high, appetite and assimilation good.



A Miracle In Avoirdupois

By Elizabeth L. Stocking

"IT'S all because I am so stout," sighed Mrs. Arabella Fitzhugh-Brown. "I would like to belong to clubs and do church work and go into society, as other women do, but that is out of the question. The things that I positively must do, use up all the energy I have!"

"Then we can not count on you to assist at the club's bazaar?" inquired Dr. Millicent Hastings regretfully. She was an energetic little lady, and it was her private opinion that Mrs. Fitzhugh-Brown was "just lazy."

"I am afraid not," said Mrs. Fitzhugh-Brown. "If I were only small like you, then I would do things too. It is a great affliction to be so large, Dr. Hastings!"

Dr. Millicent Hastings was provoked.

"Why don't you diet?" she asked somewhat sharply.

"It wouldn't do any good," replied Mrs. Fitzhugh-Brown. "It is natural for me to be stout, and stout I must be to the end of the chapter."

"Mrs. Fitzhugh-Brown," said Dr. Hastings with energy, "if you will excuse me for saying so, I do not believe that is true at all. I think it is quite possible for you to be materially reduced in flesh."

"I am sure I would go through a burning fiery furnace, if it would do any good," said Mrs. Fitzhugh-Brown plaintively.

"It need not be so bad as that," said Dr. Hastings relaxing into a smile, "but if you will place yourself in my hands for several months,—say a year,—and do just exactly what I tell you, I will promise to help you. Come to my office at ten o'clock to-morrow morning, if you care to try it."

Mrs. Fitzhugh-Brown went to Dr. Hasting's office at ten o'clock as requested. The doctor's directions were simple but exacting. Mrs. Fitzhugh-Brown had been accustomed to sleeping late, and taking a leisurely breakfast of perhaps coffee, muffins, and fried bacon, about the middle of the morning.

"Nora," she said to her maid on the evening after her visit to the doctor's office, "you may call me at seven to-morrow. Also attach the shower to the cold-water faucet in the bath-room."

"At sivin, did yez say, mum?" inquired Nora incredulously.

"Yes, at seven, Nora," replied her mistress firmly.

"And the *cold*-water faucet, is it mum?"

"Nora, are you becoming deaf?" asked Mrs. Fitzhugh-Brown severely.

"No, mum," said Nora, retreating hastily.

"And Nora, tell the cook I want to see her," called Mrs. Fitzhugh-Brown.

Nora sought the cook, her eyes big with excitement.

"Cook, misthress is up-stairs deminted, and is afther wantin' to see yez!" she exclaimed.

"Demented yourself," returned the cook, who was used to Nora's "flightiness."

"What did she say to yez?" inquired Nora breathlessly on the cook's return.

"Said she didn't want no breakfast to-morrow but Graham crackers and apples and nuts," replied the cook stolidly.

"Howly saints!" cried Nora, "I knew it! Poor soul, she's took lave of her mind!"

"Shut up your foolishness!" returned the cook, who was very loyal to her mistress, and of a phlegmatic disposition not easily surprised. "If Mrs. Fitzhugh-Brown wants to eat nuts, I guess she's got a right to."

After waking her mistress the next morning, Nora hovered about the hallway near her door, pretending to do some dusting. Sounds of splashing, interspersed with an occasional groan or sigh, indicated the progress of the morning bath.

"Poor thing, she'll get pneumony sure," said Nora to herself.

Pretty soon, a thump, thump, thump, was heard, as of something hard striking against the floor. Nora, with visions of murder, suicide, and sudden death, flew to the door and pounded on it.

"O, Mrs. Fitzhugh-Brown, what, in the name of Hivin, is the matter?" she gasped.

"Those are only my dumb-bells, Nora," explained Mrs. Fitzhugh-Brown. "Go down-stairs at once, and attend to your work."

"She called thim *dumb*-bells," related Nora to the cook afterward, "and she makin' enough noise wid thim to rouse the dead!"

Mrs. Fitzhugh-Brown came down-stairs with more color in her cheeks than had been seen there for many a day, ate her frugal breakfast, and sat down to read the morning newspaper.

Dennis, the coachman, stamped into the kitchen, singing a snatch of an Irish love-song, and peering about to see what Nora was doing.

"Hist, ye spalpeen!" warned Nora from the pantry. "Ye'll be afther disturbin' the misthress. She's down-shtairs and had her brikfast, and Dinnis," she added in a whisper, "she's been actin' so quare like, I'm afeard she's gone daft."

"Fudge!" commented the cook from the kitchen sink.

"There's others as has gone crazy, but it's just from love," said Dennis sentimentally, following Nora into the pantry, "and it's to be pitied they are."

"Thin, let thim go to the lunatic asylum, where they belong!" retorted Nora. "Yez better go an' see if the misthress is riddy for her drive instid o' botherin' around and hinderin' me in me worruk."

Dennis retreated crestfallen to the sitting-room to learn his mistress' pleasure.

"I will not drive this morning, Dennis," Mrs. Fitzhugh-Brown informed him. "I am going for a walk instead."

Dennis's surprise overcame his discretion.

"Howly saints!" he muttered under his breath.

"Dennis," said his mistress, "why do you stand there mumbling like an idiot? Go and attend to your duties. If the horses need exercise, you can let them run in the yard."

"Women is quare cratures," philosophized Dennis, as he shambled out to the stable. "Misthress or maid, there's no ondershtandin' of 'em!"

Meanwhile, Mrs. Fitzhugh-Brown

prepared to take a morning "constitutional."

"I wish servants weren't so inquisitive," she complained to herself. "I can't do a thing in my own house without being spied upon. And now I must go to be weighed, and I suppose those store clerks will be as annoying as the servants."

As Mrs. Fitzhugh-Brown turned to look back at her house after descending the front steps, she caught a glimpse of one of Nora's eyes peeping out from behind the parlor curtains.

"Two hundred twenty-five pounds, ma'am," announced the grocer's clerk with ostentatious politeness, as he adjusted the scales to determine Mrs. Fitzhugh-Brown's weight, and it was only after her departure that he poked the other clerk in the ribs, and said he'd "bet the scales was busted!"

This was the beginning of a new life for Mrs. Fitzhugh-Brown. Everything was to be done in exactly the opposite way from that in which she had been accustomed to doing it all her life. Exercise, energetic and strenuous, and rigid diet, were the order of the day. Alas for the hours of comfort and the "flesh-pots of Egypt!" All fried things were excluded; also much bread and potatoes, because they were fattening; pastry and sweets were not to be so much as thought of. Boiled eggs, some few vegetables, fruit and a small amount of nuts, made up her bill of fare.

"It all depends upon your 'staying' qualities," Dr. Hastings had told her. "You must keep it up day after day, week after week, and month after month."

Mrs. Fitzhugh-Brown realized the necessity for this injunction during the second week. It had been rather exciting at first, to do all these unusual things, but when the novelty wore off, she found that it would be more than easy to slip back by degrees into old habits.

Dr. Hastings had given her a picture of a stately, graceful woman, with the comment: "This is your ideal. Attain to it!" Mrs. Fitzhugh-Brown hung this up in her bedroom, and it often happened that when she felt tempted to inglorious ease, she would suddenly notice the eyes of the lady in the picture fixed reproachfully upon her, and she knew that Dr. Hastings would look at her in just that way the next time she visited her office, if she failed to come up to requirement.

She went every week to be weighed. Soon the scales began to show a "bearish" tendency. One week, they recorded 220 pounds; two weeks later, they had dropped to 212. The clerk who weighed her, gradually grew less facetious about the condition of the scales after her visits. In fact, before long, he began to take as much interest in the result of each week's weighing, as a trader in stocks might over the condition of the grain market, and always looked concerned, when an occasional slight gain was indicated instead of a loss.

One week, Mrs. Fitzhugh-Brown did not come at all to be weighed. She was away visiting friends in the country, and alas! country butter and cream proved too enticing. On her return, the "bulls" were rampant,—she had gained five pounds! The grocer's clerk looked as downcast as Mrs. Fitzhugh-Brown herself.

"Too bad, ma'am," he observed sympathetically.

Mrs. Fitzhugh-Brown returned to her home, determination written in her face. During the following week, the

penance performed by a repentant nun is light compared with Mrs. Fitzhugh-Brown's restrictions upon herself, and when, on Saturday, the scales recorded a drop of seven pounds the clerk could not repress his emotions, and exclaimed: "Bully for you, ma'am!" Mrs. Fitzhugh-Brown tried to look at him severely, but signally failed, and smiled instead.

In three months she found that all her dresses had to be taken in. Dressmakers had always been her despair, and vice versa, but now, as she was no longer an impossible subject for the art of the modiste, her dressmaker waxed eloquent in praise of the change in her figure, and in advice as to the gowns which should be made for her.

"Ah, madame," she exclaimed, "in two, tree months, eet ees ze form of ze Venus de Milo zat you vill haf. I vill make you ze superb gown like ze Countess of Mentiglione wear at ze reception to ze president. Ah, madame vill be,—what ze Americain call it?—yes, swell!"

Mrs. Fitzhugh-Brown yielded in part to madame's entreaties, and had some very handsome new dresses made.

Acquaintances began to notice the difference in her appearance, and make characteristic comments.

"Missis says she'll be down in a few minutes, mum," said Nora one day to a caller. She added confidentially: "She's havin' her face mashed."

"What!" exclaimed the lady, staring at Nora in amazement.

"Well, mum, Oi'm not sure that's just the roight worrud, but there's a woman up-shtairs that kapes a-rubbin' her face, and ivery little while, mum, she gives it a punch!"

"O I see," said the caller visibly relieved, "your mistress is having her face massaged."

"Yis, mum, sure that's it," assented Nora.

When Mrs. Fitzhugh-Brown came down-stairs and greeted her, the caller, who was a woman of pessimistic nature, exclaimed dolefully:—

"O Mrs. Fitzhugh-Brown, how you have failed!" And most of her conversation during the visit dealt with people who had gone into declines, and gradually faded away. Mrs. Fitzhugh-Brown felt depressed after she left, and wondered whether she was really carrying her physical culture too far. The next caller, however, restored her spirits by remarking cheerfully:—

"Why, Mrs. Fitzhugh-Brown, I never saw you looking so fine before!" Whereupon Mrs. Fitzhugh-Brown's heart was warmed into a confidential chat on the subject of her various weight-reducing experiences. The visitor, in turn, expatiated on some of her hobbies, and before she left, had persuaded Mrs. Fitzhugh-Brown to join a woman's literary club.

Life certainly was assuming new and interesting phases for Mrs. Fitzhugh-Brown. As time went on and avoirdupois decreased, she became absorbed in many things. She grew active in church and charitable work; social functions began to appeal to her; she even took to horseback riding.

At the end of eight months, she sought membership in the "Riverside Golf Club." The president of the Club had not seen Mrs. Fitzhugh-Brown for some time, and when the lady's name was proposed, the expression on the president's face was a study.

"I—I do not think I quite understood the name," she stammered.

"Would the member kindly repeat it?"

"The name," repeated the member in question, "is Mrs. Arabella Fitzhugh-Brown."

"O—ah yes, excuse me," said the president confusedly. "Ladies, we will proceed to ballot for Mrs. Fitzhugh-Brown."

When Mrs. Fitzhugh-Brown, having been duly elected a member, glided gracefully into the room, attired in a jaunty outing costume, and receiving the welcome and congratulations of the members, the president understood.

Several months after Mrs. Fitzhugh-Brown's entrance into the Golf Club, plans were laid in the city for a grand entertainment to be given for the benefit of the "Osler Home for the Superannuated." All the beauty and society of the town looked forward eagerly to it. Every fashionable dressmaker was kept busy preparing the gowns to be worn at this function. One of the features of the affair was to be an elaborate grand march, led by the mayor of the city. Now the mayor was a bachelor, and great was the speculation as to who would be the fortunate lady selected as his partner. It was not a matter to be decided simply by the mayor's own whim, but must be determined, after due deliberation, by the committee on arrangements.

"There is a lady," stated a member of this committee at one of its important sessions, "who has, of late, taken a very prominent interest in the affairs of the Home. She has given her personal attention to the work, and contributed money to carry it on. She is also a fine-looking woman, and one who would grace such an occasion. I therefore propose that Mrs. Fitzhugh-Brown should assist the mayor in leading the grand march."

The other members proved to be in accord, and as Mrs. Fitzhugh-Brown gave her assent, the matter was settled, and preparations went on apace.

Among the spectators at the entertainment was a neighbor of Mrs. Fitzhugh-Brown's, Mr. Happington, who had been traveling abroad for a year. He had not seen Mrs. Fitzhugh-Brown since his return. Dr. Millicent Hastings happened to sit next to him. The sight which met their eyes was a brilliant one. From the ceiling of the hall were draped festoons of bright-colored bunting, interspersed with American flags. Groups of palms and flowering plants partly hid the platform, where the musicians sat, and were banked at intervals about the sides of the room. Up and down the brightly lighted and gorgeously decorated hall, wound a procession of ladies in beautiful costumes and their attendant knights. They marched and countermarched, formed figures and wheels of brightly moving color, separated and met again, while ravishing music and the fragrance of many flowers held the senses captive in a dream of delight.

At the head of the procession could be distinguished the genial, fine-looking mayor, and by his side moved a queenly woman attired in royal purple.

"Who," inquired Mr. Happington of the Doctor, "is that superb woman?"

"That," she replied, "is Mrs. Arabella Fitzhugh-Brown."

"The shades of your grandmother!" ejaculated Mr. Happington.

"I do not see why my simple statement should cause you to be disrespectful to my grandmother," said Dr. Hastings, inwardly much amused. "That certainly is Mrs. Fitzhugh-Brown. She is president of the New Idea Woman's Club, interested in all kinds of charitable work, and one of our society leaders. She is athletic, too. You ought to see

her ride a horse or handle a golf stick."

For the remainder of the grand march, Mr. Happington's replies to the Doctor's remarks were most incoherent, not to say idiotic, and ever and anon he broke forth into exclamations such as:—

"Mrs. Fitzhugh-Brown! Jehoshaphat! Mrs. Arabella Fitzhugh-Brown! Well, I'll be blessed!"

During the evening, Dr. Hastings continued to watch, with pride, the graceful, well-proportioned figure of Mrs. Fitzhugh-Brown, as she moved at ease among the guests.

"Reduced to 145 pounds: she weighed 212," murmured the Doctor under her breath.

She had forgotten Mr. Happington's presence, and was looking raptly at Mrs. Fitzhugh-Brown, while in her eyes shone the triumph of an artist who gazes at a completed masterpiece.

PURE FOOD AGITATION ABROAD

Deplorable Conditions of Uncleanliness and Impurity in Bakeries and Slaughter-houses of France and England

ACCORDING to cable despatches recently received from Paris by leading newspapers of this country, the people of France and Germany have little reason to complain of their treatment by Americans in the matter of impure foods, for the reason that their native food supplies are even more open to criticism than any which they have imported. A leading Paris paper, *The Matin*, says the *Chicago Tribune*, "characterizes as thieves those who have been selling oleomargarine as butter, shop sweepings as pepper, horse meat as lark pie, and, as assassins those who have been selling skimmed milk as an antiseptized article and thus robbing mothers and murdering infants, the latter to the number of 50,000 a year.

"The paper says that of the 38,000,000 French people, 33,000,000 have known no protection against the food adulterators, who have enjoyed a liberty which has been nothing less than charming. Even the thieves often have flirted with the assassins, while the latter always are thieves also."

The Prussian government medical department has recently issued a report respecting the bakeries and slaughter-houses in Berlin which shows a most disgusting state of things in that country. "Many of the butchering establishments were located in cellars, where cleanliness was impossible, and others had no place for employees to wash themselves.

"The inspectors found particularly objectionable conditions in the bakeries. In one town boys kneaded the dough with their feet, and one bakery was occupied by cats and hens. Another baker's oven served, *ad interim*, as a goose pen."

From the above it appears that the disposition of men and corporations to make money by adulteration of foodstuffs is not confined to America. The probability is that the same evils which have been pointed out in this country are prevalent everywhere.

WHAT RESTING WILL DO FOR US

The Repair of Wasted Energy and Broken-down Tissue Takes Place During Sleep—Effective Work Demands Adequate Rest

BY DR. LUTHER H. GULICK

GROWTH is predominantly a function of rest. Work is chiefly an energy-expending and tearing-down process. Rest following work is chiefly a building-up and growing process. Work may furnish the conditions under which subsequent growth may occur, but in itself it is destructive. By work we do things in the world, but we do not grow by work. We grow during rest. Rest is not the only condition of growth, but it is one of the essential conditions.

We seek concentrated food. We seek concentrated reading; the day of the three-volume novel is passed. We demand that the world's news shall be epitomized. We demand that our writing shall be taken down in shorthand and written by machine. We demand that business shall be done by telegraph, telephone, or wireless. We demand that our expresses shall travel fifty miles an hour, or more, and that while on the expresses, we shall be able to economize time by having stenographers and libraries. We read on the cars. The habit of reading during meals is growing.

All these concentrated activities, these ways of doing more work in less time, of shortening the period between thought and action, between the conceiving of an idea and its working out into the real world—or perhaps more truly the visible world, because the real world is the thinking world—make immensely for world achievement. But they tend to dwarf the individual by sapping his power.

I might caricature this aspect of the times by taking a splendid frame and then pasting on some neutral background within this frame pictures of the world's masterpieces. The pictures should be fitted as closely as their forms permitted. They should be cut in outline, so that no picture had a background. Every bit of background should be fitted with some other picture. Every inch of space should be economized by filling it with some beautiful, worthy thing. In a frame measuring three by four feet, I could have a large fraction of the world's masterpieces in representation. But it would give me neither happiness nor any true conception of these masterpieces, for none of them would have setting or margin.

Proper setting and proper margin are essential to every work of art. So if life's work and life's thinking are to result in growth, they, too, must have their margin, their proper setting, their opportunity for assimilation.

During the day the chief work of the body is done, but during the night the tissues grow more than they do during the day. At night the food is worked over, the muscles are built up, the brain tissue is restored, the exhausted nerve cells become refilled, and their crinkled borders become smoothed and rounded. This is margin, this is setting.

The process is not less necessary with

reference to mental work. The student who spends all of his available time in the acquiring of facts, misses the chief end of study. Wisdom does not consist in a knowledge of facts, but in their assimilation—just as art does not consist merely in form and color, but also in margin and setting. Our facts need assimilation. They need to be worked over into the tissues of our mental life. The daily emotions, the struggles, the ideals that come to us need to be worked over into the self. This occurs chiefly during quiet, during rest. The man who has no quiet and no rest assimilates relatively little. A man's experiences must be turned over and thought about. A man's ideals must be dreamed over and dreamed out.

It may be true that sleep bears somewhat the same relation to mental growth that it does to physical growth, and that thus partially or even entirely in an unconscious way the facts of daily life are worked over into the tissue of character. It is certainly true that we often awake in the morning after a good night's sleep and find problems solved, the mental atmosphere clarified in a way that is altogether surprising, and which is apparently not to be accounted for merely by our being more rested. We know that the brain is not wholly inactive during sleep. We know that there are psychic processes going on of one kind or another. I do not know what direct evidence could be procured to prove or disprove this hypothesis. It does seem, however, to fit in with very many well-established and otherwise not adequately explained facts.

The best work that most of us do is not begun in our offices or at our desks, but when we are wandering in the woods or sitting quietly with undirected thoughts. From somewhere at such times there flash into our minds those ideas that direct and control our lives, visions of how to do that which previously had seemed impossible, new aspirations, hopes, and desires. Work is the process of realization. The careful balance and the great ideas come largely during quiet, and without being sought. The man who never takes time to do nothing will hardly do great things. He will hardly have epoch-making ideas or stimulating ideals.

Rest is thus not merely in order to recuperate for work. If so, we should rest only when fatigued. We need to do nothing at times when we are as well as possible, when our whole natures are ready for their final product. We need occasionally to leave them undirected, in order that we may receive these messages by wireless from the Unknown. We need to have the instrument working at its greatest perfection, be undirected and receptive. I am not advocating a mystical ideal.

The fundamental characteristic of youth is growth—happy, continuous growth. Is not the reason why so many of us look back to youth as the period of greatest happiness because it was the time of greatest growth? I think that the people whom I know as most happy in middle and advanced years are those persons who have kept on growing.

The as yet relatively little known researches of Cajal and Flechsig have shown us that the tangential fibers of the brain may continue their growth at least through middle life, and it appears also that these fibers are in some way directly related to intelligence. Most people seem to stop growing soon after they become twenty. Other people keep on growing for varying periods. The duration of life's growth is governed partly by heredity and it is partly under

our own control. Growth is limited by forced work without rest and margin. It is promoted by wholesome living. It is interfered with by routine work without a break. We must do unhabitual things if we are to grow.

All this may seem like the statement of an impossible ideal. It is not. There will come weeks and months when every ounce of strength and every moment of time must be spent on the accomplishment of certain things. But when this is a man's constant life, when it occurs month after month and year after year, then it indicates that the work has mastered the man. The man is no longer the master; he is the slave. It means that his growth and his capacity to do larger and larger things are prevented.

I know men as secretaries of Young Men's Christian Associations, as college physical directors, as the owners or directors of immense corporations; I know women as housewives and mothers of large families, who have preserved this balance between work and rest so that they have continued growing, so that their ideals have enlarged from decade to decade, so that their response to life has been even larger. But with these people there has been a clear comprehension of the tremendous tendency of the time away from margin, away from rest, away from balance. They have set their faces like a flint and have not allowed the immediate pressure of the moment, the drag of the deadly detail, to so chain them down as to prevent their moving toward the far larger and more important ideal that is farther in the distance.

A dime held close enough to the eye will shut out the whole world. The small duty close at hand may shut out all visions, all ideals. The great ideals are never near. The small duty is always with us. There are always things to be done. In order to achieve the greatest which is within each one of us, we must balance between the small duties which could never be completely done, had we ten times our present time and strength, and the distant ideals. We must be able to say to the immediate and small: "Stand back! That is your place. This is the time for rest, for margin, for assimilation, for growth."

Rest is as important as work. Dreams must precede action. Concentrated art is not art, and the acquiring of facts is not growth.—*World's Work, December, 1906.*

I pray you, O excellent wife, not to cumber yourself and me to get a rich dinner for this man or this woman who has alighted at our gate, nor a bedchamber made ready at too great a cost. These things, if they are curious in, they can get for a dollar at any village. But let this stranger, if he will, in your looks, in your accent and behavior read your heart and earnestness, your thought and will, which he can not buy at any price in any village or city. Certainly let the board be spread and let the bed be dressed for the traveler; but let not the emphasis of hospitality lie in these things. Honor to the house where they are simple to the verge of hardship, so that there the intellect is awake and reads the laws of the universe, the soul worships truth and love, honor and courtesy flow into all deeds.—*Emerson.*

THE WINTER WOODS

AT the gates of the forest the surprised man of the world is forced to leave his city estimates of great and small, wise and foolish. The knapsack of custom falls off his back with the first step he takes into these precincts. . . . Here we find Nature to be the circumstance which dwarfs every other circumstance, and judges like a god all men that come to her. We have crept out of our close and crowded houses into the night and morning, and we see what majestic beauties daily wrap us in their bosom. . . . The tempered light of the woods is like a perpetual morning, and is stimulating and heroic. The anciently reported spells of these places creep on us. The stems of pines, hemlocks, and oaks almost gleam like iron on the excited eye. The incommunicable trees begin to persuade us to live with them, and quit our life of solemn trifles. . . .

These enchantments are medicinal; they sober and heal us. These are plain pleasures, kindly and native to us. We come to our own. . . . We never can part with it; the mind loves its old home; as water to our thirst, so is the rock, the ground, to our eyes and hands and feet. It is firm water; it is cold flame;

what health, what affinity! Ever an old friend, ever like a dear friend and brother when we chat affectedly with strangers, comes in this honest face, and takes a grave liberty with us, and shames us out of our nonsense. Cities give not the human senses room enough. We go out daily and nightly to feed the eyes on the horizon, and require so much scope, just as we need water for our bath. There are all degrees of natural influence, from these quarantine powers of Nature, up to her dearest and gravest ministrations to the imagination and the soul. There is the bucket of cold water from the spring, the wood fire to which the chilled traveler rushes for safety—and there is the sublime moral of autumn and of noon. We nestle in Nature, and draw our living as parasites from her roots and grains. . . .

It seems as if the day was not wholly profane in which we have given heed to some natural object. The fall of snowflakes in a still air, preserving to each crystal its perfect form; blowing of sleet over a wide sheet of water, and over plains; the waving rye-field; the mimic waving of acres of Houstonia, whose innumerable florets whiten and ripple before the eye; the reflections of trees and flowers in grassy lakes; the musical, steaming, odorous south wind, which converts all trees to wind-harps; the crackling and spurting of hemlock in the flames, or of pine logs, which yield glory to the walls and faces in the sitting-room;—these are the music and pictures of the most ancient religion. . . . We penetrate bodily this incredible beauty; we dip our hands in this painted element; our eyes are bathed in these lights. . . . I can no longer live without elegance; but a countryman shall be my master of revels. He who knows what sweets and virtues are in the ground, the waters, the plants, the heavens, and how to come at these enchantments, is the rich and royal man.—*Emerson's Essay on Nature.*

Do Something

If the world seems cool to you,
Kindle fires to warm it!
Let their comfort hide from you
Winters that deform it.
Hearts as frozen as your own
To that radiance gather;
You will soon forget to moan
Ah! the cheerless weather!

If the world's a "vale of tears,"
Smile till rainbows span it;
Breathe the love that life endears—
Clear from clouds to fan it.
Of your gladness lend a gleam
Unto souls that shiver;
Show them how dark sorrow's stream
Blends with hope's bright river.

—*Lucy Larcom.*

CENTER MARKET

BY HARRY B. BRADFORD

THE Center Market at Washington, D. C., is the largest retail market in the world. It is built of brick, and occupies two large blocks between 7th and 9th Sts., N. W., just south of Pennsylvania Avenue. Its lower or ground-floor is occupied with general market produce of every description, while its one other story above is devoted to an elaborate, cold storage plant, in which almost anything from an egg up, may be "preserved" (till the price advances high enough to make sales worth while).

On the market days (Tuesday, Thursday, and Saturday) many country wagons are backed up to the sidewalk curb, their contents of produce arranged on temporary stands on the sidewalk, by which the producers (in most cases) stand and endeavor to exchange their goods for cash.

That great display of various market supplies of every description produces various impressions on various people. As I walk down one of the broad, central isles, a delightful fragrance greets me, and I rarely pass by the beautiful flower-stands without stopping to drink in more of that attractive perfume — meanwhile, almost envying the black-eyed, brown-skinned Italian who can spend so much time in such an atmosphere, selling what *everybody* loves.

Then I make a turn in my walk—and, what a contrast! On either side I see the spaces packed closely with split-open, hanging carcasses of cattle, sheep, and hogs; some decorated with bunches of flowers, as if for their funerals. On the counters are laid out for inspection many fowls with slit throats, or headless, and younger chickens split in half (side sectional views) and decorated with heart, liver and gizzard, still retained as worth eating.

On another counter there are piles of pig heads, tails, feet, and stuffed stomachs, large and small intestines stuffed with no-telling-what. Lungs, livers, and windpipes are hanging as decorations on the next stall, and on

the counter are stretched out beef and sheep tongues, and those large glands so subject to disease—the livers.

The next stand is not much better, as there are crabs and lobsters by the box and barrel, all struggling and crawling over one another, or packed in ice, awaiting a more cruel death than fate and a depraved humanity deals out to other animals—namely, that of being boiled alive!

As I glance at that disgusting, horrible mass of mutilated animals and their internal organs spread about, I often wonder if there is anything too repulsive for human beings to eat!

But at the extreme southern end—a very appropriate location—we come to the fruit-stands, and Oh, such fruit! Even the look of it is appetizing, and while any child would naturally shrink from the gore and butchered animals of the other stands, he would stretch out longing hands for these luscious "King" apples, Bartlett pears, Malaga grapes, egg plums, Delaware and Georgia rosy-cheeked peaches, as well as many other wholesome eatables.

Here is nothing which offends the senses. Everything is pleasing, pure, and wholesome. Here is the rich reward of the husbandman without bloodshed, pain, and cruelty. Here are natural foods for the Children of Nature: the foods which make the purest blood, the healthiest and most beautiful bodies. Here are the foods for which man's system is *especially* fitted; which will purify, upbuild, and strengthen the whole body, and drive out disease. Here are the foods passed by by many an invalid whose depraved palate and unnatural instincts cause him to seek *first* that for which his whole system is unfitted; that which befouls his blood, spreads disease through his body, and stupefies his brain.

If every invalid would once thoroughly try *natural* foods, no argument would be needed to convince him as to their great value and superiority over dead flesh of all kinds, the legitimate fare of wolves, jackals, and vultures.

When men get through likening their anatomy to a dog or a hog, they may turn from the fare of those animals, and exchange misery and disease for happiness and health.

Snowflake

Out of the bosom of the air,
Out of the cloud folds of her garments shaken,
Over the woodlands brown and bare,
Over the harvest-fields forsaken,
Silent and soft and slow
Descends the snow.

Even as our cloudy fancies take
Suddenly shape in some divine expression,
Even as the troubled heart doth make
In the white countenance confession,
The troubled sky reveals
The grief it feels.

This is the poem of the air,
Slowly in silent syllables recorded;
This is the secret of despair,
Long in its cloudy bosom hoarded,
Now whispered and revealed
To wood and field.

—*Longfellow.*

SCHOOL GAMES HERE AND ABROAD

Comparison of College Sports in English and American Schools Made by a Wisconsin Educator

BY M. V. O'SHEA

Principal of the School of Education, University of Wisconsin

THE feature of English education which impresses an American student more favorably than anything else, perhaps, is the importance attached to athletic training in the great schools, and the provisions made therefor. It is inspiring to one who believes that well-trained muscles are essential to a well-balanced mind to visit any of the so-called "public" schools, such as Eton or Rugby, and observe how *all* the boys engage in wholesome, developing games and sports, which are regarded by the masters as a regular part of school training, and which are required in much the same way as Latin or mathematics. The masters themselves play cricket and other games with the boys, and in this way teachers and pupils are brought into closer and usually more vital and helpful relations than could ever be had in the class room alone. At Eton I saw the head master, Mr. Lyttleton, who was a famous cricketer as a collegian, training a cricket team, and for the moment he was just one of the boys, but more skilful than any of them.

At Oxford and Cambridge the men appear to participate in games far more generally and systematically than do our university students. The various colleges are provided with spacious grounds for cricket, football, and tennis, and it seemed to me that most, if not all, the students were interested practically and wholesomely in one or another of the games. Athletics in England have not run into professionalism as they have in America, thus destroying their value for the majority of students. The entire athletic spirit in English colleges is more wholesome and rational than with us. And the result seems apparent in the healthy tone among the students. Nothing is probably quite so good for boys and young men as a reasonable amount of systematic indulgence in games which they enjoy. Body, intellect, and morals are all affected favorably thereby.

The English girls in several private schools which I saw give about as much attention to cricket as do the boys at Eton, and the result is marked in the superior physical development of the girls. English girls of fifteen, say, seem conspicuously better developed physically than our own girls of this age. Several of the teachers in the great St. Leonard's School for girls at St. Andrews, Scotland, said they had given the matter particular attention, and had concluded that English girls are much stronger physically than their American sisters; and one reason for this is that the former live a more natural and healthful outdoor life. I saw the girls in this school playing cricket and tennis every afternoon as regularly as they attended classes during the mornings. Everything about the school suggests simplicity in dress and food, and a generous amount of time each day spent in the open air in free, unconstrained play.

And these girls come mainly from the aristocratic homes of Great Britain.

The writer feels strongly that American teachers should on every suitable occasion impress upon the patrons of the schools the necessity of providing opportunities for wholesome games for all school children. In most states in our country this could be easily accomplished if the need for it were generally appreciated. Here, in the Old World, some of the great cities are tearing down whole blocks at immense cost and establishing playgrounds. Let it be added here that a good playground, properly supervised, is one of the greatest aids to wholesomeness and good discipline in any school. It is, at the same time, of inestimable service in the physical, intellectual, and moral development of boys and girls.— *National Congress of Mothers' Magazine.*

THE REAL CURE FOR CANCER

Significant Observations by Dr. Nicholas Senn upon Return from Primitive Africa

DR. NICHOLAS SENN, of Chicago, a surgeon of international fame, has recently returned from a tour among the primitive people of central Africa. One of the most interesting observations made by Dr. Senn is the infrequency of cancer among the simple people whose conditions he has been studying. The following remarks by Dr. Senn recently made to a newspaper reporter are both interesting and important because of the evidence they give that it pays to lead the simple life.

"Cancer is a disease of civilization primarily, and it is a disease of over-indulgence," said Dr. Senn. "The disease practically follows the flag. I have found in my travels that primitive peoples are immune to it.

"I was in the arctics last year, and I found no cancer among the Eskimos, and now I found none among the aborigines of Africa. I found twelve cases on the East Coast among the blacks, but those people were mixed with white blood.

"The way for civilized man to avoid cancer is to imitate the life and diet of the primitive peoples of the earth. Lead simple, natural lives, with not too much mental strain, and with enough physical exercise to keep the body in good health. This is particularly true of fleshy persons, because they usually are more predisposed to carcinoma than thin people.

"One prolific source of cancer among women is the high-strung, unnatural life they lead in the great cities. All sources of irritation should be removed and the simple life should be substituted.

"Another thing in civilized society to be fought with vigor is hypernutrition. I emphasize these points because cancer is nothing more nor less than an extraordinary development of tissue due to overnutrition.

"We are working to find some way of starving these tissues and when we find the way, cancer can be cured. It can be cured now if it be taken in time. If the slightest suspicion exists, a patient should be willing to undergo an exploratory operation in order to learn the truth. Should it be a case of cancer, it can be cured under those conditions.

"Warts and moles are dangerous things to carry around. I have seen black moles develop into the most virulent cases of cancer. Warts and moles should be removed as soon as possible. While I don't object to women having them removed by the so-called beauty doctors, that is not the best way to have it done. The removal should be done by a surgeon."

WORK VERSUS PLAY

A Study of the Physiology of Muscular Exercises of Both Classes The Superiority of Labor

BY PAUL ROTH, M. D.

VOLUNTARILY or not, we constantly take from the hands of the Giver of all good gifts those things which we call the "necessities of life." In breathing the breath of life into man, by which he became a living soul, the Creator did not force life upon him, but, that man might enjoy life to the fullest extent, he gave him a part in the maintenance of life in himself. Proper attention in matters of eating, drinking, exercise, rest, cleanliness, or any "duties" for the promoting of life and health in our bodies, were not entrusted to us for the purpose of making life burdensome, but rather to make it attractive and desirable. Every such duty, therefore, should become a sweet enjoyment, not overindulging in one to partially or completely neglect another, for Nature allows of no substitute.

Something is wrong with the man who loses proper enjoyment and desire for food; for work or exercise; or for rest and sleep, or even for a bath. And something is decidedly wrong with the man who would rather smoke than eat, or who prefers a glass of whisky to a good meal.

The loss of healthful habits and of that legitimate desire for good things, on the one hand, and the formation of wrong habits and the creation of an appetite for injurious substances on the other, are among the first unmistakable indications that one has started in the way of disease and unhappiness.

Every one knows that good digestion is primarily and above all dependent upon appetite. The normal desire for food is the result of a very complex work wonderfully performed in our bodies, and a good appetite is a guarantee that the system is ready and able to take care of such foods as are adapted to the individual, provided, of course, they are partaken of in a normal and sensible manner.

What is true of digestive work is true of other bodily functions, and is true of muscular work. Physical exercise performed against any inclination or desire for it, if not always injurious, will no better contribute in the degree that it should to the maintenance of health and vigor, than will food taken without

What is the Matter with the Boy?

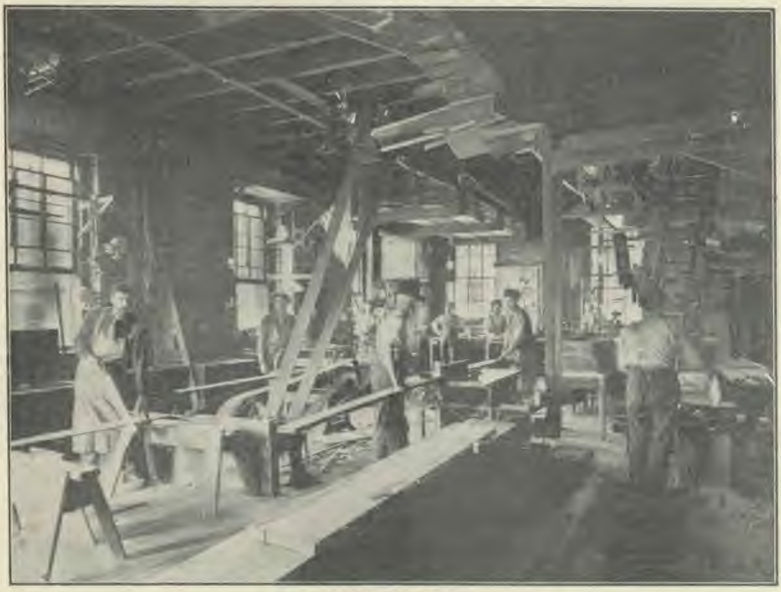
The Child Works in Play

relish. There is such a thing as appetite for exercise, and our daily ration in that line should be made up as much as possible of such forms of muscular exercise as, first of all, are agreeable, and, secondly, of such as will systematically develop the entire musculation.

All forms of exercise may be included in two classes,—work and play,—and to establish their respective value, a short study of the physiology of muscular work is desirable.

A muscle consists of a large number of small, contractile threads called muscle fibers, packed together in bundles of various size and shape. Each muscle fiber is connected with the spinal cord and the brain by means of one or two little nerve filaments. A muscle which in any way loses its connection with the nervous system, becomes absolutely useless, and will even gradually waste away, because the nutrition of each muscle fiber is influenced by the constant passage of stimulating currents generated in the central nervous system and passing to the muscle through the nerve fibers. It is also by means of various sorts of excitation in the central nervous system that what we may appropriately call electric currents are generated, which passing along the nerve filaments, reach the muscle fibers, each of which is made to contract by the liberation of energy stored in them. But what interests us particularly in this study is the fact that this central station, from which messages are sent to the whole system, is intimately related with and influenced by the higher

functions of the mind, such as judgment, will, desire. Voluntary muscular exercise, therefore, brings into play the central nervous system, including its higher functions,—the nerves and the muscles. The desire for exercise can be compared to the touch applied to the electrical button sending the current through wires to explode the blasting charge. The most healthful and beneficial muscular action is that which is induced and stimulated by normal desires from a cheerful mind acting on a sound nervous system capable of generating and sending strong impulses along a well-preserved line of nerve fibers to a well-nourished muscular system. Under such conditions muscular exertion can only be delightful and invigorating.



Plenty of Good Honest Toil

The amount of work or exertion of which the body is capable when in trim and in proper mood is simply marvelous. Look at the little child who knows nothing of drudgery, ever cheerfully on the move, and going during many hours of the day through a series of motions which would exhaust even a strong man who would undertake to imitate the same movements for an hour or two only.

If we must admit that exercise can be enjoyed only when taken in the form of play or amusement, and if we must look upon work as a necessary evil, then the question of the comparative value of work and play is settled. But when man through disobedience chose a different course of life than the blissful one of Eden, the Lord pronounced curses *for man's sake;* he did not curse man nor did he ordain as a curse that man should eat his bread in the sweat of his face. Under the new order of things, hard work was one of the greatest blessings that could be bestowed upon man. Plenty of good, honest toil still works for the salvation of mankind. The child works in play, and man should strive to play in work; that is the whole secret.

Besides being within the reach of all classes, rich and poor, work as a form of exercise is superior to play for the following reasons: Play is always indulged in spasmodically and without that regularity which is recognized to be so essential in the exercise of all the functions of our body. It could advantageously be combined with work, and if

done judiciously may prove beneficial. An inordinate desire for exercise, like a voracious appetite, is a possibility. With the latter, eating too fast and too much easily results. With the former, overexertion is readily brought about, but much more likely in play than in every-day work. Many a young man or girl has been injured for life by an overindulgence in play to satisfy an excessive desire for exercise at a time when the body was not prepared or trained for it. While it is true that exercise is best performed under proper stimulation of the nerve centers, we must recognize the fact that such a stimulation can become abnormal. It can be the result of irritation of those centers, as, for instance, in certain diseases of the mind, when at times the sufferer, although physically broken down, will subject himself to furious and prodigious muscular exertion. But overstimulation can also occur in healthy individuals, and unless judiciously controlled, will easily lead to overexertion.

The greatest point of superiority of work over play, to my mind, lies in the fact that honest labor is free from the many deleterious influences that most forms of play have on character. The exciting nature of play nearly always brings into action motives which are anything but noble and elevating. Unconsciously the player develops a selfish enjoyment in winning at some one's else expense. Play would soon lose all its attraction to the player if he met continual defeat. Some one must lose unless it be a tie, but who ever likes to see a game end in a tie? The young are particularly susceptible to such evil influences, which are here barely hinted at, and while they manifest a great activity at play, they gradually lose a taste for work, which soon becomes a drudgery. What is the matter with the young man who exhibits indications of exhaustion at the end of an ordinary half day's labor, and complains of hard work, and who a few minutes later is seen wrestling or going through gymnastics requiring in one minute the output of more muscular energy than he painfully succeeded in turning out during any one of his morning's work? You will see him lose flesh and energy, and often find him on the sick list, a victim of hard work, of course! Under the strain of that so-called hard work, and of an occasional sick spell, it takes only a few years until our young man has joined the legion of sufferers from the American disease, "neurasthenia." It is on just such a road that thousands of young people are started every year by most of our educational institutions. The young man is naturally more often a prey than the young girl, and it is evident that circumstances of after life more often come to the rescue of the young women before it is too late. This is undoubtedly the reason why neurasthenia is so prevalent among men.

The young should early be taught to make work a pleasure and to cultivate a taste for such occupations as will contribute to the building of a sound mind in a sound body. A properly trained mind can perform the most disagreeable task and keep itself free from its unhealthful and depressing influences.

Good food, plenty of light, sunshine, and fresh air, agreeable surroundings, and music are nature's tonics for mind and body. Music?—Yes, and it need not be from Sousa's band either. If you can not sing, you surely can whistle, and that is all you need. What soldier has not sustained long, forced marches under the stimulating influence of singing?

When the army of the French general,

Bourbaky, took refuge in Switzerland during the Franco-Prussian War in the winter of 1870-1871, many of its warring horses were left in the care of farmers. One of those horses, after having toiled for many years in a little Swiss village, was taken to the city of Bienne. The poor beast, which had never recovered from his starving condition while in the army, was one day painfully drawing a garbage cart. Horse and load were certainly a perfect match. The horse looked as if this humiliating task was the limit, and that he might just as well drop dead then and there. Suddenly he pricked up his ears and listened. A band playing a familiar military march was approaching, and presently appeared at a turn of the road. Immediately the old horse raised its drooping head high, straightened itself like a colt, and forgetting load and all, began to march with the music to the astonishment of the driver, who had all he could do to control the animal. If music will work such wonders on an old horse, there is hope for many a neurasthenic.

A wise boss of the Panama Canal force has with his section come far ahead of any other in the daily amount of work done by encouraging his men to sing while working, having discovered that by so doing the whole gang work better and faster.

Many a victory has been won in song, but needless to say more. The secret, try it!

A Good Appetite Is a Guarantee

GENERAL RULES FOR EXERCISE

It Must be Systematic and Regular to be Beneficial — Frequent Light Exercise vs. Occasional Heavy Exercise

EXERCISE, to be really valuable, must be systematic; that is, it must be taken in such a way as to bring into play all the muscles of the body in a natural and symmetrical manner, or, in case the exercise is taken to correct deformities or special weaknesses, it should be such as will be best calculated to accomplish the desired end.

It must be taken regularly. The way most business men take their exercise, going off on a hunting expedition once a year for one or two weeks, or now and then taking a very long walk or a tiresome rowing excursion, is not calculated to strengthen the muscles, but rather to make them sore and stiff, and to discourage efforts in this direction.

Exercise should be taken daily. The system requires its daily dose of muscular exercise as much as its daily portion of food; and it would be quite as sensible to undertake to do a month's eating in a single day as to take all of one's exercise for a month on a monthly holiday. Hence, exercise should be taken daily, and if possible, at a regular hour.

The best time for taking exercise is about ten o'clock in the forenoon, but for an ordinary individual the best time is at such an hour as will enable him to take it at the same time every day, thereby allowing the system to accustom itself to periodical muscular work, and so acquire the greatest amount of benefit from it. As a rule, especially with weak persons, a large amount of exercise should not be taken before breakfast. Persons who have a weak digestion, often suffer ill effects from taking long walks before breakfast, becoming so "faint" that the relish for food is lessened as well as the power to digest it. For those who have active duties requiring their attention during the usual business hours, exercise may be divided between morning and evening,— as, half an hour before breakfast and an equal length of time before going to bed.

The amount of exercise should be such as will produce genuine fatigue. At the beginning, the exercise should be taken very moderately indeed, and the person should stop short of complete exhaustion. Weak muscles, in particular, should be exercised with very great care. Many persons become discouraged in their efforts in the direction of physical culture by attempting to do too much at first. In consequence of very violent exercise, the muscles are made sore and stiff, and they become discouraged, and give up the attempt in disgust.

At no time during the course of physical training should the exercises be so violent as to be exhausting; but they should be so gradually increased that the heaviest exercise at the last will be no more taxing than the very lightest at the beginning. This requires that the amount of muscular work done should be so carefully graduated that the muscles will have time to develop

increased capacity as the work is increased.

A story is told of an ancient Roman who developed enormous strength by placing upon his shoulder a calf, and carrying it around the ring of a great amphitheater. This he did each day; and as the calf grew in size, his strength increased proportionately, until at last he was able to shoulder the full-grown ox, and carry it about the great arena with almost as much ease as he had first carried the animal when but a few days old.

Much greater benefit is derived from light exercises repeated many times than very violent exercises repeated but a few times, or engaged in only for a brief length of time. By lifting heavy weights, or indulging in such exercises as are too heavy for the muscles, they may be strained and even permanently injured; while by the employment of light exercises, though the body becomes fatigued, no such mishaps can possibly occur, and no permanent injury will be likely to be done.

EXERCISE AND PURE BLOOD

Tonic Condition of the Skin, One of the Many Valuable Results from Thorough Activity.

WHEN an athlete is in "fit" condition, the fact is indicated in part by his skin, which, as the trainer says, is "white as a woman's." This is because of the active perspiration induced by the vigorous exercise and the accompanying activity of heart and lungs.

The skin of the sedentary man, like that of the long-stabled horse, is inactive, lifeless, dingy, even "hidebound." Excrementitious substances which ought to be cast out through the sweat glands accumulate. The perspiratory ducts are clogged, the sweat glands become inactive, the blood flows sluggishly in the vessels.

Exercise awakens all the bodily activities. Every organ feels the tingle of new energy and power. The stagnating fluids which fill the sweat ducts are forced onward and the skin perspires. A cold or cool bath only cleanses the outside of the skin. Sweating by exercise cleanses the skin to its depths. A hot bath causes sweating and is good for the skin; but it does not supply as does exercise the oxygen required to burn up the impurities of blood and skin needful for body health.

Brisk walking is perhaps the best of all forms of exercise. Running is too violent; ordinary leisurely walking is quite too slow and easy.

Swimming in water of sea-water temperature is perhaps the best of all forms of exercise. It is a splendid heart and skin tonic. It strengthens the nerves, improves appetite and digestion, and increases lung capacity.

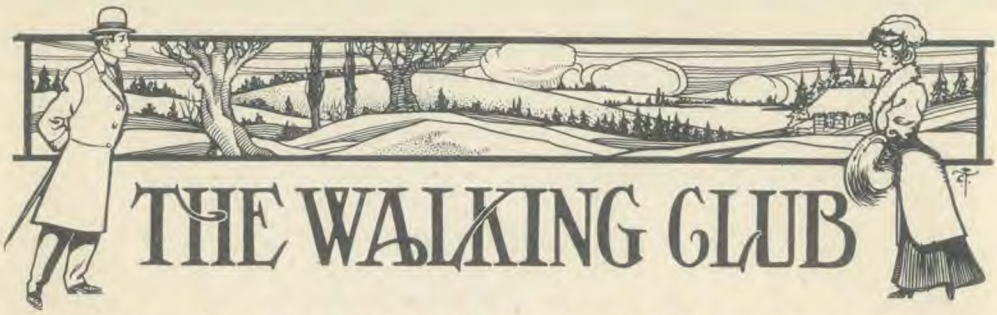
A WINTER TWILIGHT

The air is starred with snowy flakes,
  The spruces prick the sky,
And not a lonely pine-tree breaks
  The silence with a sigh.

Between the wastes of level white
  And the cloud-drift dim and gray,
In tassellings of tender light
  Beauty consoles the day.

They lose full many a scene like this
  Who flee our winter rude,
As hearts that turn from sorrow miss
  Its hushed beatitude.

—*Katherine Lee Bates, in The Congregationalist.*



WORK DONE IN MOUNTAIN CLIMBING

A Simple Computation of the Amount of Labor the Body Performs in This Excellent Form of Exercise

IT is sometimes useful to make calculation of the amount of work which one performs in a given exercise. For example, in such a simple exercise as walking, the amount of work done is much larger than would be supposed. At each step the body is lifted about one and a half inches. Allowing two and one-half feet for each step, eight steps would cover a distance of twenty feet. In taking these eight steps, and raising the body one and one-half inches for each step, the body would be raised in all just one foot. It thus appears that the amount of effort required to walk twenty feet on a level surface at the rate of three miles an hour is just the same as would be expended in lifting the body perpendicularly one foot. The same amount of work would be accomplished if one should walk ten feet and at the same time ascend a grade at the rate of six inches to ten feet, or a trifle more than half an inch to the foot.

Let us suppose the amount of work which a person is capable of doing in a day is equal to the lifting of 1,800,000 pounds one foot high. This is the amount stated by eminent authorities to be the average day's work of which the body is capable. Let us determine how far a person would have to walk in order to perform this work in lifting his body along a horizontal surface. Suppose the weight of the person to be one hundred and eighty pounds; dividing 1,800,000 by one hundred and eighty we learn that it would be necessary to lift his own body ten thousand feet in order to do the required work. If the work done in walking twenty feet is equivalent to lifting the body one foot, the distance to be traveled to do the re-

Mauvais Pass, Showing Method of Climbing

Mont Blanc and the Village of Chamouni

quired amount of work will be obtained by multiplying ten thousand by twenty, which equals two hundred thousand feet. Dividing this by 5,280, the number of feet in a mile, we have thirty-eight miles as the distance to be traveled. If the journey involved the ascent of a mountain five thousand feet in height, the required distance would be only one-half as great, or nineteen miles. By similar calculations it is easy to determine the amount of work done in traveling either on a level or in climbing mountains, provided the distance traveled and the altitude ascended are accurately determined. The amount of work done may be increased, of course, by carrying a burden of any sort. If, for example, a man weighing one hundred and eighty pounds should carry in addition to his own weight a burden weighing ninety pounds, the distance traveled would be proportionately less (1,800,000 divided by 270 equals 6,666). It is thus apparent that a very fleshy person will accomplish a larger amount of work in traveling a given distance than does a person of less weight.

The body is always at work. The heart and lungs do work amounting to much more than one hundred foot-tons during twenty-four hours. The simple acts of sitting or standing require expenditure of energy. Rapid walking may more than double the energy expended in a given time, and in running, the amount of work accomplished may be several times as much as that performed in walking at the rate of three miles an hour.

Ordinary slow walking involves very little muscular exertion for a person in ordinary health. When the rate of walking is increased to five or six miles per hour, the amount of muscular work involved is considerable. Walking at the rate of three miles an hour is equivalent to lifting the body perpendicularly through one-twentieth of the distance walked. For example, if a person walk one mile at the rate named, the amount of work done would be equivalent to lifting the body perpendicularly through a distance of 264 feet (5,280 divided by

20 equals 264). If the distance traveled has been along a rising surface, the elevation attained must be added to the work done. For example, if a person in traveling a mile has ascended a hill one thousand feet high, the total amount of work done would be equivalent to lifting the body 1,000 plus 264 feet, or 1,264 feet. Suppose the person's weight to be 150 pounds, the amount of work done would be 1,264 times 150, or 189,600 foot-pounds, or nearly the same amount of work which would be done walking five miles on a level surface.

In ordinary stair climbing a similar count may be made. Suppose the distance to be ten feet. Going from the base to the top, a person weighing 170 pounds would accomplish an amount of work equivalent to lifting a little more than one ton a foot high.

J. H. K.

The Great Mer de Glace

LUNA AND PROMETHEA ASLEEP

An Interesting Search for the Winter Hiding-places of Nature's Smaller Beings Is Inaugurated

BY JULIA ELLEN ROGERS

T is moved and seconded that the Walking Club, tramping about the woods and fields whose trees they studied last year, focus their eyes upon smaller but equally wonderful things in Nature during this new year. It is an old path for some of you, no doubt; but it is ever new. The blessed thing about lovers of "the great outdoors" is that no matter how limited is the range they have, they are always finding new treasures. No matter how narrow the life that ties them down, the beauty of God's world can not be excluded. In the moments stolen from grim toil, the most enslaved mortal can find enough sweetness and light to keep the soul fed, if only the soul's doorways are kept open.

Over our garden beds in the long twilight of summer evenings, whir the ghostly humming-bird moths, probing the tubed flowers with their long tongues coiled like watch springs. Where do they come from? What is their life

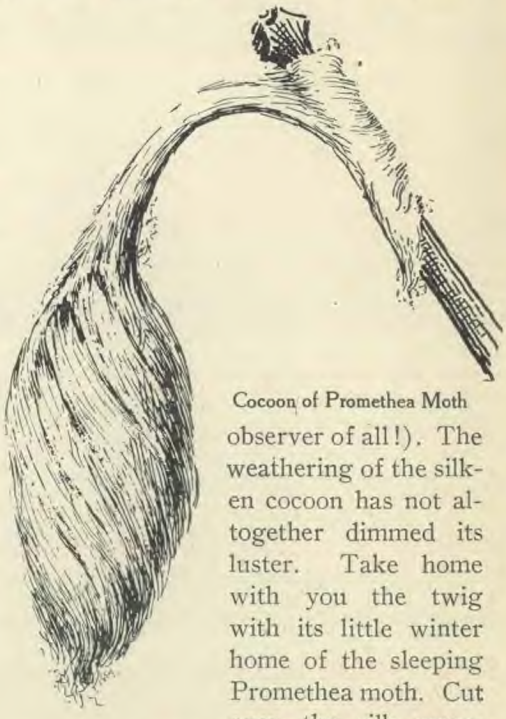
story, past and future? Is it possible to find it out? These are all questions we may answer affirmatively.

Most people (at least, nature lovers) have seen some few living specimens of our various giant, night-flying moths. There are several kinds. They feed on the young foliage of trees, as a rule, and in daytime are not easily discovered because they look so much like the surface against which they rest. They are caterpillars, and need protection from birds, their special enemies. Later on when they have attained adult, winged form, the same protective coloration is notably present, and they lie dormant by day in the trees that fostered them in the growing stages. Here will the eggs be laid for next year's generation. The new leaves will pasture the young moths in future as in past Aprils. The story is never old to those of us who read it every spring.

But why anticipate? What have we in February to do with next year's moths? Come out and I will show you where they are. We find them in the trees, and all I ask is that you look sharp, and be patient about it.

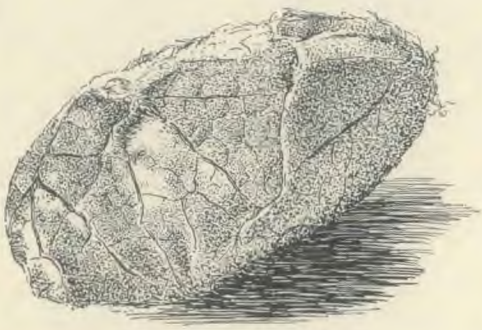
Sometimes we wonder where the insects go in winter. For answer, I assure you: "They don't go; they stay, each kind hibernating in its own way." Fifty common forest trees are fed upon by our common giant silkworms. So every maple, box elder, elm, sassafras, linden, and every oak is worth examining on our winter walk over the snow. All these trees are bare; that gives us an extra good chance to find the hiding insects. Their size makes discovery almost certain to a group of nature students. Is there a dead leaf hanging on that twig,—an innocent, left-over leaf? Who would have his suspicions aroused by such a sign? I would, always. And so will you next time, when the twig is drawn down and forced to confess its secret. The cleverness of the device is remarkable. It astonishes the observer. He can not take it all in at one glance, nor at two.

That leaf would have fallen had not the stem of it been sheathed with windings of silk thread, which also wrapped the twig securely. Bound fast, the leaf remained, and shriveled on its parent twig. A cocoon of silk lies in the concave of that dry leaf, hidden from the careless gaze of hungry blue jay, squirrel, and passing human (most careless observer of all!). The weathering of the silken cocoon has not altogether dimmed its luster. Take home with you the twig with its little winter home of the sleeping Promethea moth. Cut open the silk wrappings; it will do no harm to take out and examine the sleeper. There are the folded wings, the head, the eyes, the jointed abdomen, with a pair of breathing holes — "windpipes" — on each ring-like segment. All these show through the thin wall of the pupa case, even the feather-like antennæ folded back over the shoulders. The warmth of the room and the unwonted



Cocoon of Promethea Moth

experience of being handled, disturb the dreams of the little sleeper, and you feel it squirm, and see the faintest movement of the abdomen from side to side. Better return it now to its cradle, whose springy sides will close over it. Put the twig in a sunny window, preferably in a small vase of water all by itself. The buds will start, thinking that spring has come; and as they open, watch for the emergence of the moth. It is bound to happen much earlier indoors than outside. You will never see a more perfect creature than this dark beauty, rich in a blending of dark browns, with the sheen of velvet. At the moment of emergence the wings are very small, but perfect in shape and markings and coloration. Like magic is their gradual extension to four or five times this size. At intervals they are tremulously shaken and waved gracefully, as if the moth were eager to try them in flight.



Cocoon of the Luna Moth

The life of one of these adult moths is short. It flutters about, and may make a circuit of the room. You will find clusters of eggs on the curtain or other hangings. Do not try to feed the moth. Its feeding days were done when it left the caterpillar stage, and spun the cocoon in the dying leaf. There is no "cruelty to animals" involved in this forcing of the pupa to an early hatching. The eggs of a solitary female are infertile, so do not expect them to hatch. Three chapters of four we read in the life story of this beautiful moth; the fourth we may read later on in the tree-tops, as the leaves open and grow thick and green, and the smooth, fat larvæ devour them, and lay up energy and substance to nourish them through the two fasting periods that complete the cycle of their lives.

Luna is the queen of moths, flying by night, silent, ghostly, her silken wings pale green, with frontal border of violet tinge. The hind wings have long, slender points, trailing backward like graceful scarf-ends, and a transparent window, rimmed with violet, to match the border. Who has eyes to see this beauty as she waits for the night revels, asleep by day on a leafy branch? Only the trained collector can find them thus concealed. Occasionally one, drunk with the excitement of the midsummer night's whirl, sinks to sleep on a convenient fence post, or on the brown bark of the tree whose foliage effectually conceals its comrades. This one is doomed to be captured by birds, or to be brought in,—a nine days' wonder,—by some fortunate passer-by. The spread of the wings is six inches or more.

All winter the cocoons of Luna moths lie among the dead leaves under our common trees. The pale green caterpillars, fat almost to bursting, in late summer draw themselves up into compact form, and lose enough of their substance by spinning the silk cocoon to lie with comfort in a cradle no larger than a pigeon's egg. A leaf is usually woven into the outer wrappings. This is a protective measure, the spinner knows by instinct, and a great economy of silk. The caterpillar probably drops to the ground before choosing the leaf in which to roll itself.

LOW PROTEID DIET AND ENDURANCE

Facts Regarding the Far-Famed Tarahumaris Add to the Mass of Evidence Developed by Chittenden and Mendel

BY J. H. KELLOGG, M. D.

THE experiments made by Chittenden and Mendel at the Sheffield Scientific School of the great Yale University two or three years ago, have demonstrated beyond any chance for question the value of a low proteid diet; that is, a diet containing a small amount of albuminous or nitrogenous material. Such a diet is almost of necessity a non-flesh dietary, for nearly all the ordinary foodstuffs, with the exception of fruits and pure fats, contain a sufficient amount of proteids to balance the other food elements according to the Chittenden standard.

Since the careful researches of Chittenden and Mendel were completed, facts have been constantly coming forward which corroborate their findings. The following account of a tribe of Indians who are known as the greatest runners on earth affords another illustration of the value of a low proteid diet:—

"The Tarahumaris, a great tribe of Northern Sierra Madre Indians, are the greatest runners on earth, not in regard to speed, but to endurance. They have been known to average 170 miles a day, and there is an absolute record that is indisputable of a Tarahumare, sent with an important government document that necessitated an immediate answer, covering the distance, a 600-mile jaunt, in five days, or an average of 120 miles a day, not counting the time lost while the answer was being prepared. And it must be remembered that this feat was not performed upon a fair road, or on an undulating plain, but was over the hardest country that the Sierre Madre affords, up and down paths where the very deer would hardly ever make a trail. The only level ground encountered was the ford of a deep river. Also the trip was made on a species of pinole, or pop-corn ground down and mixed with water, and the Indian carried his camp equipment,—a blanket."

In a letter recently received from a man in Mexico who has been in the country forty years and who is well acquainted with the habits and customs of the natives of that great country, having been constantly traveling among

them, he writes us that he is acquainted with the Tarahumaris and knows from personal observation of their marvelous endurance. Our correspondent states that a modern Tarahumare Indian can easily leave a well-mounted horseman behind. He mentioned that a friend who had recently been spending some time amoung the Tarahumaris related to him instances showing the most extraordinary endurance possessed by these simple people.

A diet of parched corn and water is admirably adapted to support the body during severe physical strains, such as those described in the above paragraphs. Corn consists almost exclusively of proteids and carbohydrates. The proteids are present in very moderate amount, a trifle more than required by the Chittenden ration, but in no great excess. The amount of fat present is small, but this will be no serious disadvantage for a short period, and might even be an advantage. Fats hinder the secretion of gastric acid, which is essential for the digestion of food. Prolonged and violent exercise has the same effect. On this account, a low fat ration would seem to be better adapted for use during a period of extraordinary physical exertion. The important thing at such a time is to get into the body the largest amount of available nutriment, and this can be accomplished only by employing the simplest and most concentrated foods in a form easily digestible and assimilable. It would be hard to find anything capable of meeting these requirements better than parched corn. This article of food has been extensively used from time immemorial by the Indians of the American continent. It is also at the present time in use under the name of gofio by the natives of the Canary Islands, who perform great feats of physical exertion with a diet consisting wholly of gofio and water.

The experience of the Tarahumare Indians tallies perfectly with that of Hindu runners, although the feats accomplished by them are far greater than those reported of the East Indians. The latter run sixty miles a day for many days in succession on a diet consisting of rice and a little *ghee*. The extreme heat to which the Hindu runners are subjected is doubtless a great handicap to them.

In this connection one naturally recalls the fact that the fleetest animals subsist upon a non-flesh dietary, and that the noblest and most useful members of the great animal kingdom are likewise non-flesh eaters.

The lesson to be drawn from these facts is the importance of returning to simple habits of life. We have gotten too far away from nature, that is, from the normal conditions of life which the Creator established for us, and which are essential for our well-being

How the Body Resists Disease

II.

BY WILLIAM S. SADLER, M. D.

2. By Crippling or Disabling the Germs — Nature is wonderfully resourceful in her battles with the microbe. When she fails to successfully eliminate these invaders, she utilizes her marvelous means of crippling and chloroforming her foes. This work is accomplished in a number of ways, as follows: —

(*a*) *Agglutination.*— There are present in the blood certain substances called

agglutinins, which are able to handicap the germs and their work, and thus facilitate their capture and destruction. Under the influence of the agglutinins, the germs are partially overcome, and caused to gather about in clusters or chains. They are rendered more or less helpless, and thus they are checked in their work of pillage and plunder. These agglutinins are found in the blood, and are supposed to be secreted by some of the cells of the body.

Agglutination

This work of crippling the germs and gathering them together in clusters also makes it easier for the white blood cells to catch and eat them up.

(*b*) *Attenuation.*—There are certain substances which are present in the blood, that are able to decrease the disease-producing powers of the germ; that is, to lessen its virulence, otherwise known as attenuation. It is probably due to the action of these bodies that some members of the family may not have a disease quite so severely as others.

(*c*) *By Increasing the Temperature.*—It has been found that when the temperature of the body is raised to about 102°, the multiplication of the germs is greatly interfered with. This higher temperature also greatly facilitates the production of antitoxins by the body, and it is for this very reason that moderate fever is an aid in the struggle against infectious diseases, provided it is not allowed to rage too furiously. Temperature above 102° is highly destructive to the tissues of the body, and at the same time gives no additional aid to the defensive processes.

3. **By Diluting the Toxins** It must be remembered that many of our most-dreaded diseases are produced, not so much by the presence of the germ itself in the body, but rather by means of certain poisons called toxins, which the germs secrete, and which find their way into the blood, and thus circulate through the entire body. For instance, diphtheria germs are ordinarily found only in the throat, but the general symptoms of fever and disease outside of the throat are produced by the germ poisons which find their way into the blood.

(*a*) *The Inflammatory Exudate.*—It often occurs that germs produce in some part of the body large quantities of poison which can not be immediately eliminated. In this event, an inflammatory process is started, and accompanying

Mucous Membrane

this is the inflammatory exudate, a substance which is allowed to pass out from the blood through the vessel walls, and which, while it is germicidal, also serves to dilute the poisons present, so that they will not be so irritating, and hence not so profoundly affect the living cells in their battle for life.

(*b*) *Congestion of Blood.*— Accompanying this inflammatory process there is an active congestion. That is, increased quantities of blood are caused to flow through the affected part, and thus thousands of fresh troops, the white blood cells, are brought to the scene of battle to fight for the life of the threatened tissues. Also, the increased amount of the germ-destroying serum is thus poured upon the scene of trouble. Congestion is good as long as it is active,— as long as fresh blood is being constantly brought to the seat of difficulty; but when the condition becomes passive, and the blood stagnant, it becomes then rather of an aid to the disease germs in their deadly work.

What to Do for Grip

BY KATE LINDSAY in The Housekeeper

The first thing to do when the aching, chilliness, and fever indicate an attack of influenza, is to go to bed in a quiet, well-ventilated room, and to have no visitors except the attendant or nurse. Stop all food for from twenty-four to forty-eight hours, and secure a free action of the bowels either by enema or by some mild laxative as prescribed by the family physician, who should always be called. A warm bath with cold to head, or if that is not practicable, a hot foot or leg bath with an ice-bag to head and back of neck, will often give much relief, especially where there is much congestion of the brain, high fever, and delirium. Where the patient is too ill to sit up, the legs and feet may be wrapped in a blanket wrung out of very hot water, and at the same time the head and face be sponged with either hot or cold water, whichever seems to afford the greater relief.

La grippe patients do not bear heroic cold treatment well; therefore, even when the fever is high, tepid or even warm sponging, or a tepid full bath will do more good than using the cold-water treatment so often useful in typhoid and other diseases characterized by high temperature. The fever in influenza is often high, and may reach 106° or more, although in ordinary attacks the average is 103° or 103½°. It usually lasts from four to six days, when it may subside entirely, usually leaving the patient weak and depressed.

During this time the diet, as in other fevers, should be fluid, well-cooked gruels, milk if the patient relishes it and can digest it well, and fruit juices. There is much that can be done to lessen the severity of an attack of this disorder, by proper care during the fever stage. This means to provide the patient with fresh air in abundance. The value of this all-potent remedial agent for the treatment of many diseases, notable among which are tuberculosis and pneumonia, is so much appreciated by the medical profession at present that in the hospitals of New York and other large cities they are treating such patients by taking them to the housetop, and keeping them in the open air night and day. As many of these cases are pneumonia attacks following la grippe, it is rational to suppose that the open-air treatment which would cure a case of pneumonia when the patient seemed past all hope, would have prevented this

disorder had it been used before the onset of the disease. It may require some exercise of faith in the medicinal virtues of fresh, cool air to open all the doors and windows of the fever patient's room on a cold winter day, or even move him out to a cot on the veranda; nevertheless it is the pure air, which he can not get in his own room, that he needs. The atmosphere of the inside air is being constantly contaminated by the exhalations from his body as well as that of the nurse, and all the sources of house air defilement, potent among which are hot-air furnaces, oil, coal, and gas stoves, and lamps. This out-of-door treatment should not be rashly administered, but given intelligently. The patient should be put into a proper bed, preferably one with a railing a few inches deep to keep the bedding from being displaced, and also to shut off currents of cold air from flowing in under the covering and chilling the patient. A well-heated excelsior mattress will retain warmth a long time if a woolen blanket is laid under it next to the springs, and a well-warmed cotton mattress over it. The sheets, preferably light-weight cotton blankets, and all the upper bedding should be warm and dry, and a hot bag laid at the feet. The patient can be tucked into his warm nest in a warm room, and carried outside for fresh-air treatment for a number of hours two or three times a day, and often it is well for him to sleep out-of-doors at night.

Bite, frost, bite!
The woods are all the searer,
The fuel is all the dearer,
The fires are all the clearer,
My Spring is all the nearer.
You have bitten into the heart of the earth
But not into mine.

— *Tennyson.*

THE CHILDREN'S COOKING CLASS

CONDUCTED BY LENNA FRANCES COOPER

DEAR CHILDREN OF THE GOOD HEALTH FAMILY:—

I wonder how many of the little boys and girls of this family are learning to be cooks—to be mama's assistants. When we remember that our food makes us ill or keeps us well, we see how very important it is that the cooking should be done right. So I hope you are all trying to be cooks and all having splendid success.

Remember that one of the first secrets of success is to be very accurate in all your measurements, making all measurements perfectly *level* unless otherwise stated.

Last month we told you something about water without which we can not live, for we ourselves are about three-fourths water. So almost all of our foods contain large amounts of it. The potato, strange to say, consists of about the same proportion of water as we.

But in addition to the water, the potato also contains another important ingredient. It is what we call starch. If any of you wish to see some pure starch, ask your mamas to show you some corn-starch, which is the starch taken from corn. Feel it and look at it closely. Now this is composed of millions of tiny particles, which we call starch cells, and each cell is made up of two parts: a wall, or outer part, and an inner part which consists again of still finer particles or granules. (See illustration.) These little granules are very queer things. They are shut up very tightly within the wall which surrounds them, but when something happens to burst this wall, they all come scrambling out in very much the way apples do out of a full sack when the binding string is cut. Now I am going to tell you what may happen to cause this wall to burst. It is heat.

Now the very queerest thing about these granules is that they are very thirsty. The moment they are freed from their cell wall, they take up any liquid which may be near. Any of you may prove this by trying this experiment. Take a teaspoonful of corn-starch, moisten it with a tablespoonful of cold water, and then pour over it, stirring continuously, a half cup of boiling

"Like Apples Out of a Full Sack"

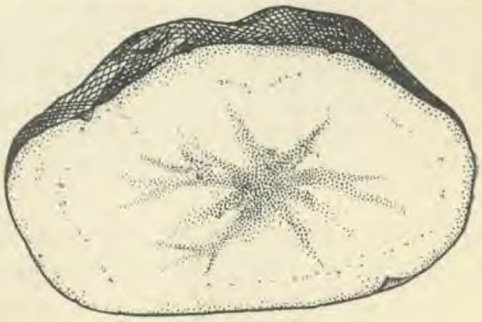
water. What happens? Oh! you say, "It thickens the water." But how did it thicken? That is very simple. The heat of the hot water bursted the little cell walls and the granules came rushing out, each scrambling for some water, which in turn made them gelatinous, or jelly-like.

But why did we put some cold water on the starch before adding the hot water? Again I will tell you. It is to separate each starch cell, so that when the hot water bursts the cells, there will be plenty of room and plenty of water for each little granule. Otherwise, in their scramble for water, these little granules will try to take water from each other and stick together, thus forming masses or lumps. Hence wherever we use starch for thickening, we must always mix it with some cold liquid first. This applies to flour as well, for it is mostly starch also.

Now the same thing happens with the potato or any other food which contains starch when heat and moisture are applied. With the potato we do not need to add additional water, since it already contains so much, but put it directly into the hot oven. After a time it becomes soft and when we open it, we find that it is "mealy." That means that the cell walls have been broken by the heat and the little granules have escaped and taken up the water. Cut a raw potato down the center and notice the difference between it and the cooked potato. You can actually see the water in the raw potato, but not in the cooked one.

Potatoes are a very excellent food when properly prepared, and we are anxious that the little GOOD HEALTH boys and girls should know how to prepare them.

In the first place, if they are not baked, they should be carefully pared. If you will notice cut potatoes, you will see some lines and markings very similar to the following illustration. The very outside ring, of course, denotes the skin which is to be removed. But not very far below it is another ring. Between these two rings is the best part of the potato. Hence you must be very careful not to take away any more of it than possible. Pare very thinly.



The Inside of a Potato

Below we shall give you some directions for preparing potatoes, which

seem very simple, but we find very few people who do it right. One little girl, after boiling potatoes as we shall tell you, said: "Oh! I never liked boiled potatoes before, but these are so good." I hope you will have the same success.

The utensils needed for these recipes are as follows:—

Double Boiler,
Sauce Pan,
Small Mixing Bowl,
Spoons, Knife, Fork,
Pie Tin,
Baking Dish,
Paring Knife,
Vegetable Brush,
Butter Brush,
Shallow Baking Pan.

Baked Potatoes with Cream Gravy.—Wash and scrub the potatoes with a vegetable brush until perfectly clean; dry with a cloth and bake in a moderate oven until they feel soft when pressed with the fingers. It will take about three-quarters of an hour unless the potatoes are small. When done, take each potato in a towel in the hand and press gently without breaking the skin until the whole potato feels soft, then the skin may be ruptured slightly and the potatoes sent to the table at once.

Never pierce the potato with a fork to see if it is done, as this allows the steam which forms within the potato to escape, and the potato is not properly cooked.

Serve with

Cream Gravy.—Two cups rich milk or thin cream; four tablespoonfuls flour; one teaspoonful of salt. Heat the milk, part of this being cream if it can be obtained, to boiling and stir into it very slowly four tablespoonfuls of flour previously rubbed to a smooth paste by adding a little cold milk, a few drops at a time, meanwhile stirring to make it smooth. Add the salt, and then cook in a double boiler (see utensils used) ten minutes, stirring frequently that no lumps appear.

Thickening the Soup

Boiled Potatoes with Brown Cream Gravy.— Wash and scrub the potatoes with a vegetable brush, pare very thinly and place in a pan of cold water. Make all as nearly of the same size as possible. When all are pared, put them, a few at a time, into a sauce pan of boiling water. Let them boil until they begin to get soft when pierced with a fork. Then add a cup of cold water, which will check the cooking on the outside while the heat already in the potato will finish the cooking of the center, thus making the potato evenly cooked throughout.

When they again reach the boiling point, if the potatoes are sufficiently cooked, drain off the water. Dust with salt and allow the potatoes to remain over a low flame for a moment or so, shaking occasionally to more perfectly dry them. Serve with

Brown Cream Gravy.—Two cups rich milk or thin cream; 1 teaspoon salt; 5 tablespoons browned flour.

Brown the flour by placing a cupful on a pie tin and placing in a moderately hot oven, stirring frequently until it is a nice golden brown. Be careful not to get too brown, else it will have a bitter flavor. What you do not need may be put into a can and saved until another time. Moisten this carefully with a little cold milk and proceed just the same as for the cream gravy. Be sure to have the milk boiling when the flour is added.

Browned Potatoes.—Boil potatoes as above directed. Place them in a shallow baking pan and for every half dozen medium-size potatoes used, melt one level tablespoonful butter and with a brush (a small paint brush is most convenient for such purposes) spread some of it lightly over them. Put into a hot oven and bake till a nice golden brown.

Cream of Celery Soup.—Three-fourths cup chopped celery; one and one-half teaspoonfuls salt; one cup of hot water; one cup of milk; one cup of cream; two tablespoonfuls flour; two tablespoonfuls of cold water.

Steep one-fourth cup of celery in the milk and cream and the other half cup in the hot water with the salt until both are perfectly tender. Drain off the water from the celery and add it to the milk and cream.

Braid (rub smooth) the flour with the cold water as for the cream gravy and add to the other ingredients when boiling hot. Cook for five minutes and serve.

THE PROTEID DELUSION AGAIN

A Purveyor of Canned Beans Now Finds It Useful As Ammunition for a Bombastic Advertising Fusilade

THE proprietor of a certain brand of canned beans has hit upon the bright idea of utilizing for the purpose of exploiting his product the exploded notion that "proteid" is the great source of intelligence and energy.

Here is the way the glib advertising writer eulogizes proteids:—

Two Kinds of "Good Health."

There is *active* and *passive* good health!

One is the aggressive, *conquering* Health of the pacing Tiger.

The other is the placid, passive, *actionless* Health of the Cow lying on the grass, chewing her cud and waiting to be milked for *another's* benefit.

The wide difference in Health springs chiefly from the wide difference in food.

The Tiger feeds on *meats,* which are *Nitrogenous* Foods, rich in *Proteids.*

The Cow feeds on *grass* and other Carbonaceous Foods, containing very *little* Proteid.

Proteid, you know, is the food-factor which builds and rebuilds animal (human) tissue, brain, flesh and muscle.

It is also the factor that builds *Courage,* Audacity, "Nerve," and that pent up *Force* of the coiled spring, ready to instantly apply.

This is the reason why meat-eating races and meat-eating animals have through the effect of these *Proteids,* triumphed ever since the world began.

Now the adroit salesman slyly transfers the laurel wreath which he has woven for *beefsteak* to *beans,* but he neglects to give any proof that bean-eating animals have been known to show any of the characteristics of the lion or the tiger. To compare a wild tiger with a domestic cow is absurd. The wild buffalo of the plains would be a fairer illustration of a grass-fed mammal. Certainly the bull buffalo was not especially noted for his docility or lack of courage. The stories hunters tell of the bull elephant and the rhinoceros and hippopotamus are also suggestive of anything but lack of physical force and prowess.

On the other hand, the flesh-eating seal does not show any particular evidence of superior "proteid" courage or energy. Meat-eating makes animals irritable, savage, and bloodthirsty. It makes dogs and bears quarrelsome and untractable. It has the same effect on boys and upon nations. *But this is not courage.* Every hunter knows that a male deer is by no means a pleasant antagonist to encounter alone in the woods during the rutting season. And how savagely the domestic cow will battle in defense of her young!

Proteid is a tissue-builder. It is like the metal repairs needed by the locomotive, important, essential, but required only in small amounts. The other food

elements—starch, fats, and sugar—are like the coal which the locomotive consumes in great quantities. They are fuel to the body. Beans are wholesome food; the proteid which they contain is useful nourishment; but the value of the bean as a food is no greater than that of the potato, compared in a dried state, and according to Dr. Chittenden the potato presents the needed food elements in better proportion than does the bean. The potato contains all the proteid needed. It lacks only fat.

The reputation of the bean as a food rests upon its general wholesomeness rather than on any specific influence of its proteids upon mental or moral character. Indeed, it is quite possible to introduce into the system an injurious excess of proteid even in the form of legumes. The bean and its congeners, the pea, the lentil, and the vetch, are foods which must be used in moderation, as otherwise the risk is incurred of injury from "high proteid," the evil effects of which have been so clearly shown by the work of Chittenden and Mendel.

TUBERCULOUS TURKEYS

Sickness in the Gobbler Tribe Is Found to be Unusually Prevalent This Year.

THE turkey family seems to be particularly unfortunate this year. A post-mortem examination held over a large fat gobbler at a physician's dinner table in this city on Christmas revealed the fact that the creature's body was fairly swarming with tubercle germs. The liver was a mass of tuberculous matter. This turkey was one of a lot of twenty-three. The rest, which were no doubt in the same condition, were eaten without examination, and the consequences will probably appear later in the annual mortuary report.

Similar finds are reported in the Chicago papers.

The publication of these reports will likely, to some degree, spoil the appetite for roast turkey, as did the remark of the small boy who sung out as his grandfather was carving a big specimen from his own barnyard: "Say, grandpa, was that the old sore-headed turkey?" Grandpa was silent, and the knives and forks rattled less cheerfully than usual at that turkey's funeral.

What strange perversions we have fallen into. We make cemeteries of our stomachs, and smile while picking with our teeth the puny thighs of birds, or gnawing the ribs of larger beasts. There's a better way.

METCHNIKOFF'S NEW BOOK

Danger of Meat Diet and Necessity of Clean Tissues Made Cleaner Than Ever in "The New Hygiene."

METCHNIKOFF has just issued a new and most charming little book entitled, "The New Hygiene." In this work he makes clearer than ever the danger of a meat diet, and the need of a clean alimentary canal and clean tissues.

Metchnikoff especially emphasizes the need of suppressing and starving out, so far as possible, the colon germ with its terrible toxin, which he has shown to be the direct cause of old age and of many of the most intractable maladies.

Special emphasis is laid in "The New Hygiene" upon the necessity for the careful sterilization of all foods. According to Metchnikoff, even fruits must be sterilized to insure safety from intestinal parasites. He regards the strawberry as one of the fruits most likely to convey to the stomach the eggs or larvæ of parasitic worms. He seems to prove that appendicitis is often the result of infection and injury of the mucous membrane by ascarides, oxyuris, and other intestinal parasites. The book is full of suggestive facts.

A WORD ABOUT CRANKS

How and Why Reform Sometimes Suffers as Much from Its Friends as from Enemies.

UNDOUBTEDLY the chief obstacle in the way of diet reform and other "return-to-nature" movements is the prejudice in favor of established opinion. To do as our fathers did, to believe what our mothers taught us, is for most people as natural as to breathe; and to do the opposite is so difficult that much moral courage is required to enable one to brave the task.

But there is another side to the question worthy of consideration. A recent writer sets it vigorously forth in the assertion that "we should to-day be well on toward the millennium if it were not that the reformers drive away all those whom the reform attracts." The writer referred to complains that reformers are cranky, inconsistent, fanatical, extravagant, grotesque, lacking in tact, and often repulsive.

Unfortunately, this accusation has a large element of truth in it; but the fact that men and women turn their faces away from truth and refuse to investigate it because they find its exponents unattractive, is itself an evidence that reform is needed. Such an attitude is like refusing to drink a cupful of cold water because of the unattractive shape or color of the cup. A truth seeker will not judge of the grain by the appearance of the husk. The reform is one thing; the reformer, another. The copper wire that carries a message may be crooked and tangled, but the message it bears may be sublimely beautiful, divinely sweet, eternally true.

The judgment which condemns a reform or a movement, so-called, because of its unattractive or unworthy representation, is most superficial, and can have no weight in advancing human progress.

Still, the fact must be recognized that men judge of the quality and validity of a new idea by what appears to be its practical value. If a reform is genuine, it ought to do something for the reformer who is its advocate; so men will estimate the worth of a reform movement by what it appears to do for its disciples in making them superior to others living under similar conditions of life. Hence it is manifestly the duty of those who espouse a reform to see to it that they in no way "walk unworthy of their calling." No doubt a reform generally suffers quite as much from its friends as from its enemies. There is a responsibility resting upon the head of every person who attaches himself to a reform movement to be consistent; to be sincere; to himself profit to the fullest extent possible by the newly found truth, and to take care that he brings no reproach upon it by pharisaical boasting, or by bombastic or offensive utterances.

The reformer ought to be a model in tactfulness, consistency, good sense, mental balance, patience, and forbearance. But he seldom is thus constructed. He is generally a man who takes a rather circumscribed view of the world. He sees a few things clearly, and gives his whole thought to them. He thinks for himself and reaches independent conclusions. He naturally becomes more or less oblivious to public opinion, and may easily become critical, acrimonious, and even cranky.

Reformers are not made to order. We have to take them as they come. If they do not always seem to have profited to the fullest extent by the reform which they advocate, it must be remembered that no one can know what they would have been without it.

The reformer who keeps truth to the front and himself as much as possible out of sight is wisest.

OPSONIN—A NEW DISCOVERY

An Interesting Factor in the Fight Against Bacteria, and a Few Facts About It.

A new word, a new thing, a wonderful discovery, is opsonin. Some years ago

Metchnikoff, the eminent pupil and associate of Pasteur, made the wonderful discovery that the white cells of the blood have for one of their functions the defense of the body by promptly swallowing and digesting the germs which swarm in by millions all the time through the lungs, the intestines, and the skin. The millions of these wonderful little organisms are kept busy in fighting off the deadly germs which constantly assail us through the medium of air, water, and food.

But now the scientists have discovered the interesting fact that the blood cells do not always attack the germs with equal avidity. Sometimes, they refuse to swallow them or even to approach near them. They remain quite indifferent to them. This surprising fact is found to be due to the absence of certain substances the purpose of which is to render the microbes palatable to the cells. These substances are called opsonins. When present in the blood in sufficient amount, they are absorbed by the invading germs, and then the white cells attack the germs with a ferocity which soon exterminates them; but without opsonins, the white cells are absolutely inactive, and the germs are left to grow and develop in prodigious numbers.

For efficient body protection, then, one needs not only white blood cells — leucocytes—abundant in number and of good quality, but he needs also opsonin to serve as a sort of relish to make the bacteria attractive or appetizing to the leucocyte palate.

This discovery opens up a new field of inquiry and study. We must now find out the best means of securing an abundant supply of opsonins as well as of white cells.

A few most important facts in this line have already been discovered by actual experiment. Alcohol is found to be most deadly to opsonin. A small amount in the blood destroys the protecting opsonins almost entirely, and so opens the way for germs. Hence the folly, as suggested by Metchnikoff, of administering alcohol in typhoid fever, pneumonia, and other infectious diseases.

Tobacco is another poison wholly fatal to opsonins. A consumptive who was a heavy smoker was found to have an opsonin index of zero; that is, tobacco smoking had so poisoned his body that the opsonins by which he should have been able to fight off the tubercle germs, were not formed, and he was thus helplessly in their power, and his case was hopeless.

Tea, coffee,—all sorts of drugs and poisons are damaging to the opsonins.

The writer is also very confident that future experiment will show that the free use of flesh foods, the use of condiments, the absorption of poisons from the colon, the toxins of breath-poisoned air, retained excretions, and all body poisons will be found to be destructive to these life-saving opsonins which are of such precious value to the body.

Every man who has regard for his life and health will take good care to cultivate and protect his opsonins.

Short cold baths increase the opsonins of the white cells in the blood, while long cold baths have the opposite effect.

Breathing cold air, through its general vitalizing effect, has the same effect as short cold baths.

"Child Labor a Menace to Industry, Education, and Good Citizenship."

A volume containing the papers and addresses and the proceedings of the Second Annual Meeting of the National Child Labor Committee. Price, cloth bound, $1.25; paper binding, $1.00.

Among the topics treated we note: The Physical and Physiological Effects of Child Labor; Parental Responsibility for Child Labor; Child Labor at the National Capital; The Child Labor Problem—A Study in Degeneracy; A Business Man's View of Child Labor; Child Labor in the Southern Cotton-Mills; together with many other valuable papers presented at the National Convention of 1905.

[Every reader of GOOD HEALTH is entitled to the privileges of the Question Box. All letters should be addressed to Editor Question Box, GOOD HEALTH, Battle Creek, Mich. Questions must be confined to matters regarding health and kindred topics. Each letter must be signed with the full name and address. The name and address are required so that when necessary, the letters may be answered directly, as it is frequently impossible to include all letters and their answers in this department, owing to the large number received.—EDITOR.]

10,433. Watering of the Eyes — Catarrh. — C. B., Massachusetts: "1. Kindly give the probable cause and remedy of continual watering of my left eye, the condition having existed about nine months. 2. Is bicarbonate of soda and common table salt, snuffed up the nose and ejected through the mouth, good for catarrh?"

Ans.—1. The continual watering of the eye is probably due to infection with bacteria. Frequently the tear duct which discharges into the nose is obstructed by catarrhal conditions of the nasal mucous membrane, thus causing watering of the eye. A good remedy is to bathe the eye frequently with hot water, or a hot solution of boric acid in the strength of one part boric acid to twenty-five parts of water. A competent oculist should be consulted as early as possible.

2. The solution of the substances named is not a very satisfactory method of treating catarrh. An atomizer giving a strong spray is a better means of cleansing the nose. The curative treatment of catarrh should include not only local treatment of the catarrhal area, but general constitutional treatment should be employed, such as the daily cold bath, outdoor life, a diet free from indigestible and harmful substances, free water drinking, and careful care of the bowels.

10,434. Hives — Neurasthenia — Sanitas Chairs. —A. B. C., Mississippi: "1. What is the cause and cure of hives? 2. What diet and treatment would you recommend for a very weak neurasthenic? 3. Where can I obtain the Sanitas Chair?"

Ans.—1. The cause of hives is usually indigestion, although a number of other factors may be the active causal agent. The use of certain foods, such as strawberries and other fruits, and honey, sometimes produces hives in certain persons. The cure consists in avoiding known causes. Indigestion should be relieved by adopting a simple dietary, avoiding the use of flesh foods and condiments, such as pepper, pepper-sauce and spices, thoroughly chewing the food, rendering it semiliquid in the mouth before it is swallowed, and especially by keeping the bowels freely active, which is best accomplished, if constipation is present, by cleansing enemas. Employ first two or three pints of water at 102 degrees to 105 degrees, followed by one pint at 80 degrees. It may be necessary to use hot soap-suds instead of hot water for the first enema.

2. The patient should adopt a natural dietary, consisting of fruits, grains, and nuts, taking special pains to masticate all food thoroughly. Avoid the foods above mentioned. Use fruits freely. The patient should live an outdoor life, exercising as much as possible daily, and securing plenty of fresh air while asleep. Take a cold morning bath daily, exercising great care to secure good reaction. Do not occupy more than a minute or a minute and a half in taking the bath.

3. Address the Modern Medicine Company, Battle Creek, Mich.

10,435. Flatulence — Rheumatism. — I. D., Ohio: "1. I suffer frequently from

gas in my stomach; at times my heart pains and beats very fast. Please prescribe treatment and diet. What kind of fruits and vegetables would best agree with me? 2. My mother has suffered from muscular rheumatism six years. What treatment would you suggest? 3. Are strawberries injurious to one having rheumatism?"

Ans.—1. It is difficult to make a proper diet prescription in your case without a test breakfast. If you wish a test breakfast, address the Battle Creek Sanitarium for directions as to how the meal should be administered and forwarded to the Sanitarium Laboratory. You should have a very careful examination by a competent physician.

2. The malady is doubtless due to autointoxication from the absorption of poisons resulting from the retention of undigested food materials in the colon. Treatment consists in careful cleansing of the colon and the adoption of a diet which will discourage the production of colon toxins. The directions concerning diet and the care of the bowels given in the answer to No. 10,434 are applicable in this case. The application for fifteen or twenty minutes of cloths wrung out of very hot water to the painful parts affords very grateful relief. This should be followed by heating compresses, consisting of a towel wrung quite dry out of very cold water, wrapped snugly about the parts and covered by several thicknesses of flannel pinned snugly in place.

3. No.

10,436. Dietetic and Hygienic Treatment of Diabetes. — A. J. M., District of Columbia: "1. What is the proper diet for a person in fairly good health whose urine contains sugar? 2. Are breads permissible? 3. Are granola, baked potato, rice, malted nuts, zwieback, and whole wheat wafers permissible? 4. What hygienic measures would be beneficial?"

Ans.—1. This disease is characterized by diminished power of the blood to oxidize sugar, therefore sugar should be carefully restricted, and such measures as will improve the oxidizing power of the blood should be employed. It is important in prescribing the diet to know the amount of sugar present in the urine. In severe cases all foods rich in sugar or starch must be carefully avoided, also flesh foods, condiments, and irritating indigestible foods of all kinds. The patient may eat green vegetables, sour fruits, dairy

butter, olives, olive oil, protose, nuttolene, and gluten preparations, especially gluten bread and gluten biscuit, and various preparations of 40 per cent gluten flour. Potato gluten biscuit and pure gluten flour and meal may be purchased. Where only a small amount of sugar is present, a limited quantity of bread may be added to the diet, and baked Irish potato may be freely used.

2. In severe cases ordinary bread should not be used at all, though rye bread, and gluten, and potato gluten bread are permissible. In mild cases to the above may be added a small quantity of ordinary breads.

3. The baked potato may be used in moderate quantity. The other foods mentioned should be avoided.

4. Daily cold bathing, electric-light bath or some other forms of sweating bath, the adoption of an outdoor life, and an abundance of exercise as the patient's strength will allow.

10,437. Fruit Skins — Vibrators — Paralysis. — P. Z., London: "1. Is it true that the skins of apples and pears contain tannic acid and are unwholesome? 2. Kindly give your opinion as to vibrating apparatus, hand or electric, manner of application, etc. 3. Advise treatment for paralysis—patient constantly improving."

Ans.—1. The skins of apples and pears are not unwholesome on account of the lactic acid, but because they are themselves indigestible material.

2. Mechanical vibration is a very valuable feature of modern physiologic therapeutics. The vibration improves the circulation and the vitality of the parts treated. The benefits of this therapeutic agent are not as great as is claimed for many of the forms of vibratory devices exhibited on the market, some of which are mere toys.

3. It is impossible to make a definite prescription in such a case without an opportunity of giving the patient a personal examination. In general, the treatment of paralysis consists in hot and cold sponging of the paralyzed muscles, massage, electrical applications, general tonic baths, and the adoption of the outdoor life in order to raise the general vital resistance to the highest level possible. Moderate, passive exercise would also be beneficial (see the current numbers of GOOD HEALTH). It is important that the patient should have the proper diet and should give special attention to thorough mastication of the food. If there is any tendency to constipation, the colon must be thoroughly cleansed daily by means of the enema, as above described.

10,438. Tremor — Pain in Eyes — Ringing in Ears — Rice — Sage Tea, etc. — M. C., Michigan: "1. I am troubled with trembling of my back, with head shaking and ears roaring continually. Difficulty increases with the least effort to work, and is frequently accompanied by pain in the eyes. Advise cause, treatment, diet and whether there is danger of blindness. 2. Will food at times cause pain in the eyes as well as distress in the stomach? 3. Is rice a flesh-making food? 4. Is sage tea a blood restorer? 5. Does it have any effect upon the kidneys? 6. Where can mackintosh be procured to cover moist bandages, and what is the cost?"

Ans.—1. The symptoms described are too complicated for diagnosis or prescription without an opportunity of seeing the patient. You should consult a physician and get his opinion of the nature of the malady.

2. The pain may be due to the indigestion.

3. Yes.

4. No.

5. Infusions of all kinds are diuretic.

6. At any drug store. Ordinary oilcloth may be used.

10,439. Grain Foods. — F. E. B., Connecticut: "I depend upon whole-wheat, steamed and ground, to keep the bowels normal. Why does the Question Box advise constipated people to avoid grain foods?"

Ans.—GOOD HEALTH does not advise the disuse of grains, except in the form of mushes and gruels. Oatmeal mush especially should be named as a constipating food.

10,440. Pimples — Falling Hair — Olive Oil — Goiter. — A. T., Illinois: "1. Please tell me the cause of pimples on one who does not eat meat nor butter in any form. 2. What is the cause of falling hair in one subject to dandruff? 3. Is olive oil good for the hair? 4. What is the cause and cure of goiter?"

Ans.—1. The cause is probably a depreciated condition of the blood, arising from the absorption of poisons from the colon through retention of fecal matters. Of course, other causes may be active.

2. Both dandruff and baldness are due to the action of a parasite which invades the roots of the hair.

3. When the hair is abnormally dry, a small amount of oil of some sort is beneficial, but alboline or a refined quality of vaseline is preferable, as it does not become rancid.

4. Goiter is probably due to autointoxication in most cases. Some cases are curable by

rest, proper diet, and hydriatic and electrical applications. Some cases require operation. Every case should be placed under the care of a competent physician.

10,441. Bed-Wetting — Chronic Coryza.— J. D., Iowa: "1. Please advise remedy for bed-wetting on the part of a girl 13 years of age, otherwise in healthy condition. 2. Advise cause and remedy of intense activity of the nasal glands, the discharge being watery and at times slimy, never purulent. I do not use condiments, meat, liquor or tobacco, bathe regularly, am 75 years of age."

Ans.—1. A physician should be consulted, and the urine carefully examined. There are a number of causes which may be active. Which one is operative in this case could not be determined without a personal investigation.

2. The cause is probably chronic coryza, due to infection of the nose. A competent physician should be consulted.

10,442. Twenty-per-cent Gluten — Buttermilk and Potatoes — "Bromoline?" — K. F., Cape Town, Africa: "1. Is 20-per-cent gluten wholly absorbed or does it leave a residue? 2. Is buttermilk and potatoes an incompatible mixture? 3. Is "Bromoline" active in both acid and neutral media, and throughout the alimentary canal?"

Ans.—1. This food is almost wholly absorbed, practically no residue being left.

2. This is a good combination.

3. We know nothing about this drug.

10,443. Breathing Exercises. — H. R., California, who is about to leave California for New York asks whether he may continue the deep breathing exercises morning and evening in a colder climate without incurring danger to the lungs.

Ans.—Deep breathing is healthful in any climate. When breathing cold air, it is especially important to breathe through the nose, so that the air may be somewhat warmed before entering the lungs.

10,444. Inflammation of the Eyes — Protose. — E. R. J., Illinois: "1. What should be done for inflammation of the eyes? The use of hot water does not seem to relieve them. 2. Protose, especially the potted variety, does not agree with me. Most foods do. What is the cause of this in your opinion?"

Ans.—1. The use of cool or cold compresses is often found more efficient in acute inflammation than the use of hot water. Some eye lotion may be necessary, such as a weak

solution of boric acid (1 part boric acid to 25 parts water). You should consult a competent oculist.

2. Protose is a very concentrated food, rich in proteid and fat, and should be used only in moderate quantity.

10,445. Dates — Intestinal Indigestion. — T. R. P., District of Columbia: "I am troubled with intestinal indigestion, and have been accustomed to eating California persimmons before breakfast. Would dates, such as may be ordinarily obtained, take the place of persimmons for this purpose? Also advise as to the use of grape juice and olive oil for this condition."

Ans.—Steamed figs would probably be preferable to dates for this purpose. Fruit juices should be freely used. Olive oil in moderation will prove beneficial if it provokes no gastric disturbance. In some cases, where there is a deficiency of hydrochloric acid in the stomach, oil and other fats when freely used produce biliousness, interfering with gastric digestion.

10,446. Bad Smelling Perspiration — Quinine — Cracking of the Fingers. — F. A. W., Minnesota: "1. What is the cause and remedy of a disagreeable odor arising from perspiration coming from the arm pits? A formaldehyde solution has been recommended. Can this be safely used? 2. Please describe the effect of quinine on the system, especially the harmful effects when taken in doses the size of a pea twice a week. 3. Give the cause and remedy for cracking of the ends of the fingers in cold weather."

Ans.—1. The foul odor is doubtless produced by bacteria. A formaldehyde solution is likely to produce irritation of the skin. Try this lotion: Sulphur 1 part, alcohol 1 part, rose water 5 parts, distilled water 5 parts.

2. It is very likely that the use of the drug in this quantity would not produce any perceptible effects, unless it would be a disturbance of digestion. This drug is not to be commended, however, as it can not possibly be of any definite benefit, and it is a burden to the liver and kidneys.

3. The cause is probably excessive dryness of the air. Soak the fingers in hot water every night and rub in a little fine vaseline or olive oil.

10,447. Salts of Vegetables — Spinach — Celery — Time for Meals — Nut Butter. — J. W. G., California: "1. Do vegetables contain salts not found in fruits? 2. What is the foundation for popular belief that spinach has a medicinal value? 3. What is the food value of celery? 4. If one finds one meal a day sufficient, at what time should this meal be taken? 5. How many ounces of peanut butter are necessary to furnish food enough for one day for an adult? How much proteid?"

Ans.—1. No.

2. Probably the fact that it has a characteristic flavor and odor.

3. Celery contains salts which are useful in the bodily economy, though it offers practically no other element of value. In eating celery the woody part should be rejected, only the juice being swallowed.

4. This meal should be eaten between 10 and 2 o'clock. Two meals are better than one, however, as the stomach is likely to be overtaxed when but one meal a day is eaten. The ordinary stomach can not receive at one time the amount required for twenty-four hours without overtaxing it. One light meal and one full meal, or even three light meals, are better than one large meal. Exceptions to this rule must be very rare.

5. Peanut butter taken by itself is not a suitable food, as it contains an excess of fats and proteids. An ounce of peanut butter contains thirty-four calories of proteid, one hundred and twenty-four calories of fat, and twenty calories of carbohydrate, making a total food value to the ounce of one hundred and seventy-eight calories.

10,448. Dandruff — Constipation — Ringing in the Ears. — C. W. M., New York: "1. What is a good remedy for dandruff? 2. Please give me a list of laxative foods. 3. What is the cause of ringing in the ears?"

Ans.—1. The scalp should be carefully washed with hot water and green soap or resinol soap, followed by the application of a lotion consisting of 20 grains of resorcin to the ounce of alcohol.

2. The free use of acid fruits, sweet fruits, and sweets of all kinds, fat foods, and foods which leave a certain amount of undigested residue, are laxative. Cane sugar should be avoided. The best sweets are meltose or malt honey, ordinary bees' honey, and sweet fruits. The best fats are sterilized dairy butter and cream, yolks of hard boiled eggs, and olive oil. Avoid the use of mushes of all kinds and milk. The use of vegetable gelatine is also a good remedy for constipation.

3. The ringing in the ears is probably due to high blood-pressure.

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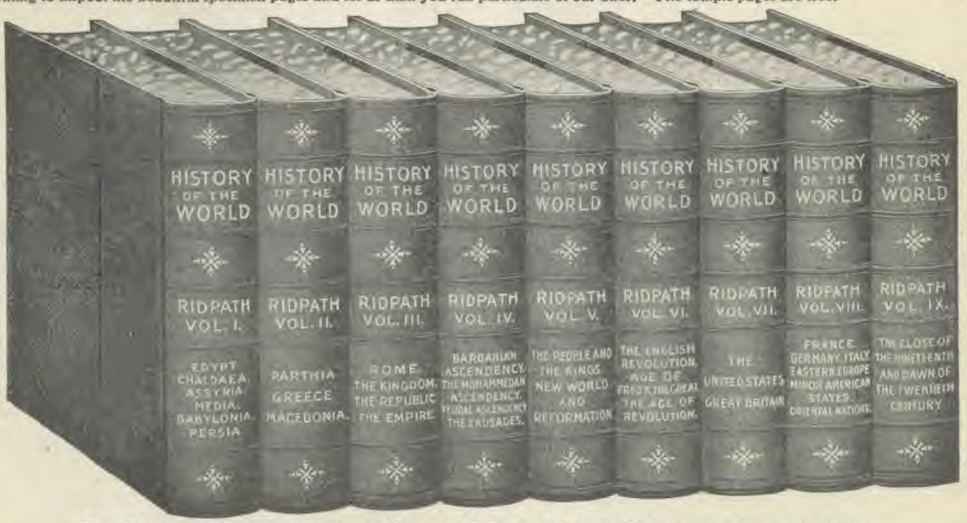

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