VOL. XLI *Edited by J. H. KELLOGG, M. D.* NO. 2

GOOD HEALTH

February, 1906

10 CENTS PER COPY. $1.00 A YEAR.

PUBLISHED MONTHLY

Entered at the Post-office in Battle Creek, Mich., as Second-class Matter.

CONSUMPTIVE?

Try cold air. It's cheap. It's Nature's medicine. Taken **soon enough it cures.**

Everybody knows by this time what the great cold-air cure has accomplished.

Hundreds have gone to Colorado to return home cured. Hundreds of others have slept in tents or out of doors and have thus successfully combated consumption. The secret of it all is crisp, invigorating, vivifying, cold air.

But perhaps **you** can't go to Colorado. Perhaps **you** can't live out of doors in cold weather. Some people can't, that's a fact. You may enjoy the advantage of the cold-air tonic just the same. **Study into this:—**

The Porte-Air

It brings cold air to you from out of doors as you sleep in your comfortable bed in your own room. It will fit any bed and any window. It will meet **your** needs.

Is your health worth the price of a stamp to investigate?

Our booklet tells all about Porte-Air. It's yours for the asking.

THE SANITARIUM,

Battle Creek, Michigan.

BETWEEN OURSELVES

(Our own page especially reserved to tell you a few things about "us")

"Don't use an ax For driving tacks."

* * *

It's just as hard to get well the wrong way as to put down a carpet with a pile driver. Common Sense is Nature's Trademark.

* * *

GOOD HEALTH has made a fair start upon the year 1906. Last month we made some resolutions.

The sum and substance is that we're going to get out a still better magazine.

And we're going to draw the GOOD HEALTH family still closer to the fireside. How? Well, that would be a long story. Just wait and see.

* * *

Cooking lessons for the women — and the men can profit from them, too — is one of the new advantages the family will enjoy this year. We said something about this last month, you remember. We are going to tell you how to regulate your meals to suit your body's requirements. Pay as much attention to the relation of one food element to another as you do to the relation of your necktie to your collar. It's a great deal more important.

* * *

The walking club won't disband. It has started with an excellent charter membership. The pages we are setting aside for the little tots, too, are going to be made brighter and better each month.

* * *

Special numbers will make their appearance this year from time to time. Those already arranged for are, as we announced, the Temperance and Anti-Narcotic number (this month), the Housekeeper's number (April), Outdoor Life (June), Invalid's number (August), Mother's number (July).

* * *

There are two varieties of "graft," apparently — Commercial and Political. Of these the former is the greater monster — the commercial evil is of the greater extent. Advertising is the favorite channel for commercial "graft."

The consciences of many publications have become aroused since attacks have been made on the commercial as well as on the political graft. GOOD HEALTH advertising has always been clean. The GOOD HEALTH family has always been protected.

* * *

A Madison (Wis.) member of the family writes: —

"DEAR GOOD HEALTH: Enclosed please find the sum of $1.00, to renew my subscription. You are a most welcome visitor, and have been for about thirty-five years."

* * *

Most people read nowadays **"to keep from thinking,"** is the conclusion of the sage humorist, Jerome K. Jerome, writing in the January *Woman's Home Companion.*

It's encouraging to us to know that people don't read GOOD HEALTH for that purpose. To read GOOD HEALTH is to think.

And if there was ever a time when people need to think about **health** it's now. GOOD HEALTH is for thinkers — and doers.

BOYS AND GIRLS!

$ $ $ $ $ $

What do those signs mean to you?

Possibly a new pair of skates, a new sled, or a foot-ball. Maybe books. Maybe — well, never mind. We can all use money.

We will start you in business free.

Write to us, saying, "I want to sell GOOD HEALTH." We will send you five copies free. Sell them for ten cents each. People will buy them fast enough. When you have sold them, you will have fifty cents. That is your money.

Then of course you will want to earn more money. We will send you five copies for twenty-five cents, ten copies for fifty cents, or twenty copies for one dollar. You sell them, and double your money.

This is just the chance you want to earn money after school and on holidays. And remember it doesn't cost you anything to start in.

Address: **GOOD HEALTH,**
Dept. M. Battle Creek, Mich.

WING PIANOS

Are Sold Direct From the Factory, and in No Other Way

You Save from $75 to $200

When you buy a Wing Piano, you buy at wholesale. You pay the actual cost of making it with only our wholesale profit added. When you buy a piano, as many still do—at retail—you pay the retail dealer's store rent and other expenses. You pay his profit and the commission or salary of the agents or salesmen he employs—all these on top of what the dealer himself has to pay to the manufacturer. The retail profit on a piano is from $75 to $200. Isn't this worth saving?

SENT ON TRIAL

Anywhere

WE PAY FREIGHT
No Money in Advance

We will place a Wing Piano in any home in the United States on trial, without asking for any advance payment or deposit. We pay the freight and all other charges in advance. There is nothing to be paid either before the piano is sent or when it is received. If the piano is not satisfactory after 20 days' trial in your home, we take it back entirely at our expense. You pay us nothing, and are under no more obligation to keep the piano than if you were examining it at our factory. There can be absolutely no risk or expense to you.

Do not imagine that it is impossible for us to do as we say. Our system is so perfect that we can without any trouble deliver a piano in the smallest town in any part of the United States just as easily as we can in New York City, and with absolutely no trouble or annoyance to you, and without anything being paid in advance or on arrival either for freight or any other expense. We take old pianos and organs in exchange.

A guarantee for 12 years against any defect in tone, action, workmanship or material is given with every Wing Piano.

Small, Easy MONTHLY Payments

In 37 years over 40,000 Wing Pianos have been manufactured and sold. They are recommended by seven governors of States, by musical colleges and schools, by prominent orchestra leaders, music teachers and musicians. Thousands of these pianos are in your own State, some of them undoubtedly in your very neighborhood. Our catalogue contains names and addresses.

Mandolin, Guitar, Harp, Zither, Banjo— The tones of any or all of these instruments may be reproduced perfectly by any ordinary player on the piano by means of our Instrumental Attachment. This improvement is patented by us and cannot be had in any other piano. WING ORGANS are made with the same care and sold in the same way as Wing Pianos. Separate organ catalogue sent on request.

YOU NEED THIS BOOK

If You Intend to Buy a Piano—No Matter What Make

A book—not a catalogue—that gives you all the information possessed by experts. It tells about the different materials used in the different parts of a piano; the way the different parts are put together, what causes pianos to get out of order and in fact is a complete encyclopedia. It makes the selection of a piano easy. If read carefully, it will make you a judge of tone, action, workmanship and finish. It tells you how to test a piano and how to tell good from bad. It is absolutely the only book of its kind ever published. It contains 156 large pages and hundreds of illustrations, all devoted to piano construction. Its name is "The Book of Complete Information About Pianos." We send it free to anyone wishing to buy a piano. All you have to do is to send us your name and address.

Send a Postal To-day while you think of it; just giving your name and address or send us the attached coupon and the valuable book of information, also full particulars about the WING PIANO, with prices, terms of payment, etc., will be sent to you promptly by mail.

WING & SON

350-370 West 13th Street., New York

1868——37th YEAR——1905

Cut or tear out this coupon and mail to us, after writing your name and address at bottom. We will promptly mail book and other information.

WING & SON

350-370 W. 13th St., New York

Send to the name and address written below, the Book of Complete Information about Pianos, also prices and terms of payment on Wing Pianos.

Our Health Waist

LONG WAIST

Design

Perfect

Quality

the Best

SHORT WAIST

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

We sell three qualities,—a medium weight jean twilled material, or lighter weight Batiste for summer wear, and a heavier weight sateen. White or Drab Jean or Batiste, bust measure 30 to 38, price $1.25; 40 and 42, $1.50; 44 and 46, $1.75. White or Drab Sateen, bust measure, 30 to 38, price $1.75; 40 and 42, $2.00; 44 and 46, $2.25. Black Sateen, bust measure, 30 to 38, price $2.09; 40 and 42, $2.25; 44 and 46, $2.50. All other measurements must be made to order, and cost 25c additional, which add to remittance. We carry in stock sizes from 30 to 42 inches bust measure, and in the even numbered sizes only.

When sending in orders for waist, *take the bust, hip, and waist measures snugly over the undergarments.* We have *long* and *short* waists. The latter end at the waistline, and the former five inches below, as per cuts. *When ordering state which is desired.*

We also carry Children's Waists in White or Drab Batiste. Price 50c. Sizes 18 to 28. The size of a child's waist is the measurement at the waistline. To determine the size required, take the measure over the clothing, and deduct two inches.

Address DRESS DEPARTMENT

GOOD HEALTH PUBLISHING COMPANY

115 Washington Avenue, North, BATTLE CREEK, MICHIGAN

SPECIAL OFFERS

BIBLES, Remit us $2.50

And we will send you GOOD HEALTH one year, and a $3.85 HOLMAN BIBLE, bound in Egyptian morocco with divinity circuit, red under gold, size 5¼x7¾. The type is bourgeois, 8vo., easy to read. Contains column references, fifteen maps, four thousand questions and answers on the Bible, concordance of nearly fifty thousand references, and a new illustrated Bible dictionary. We will send a smaller Holman Bible, size 4⅜x6½, with fine minion print, 16mo., in place of the larger size, if desired. Thumb index, 50c extra.

Send for our 1905 Catalogue.

COMBINATIONS

We will send GOOD HEALTH one year with the following for price set opposite each:

Life Boat	$1.00	Life Boat and Medical Missionary	$1.25
Medical Missionary	1.00	Vegetarian	1.25
Little Friend	1.10	American Motherhood	1.25
Bible Training School	1.00	Youth's Instructor	1.50
Atlantic Union Gleaner	1.00	Southern Watchman	1.25
Home, Farm and School	1.00	Signs of the Times	2.00

The *Review and Herald* may be included in any of the above offers by adding $1.50. New or renewed subscriptions accepted. All sent to different addresses if desired.

HEALTH BOOKS

We will send you any of the following named books, written by J. H. Kellogg, M. D., Superintendent of the Battle Creek Sanitarium, with one year's subscription to GOOD HEALTH and *Medical Missionary* for the prices set opposite each:

The Stomach, Its Disorders and How to Cure Them, cloth	$2.00	Man the Masterpiece, cloth	$3.50
Half-buff	2.50	Half-buff	4.00
Art of Massage, cloth	2.75	Library	4.25
Half-leather	3.50	Home Hand-Book, cloth	4.75
Ladies' Guide, cloth	3.50	Half-buff	5.25
Half-buff	4.00	Library	5.75
Library	4.25	Or Science in the Kitchen, by Mrs. E. E. Kellogg, in Oilcloth	2.25

Healthful Cookery, Paper, 1.00. Cloth 1.45

HAVE YOU A COLD?
DO YOU SUFFER WITH CATARRH?

TRY OUR MAGIC POCKET VAPORIZER

A simple, convenient instrument for the treatment of Catarrh, Colds, and all diseases of the nose, throat, and lungs.

Write for descriptive booklet and terms.

Price only $1.00

With one year's subscription to Good Health, new or renewed, only $1.25.

Address GOOD HEALTH PUB. CO.
115 Washington Ave. N. . . BATTLE CREEK, MICH.

SANITARIUMS

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

CALIFORNIA SANITARIUM, Sanitarium, Napa Co., Cal.

NEBRASKA SANITARIUM, College View, Lincoln, Nebr.
W. A. George, M. D., Superintendent.

PORTLAND SANITARIUM, West Ave., Mt. Tabor, Ore.
W. R. Simmons, M. D., Superintendent.

NEW ENGLAND SANITARIUM, Melrose, Mass.
C. C. Nicola, M. D., Superintendent.

CHICAGO SANITARIUM, 28 33d Place, Chicago, Ill.
Frank J. Otis, M. D., Superintendent.

IOWA SANITARIUM, 603 E. 12th St., Des Moines, Iowa.
J. E. Colloran, M. D., Superintendent.

TRI-CITY SANITARIUM, 1213 15th St., Moline, Ill.
S. P. S. Edwards, M. D., Superintendent.

PARADISE VALLEY SANITARIUM, City Office and Treatment Rooms, 1117 Fourth St., San Diego, Cal.
Sanitarium, Box 308, National City, Cal.

LOMA LINDA SANITARIUM, Loma Linda, Cal.
J. A. Burden, Manager.

TREATMENT ROOMS, 257 S. Hill St., Los Angeles, Cal.
J. R. Leadsworth, M. D., Superintendent.

GARDEN CITY SANITARIUM, San Jose, Cal.
Lewis J. Belknap, M. D., Superintendent.

MADISON SANITARIUM, Madison, Wis.
C. P. Farnsworth, M. D., Superintendent.

SPOKANE SANITARIUM, Spokane, Wash.
Silas Yarnell, M. D., Superintendent.

TREATMENT PARLORS, 137 Oneida St., Milwaukee, Wis.

TREATMENT ROOMS, 201 Granby Block, Cedar Rapids, Iowa.
R. L. Mantz, M. D., Superintendent.

BUFFALO SANITARIUM, 922 Niagara St., Buffalo, N. Y.
A. R. Satterlee, M. D., Superintendent.

NASHVILLE SANITARIUM, Cor. Church and Vine Sts., Nashville, Tenn.
O. M. Hayward, M. D., Superintendent.

PROSPECT SANITARIUM, 1157-1161 Prospect St., Cleveland, Ohio.
F. A. Stahl, Superintendent.

TACOMA SANITARIUM, 426 S. C St., Tacoma, Wash.
T. J. Allen, M. D., Superintendent.

COLORADO SPRINGS SANITARIUM, 126 N. Cascade Ave., Colorado Springs, Colo.
T. J. Evans, M. D., Superintendent.

KANSAS SANITARIUM, 3200 W. Douglass Ave., Wichita, Kans.
B. E. Fullmer, M. D., Superintendent.

UPPER HUDSON SANITARIUM, Hadley, N. Y.
E. F. Otis, M. D., Superintendent.

HINSDALE SANITARIUM, Hinsdale, Ill.
David Paulson, M. D., Superintendent.

TREATMENT ROOMS, 44 E. Main St., Middletown, N. Y.
A. J. Read, M. D., Superintendent.

TREATMENT ROOMS, 565 Main St., Springfield, Mass.
Chas. S. Quail, Manager.

ROCHESTER TREATMENT PARLORS, 156 Monroe Ave., Rochester, N. Y.

SEATTLE SANITARIUM, 1313 3d Ave., Seattle, Wash.
Alfred Shryock, M. D., Superintendent.

PEORIA SANITARIUM, 203 3d Ave., Peoria, Ill.
J. E. Heald, M. D., Superintendent.

LONE STAR SANITARIUM, Keene, Texas.
D. C. Ross, M. D., Superintendent.

GLENDALE SANITARIUM, Glendale, Cal.
W. Ray Simpson, Manager.

PENNSYLVANIA SANITARIUM, 1929 Girard Ave., Philadelphia, Pa.
H. B. Knapp, M. D., Superintendent.

SURREY HILLS HYDROPATHIC INSTITUTE, Caterham, Surrey, England.
A. B. Olsen, B. S., M. D., M. R. C. S., Supt.

LEICESTER SANITARIUM, 80 Regent St., Leicester, England.
F. C. Richards M. D., M. R. C. S., Supt.

CALCUTTA SANITARIUM, 50 Park St., Calcutta, India.
R. S. Ingersoll, M. D., Superintendent.

PLUMSTEAD SANITARIUM, Cape Town, So. Africa.
Geo. Thomason, M. D., L. R. C. S., Supt.

CHRISTCHURCH SANITARIUM, Papanui, Christchurch, New Zealand.

KOBE SANITARIUM, 42 Yamamoto-dori, Nichome, Kobe, Japan.
S. A. Lockwood, M. D., Superintendent.

GUADALAJARA SANITARIUM, Apartado 138, Guadalajara, State of Jalisco, Mexico.
J. W. Erkenbeck, M. D., Superintendent.

INSTITUT SANITAIRE, Basle, Switzerland.
P. DeForest, M. D., Superintendent.

SKODSBORG SANITARIUM, Skodsborg, Denmark.
J. Carl Ottosen, A. M., M. D., Superintendent.

SYDNEY SANITARIUM, Wahroonga, N. S. W., Australia.
D. H. Kress, M. D., Superintendent.

FRIEDENSAU SANITARIUM, Post Grabow, Bez. Magdeburg, Germany.
A. J. Hoenes, M. D., Superintendent.

KIMBERLEY BATHS, 32 Old Main St., Kimberley, So. Africa.
J. V. Willson, Mgr.

TREATMENT ROOMS, 58 Madison Ave., Detroit, Mich.
Dr. Jean A. Vernier, Manager.

Health Food Restaurants

Eating-houses where food prepared in accordance with the principles of rational dietetics and scientific cookery may be obtained are now open in the following places:—

RESTAURANTS.

The Pure Food Cafe, 13 S. Main St., Salt Lake City, Utah.

Hygienic Company, 1209 G St., N. W., Washington, D. C.

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

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

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

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

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

Good Health Cafe, 143 N. 12th St., Lincoln, Nebr.

Vegetarian Cafe, 19 East Bijou St., Colorado Springs, Colo.

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

Vegetarian Cafe, 814 Pine St., St. Louis, Mo.

Vegetarian Cafe, 1519 Stout St., Denver, Colo.

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

Vegetarian Cafe, 259 So. Hill St., Los Angeles, Cal.

Portland Sanitarium Rooms, Mt. Tabor, Oregon.

Restaurant, 2129 Farnum St., Omaha, Nebr.

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

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

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

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

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

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

STORES.

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

Battle Creek Sanitarium Health Food Depot, Chas. S. Quail, 565 Main St., Springfield, Mass.

Health Food Store, J. H. Whitmore, 118 Miami Ave., Detroit, Mich.

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

N. E. Sanitarium Food Co., 23 Wyoming Ave., D. M. Hull, Mgr., Melrose Mass.

Health Food Store, 156 Monroe Ave., Rochester, N. Y.

Nebraska Sanitarium Food Co., College View, Nebr.

IF YOU ARE INTERESTED and wish to save money, read our Magazine Offers this month. If you do not find what you want, let us know, and we will make you an offer on any combination you may want.

THE PINES IN WINTER

GOOD HEALTH

A Journal of Hygiene

VOL. XLI FEBRUARY, 1906 No. 2

MODERN SCIENTIFIC DISCOVERIES CONCERNING ALCOHOL

BY J. H. KELLOGG, M. D.

ALCOHOL is a chemical agent, colorless when pure, very inflammable, burning with a pale blue flame. It is closely allied to such chemical compounds as naphtha, turpentine, benzine, fusel oil, kerosene, and burning fluid. It is seldom found pure, usually containing from two to fifty per cent of water, besides various impurities, chief among which is fusel oil, another variety of alcohol. The active chemical properties of alcohol render it not only unfit for introduction into the body, but actually dangerous when in a pure state. It destroys instantly all living tissues with which it comes in contact. Absolutely pure alcohol is almost as destructive as caustic when brought in contact with unprotected living tissues.

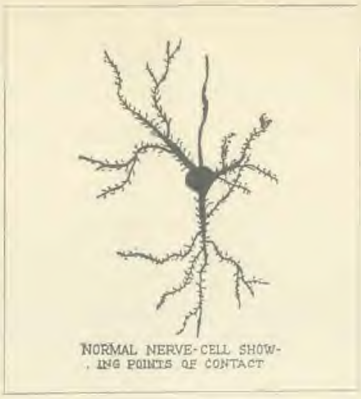
Alcohol is a poison to plants. Vital properties are very much the same in a general way, whether manifested in a mushroom or a man, and any substance which will destroy the life of a plant is not likely to be wholesome for human beings. If a plant be watered with a weak solution of alcohol, its leaves soon wither, turn yellow, and the plant dies, even when the proportion of alcohol is so small as one part in one thousand parts of water. When a sundew is exposed to the vapor of alcohol, it quickly becomes stupefied and incapable of manifesting its wonderful ability to catch small insects. Prolonged exposure to air saturated with vapor of alcohol destroys the life of the plant.

Alcohol is a poison to animals. A tadpole dropped into a vessel containing alcohol will die in a minute. Leeches and other small animals die in like manner.

A French physician administered alcohol in the form of brandy and absinthe to fowls. The animals took kindly to the use of stimulants, and soon became so addicted to them that it was necessary to limit them to a daily allowance. In two months absinthe drinking killed the strongest cock; the brandy-drinking fowls lived four months and a half, while the wine drinkers held out three months longer. But all finally died the death of the drunkard. The late Professor Dujardin-Beaumetz, one of the leading physicians of the world, in experiments upon pigs, found the effect of alcohol to be uniformly that of a poison.

P. Cololian, an eminent European investigator, has shown by experiments upon fish that all the alcohols are a deadly poison. He pointed out the impressive fact that while certain poisons, such as nicotin and atropia, may be taken by certain animals, as rabbits and goats,

without injury, alcohol is a universal poison. It kills everything with which it comes in contact, animal or vegetable.



NORMAL NERVE-CELL SHOWING POINTS OF CONTACT

Alcohol is a poison to human beings. Notwithstanding the apparent impunity with which diluted alcohol in the form of various liquors may be taken, pure alcohol is rapidly and certainly fatal when taken into the stomach without dilution. Cases of instant death from drinking a considerable quantity of strong liquor have often been recorded, and such cases are constantly occurring in every large city. Alcohol in every form is a poison, the rapidity of its effects being largely determined by the degree of dilution in which it is introduced into the system.

Alcohol is a narcotic. Its first effects are excitant; but like most other substances of similar nature, its secondary and more prominent effect is narcotic. It benumbs the sensibilities. Persons who have died from an overdose of alcohol present all the symptoms of narcotic poisoning.

A tablespoonful of strong alcohol held in the mouth for two or three minutes, will obtund the sense of taste so as to render a person unable to distinguish between sweet and sour, saline and bitter. If taken in sufficient quantity, it will relieve the sense of pain sufficiently to enable a surgeon to perform an operation with little or no suffering on the part of the patient. Ether and chloroform are made from alcohol. Alcohol, like ether, is an anesthetic.

Degeneration of the muscles, heart, brain, nerves, liver, stomach, kidneys, and, in fact, all the organs of the body, is induced by the habitual use of alcohol. Dr. Carpenter is authority for the assertion that the changes in the corpuscles and in the fibrin of the blood take place when not more than one part of alcohol to five hundred of blood is employed. Thus it will be seen that the very weakest wines are unsafe, since none of them contain less than from three to five per cent.

The brain, in its normal condition, is so soft that it would not retain its exact form but for the support of the skull. The sharpest knife is required to cut it without mangling its structure. It is necessary to immerse the organ in alcohol for weeks or months in

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

order to harden it, when a careful examination is essential. A drunkard's brain presents a marked contrast. It is already hardened. A celebrated anatomist declared that he could tell a drunkard's brain in the dark by the sense of touch alone.

By means of delicate instruments it is possible to measure the exact length of time it takes a person to feel, to think, to see, to hear, and to act. A careful experiment made for the purpose of determining the influence of alcohol upon these various senses and upon mental activity showed that the length of time required was more than doubled as the result of taking two ounces of whisky. This clearly shows the paralyzing influence of alcohol upon the brain and nerves.

Recent researches have shown that when alcohol is introduced into the circulation, some of the delicate nerve cells almost immediately become shriveled, misshapen, and incapable of performing their duty. The delicate arms by which the nerve cells come in contact with each other, thus making possible the various functions of mind, memory, reason, judgment, etc., become retracted, so that the contact of the various cells is more or less completely interrupted by the changes in shape which take place, and irregular and abnormal contacts may be made. This fact explains the delirium, hallucinations, and other mental disturbances, as well as changes of character, which occur in those who make free use of alcoholic beverages. When the use of alcohol is habitual, large numbers of the cells and the brain, mind, and character become permanently damaged.

In view of the above facts, it is clear enough that alcohol can be of no use as a food, and that its habitual use must be attended by the most baneful consequences.

MIDWINTER

THE speckled sky is dim with snow,
The light flakes falter and fall slow;
Athwart the hill-top, rapt and pale,
Silently drops a silvery veil;
And all the valley is shut in
By flickering curtains gray and thin.

But cheerily the chickadee
Singeth to me on fence and tree;
The snow sails round him as he sings,
White as the down of angels' wings.

I watch the slow flakes as they fall
On bank and brier and broken wall;
Over the orchard, waste and brown,
All noiselessly they settle down,
Tipping the apple-boughs, and each
Light quivering twig of plum and peach.

All day it snows: the sheeted post
Gleams in the dimness like a ghost;
All day the blasted oak has stood
A muffled wizard of the wood;
Garland and airy cap adorn
The sumac and the wayside thorn,
And clustering spangles lodge and shine
In the dark tresses of the pine.

Still cheerily the chickadee
Singeth to me on fence and tree:
But in my inmost ear is heard
The music of a holier bird;
And heavenly thoughts as soft and white
As snowflakes on my soul alight,
Clothing with love my lonely heart,
Healing with peace each bruiséd part,
Till all my being seems to be
Transfigured by their purity.

—*John Townsend Trowbridge.*

THE NATIONAL DRINK OF MEXICO

DRUNKENNESS was said by Dr. Bowditch to be a vice of the temperate zone, but it is certainly not confined to northern regions. The highly spiced dietary which somehow seems to prevail in all tropical countries, is conducive to a thirst which demands something stronger and more stimulating than pure water for its satisfaction.

The diet of the Mexicans is especially unhygienic, as is witnessed by the everywhere prevalent dyspepsia,—notably gastritis. Their diet consists very largely of spiced foods fried in lard, accompanied with a fiery concoction of red and green peppers. It is therefore little wonder that the pulque vender, or seller of the national intoxicating beverage, is omnipresent, and that the pulqueria,—gaudily decorated saloon where pulque is sold,—is found on every street corner.

Every visitor to Mexico knows something of the pulque, if it is only the smell, which Humboldt describes as "the odor of putrid meat, extremely disagreeable." So profitable is the pulque industry, by reason of the excessive use made of it by the Mexicans, that miles and miles of acres are surrendered to the cultivation of the maguey plant, from which this pestiferous production is made.

The maguey plant is a species of aloe, with broad, green leaves. It takes from eight to ten years to ripen, and the *agua miel*, the sweet liquid used for pulque making, can not be obtained from it until the plant is ready for the development of the flower stalk. It is then made to yield its heart for the delight and ruin of the Mexicans. When the leaves have been stripped of their bayonet-like thorns, the heart of the plant is cut in such a way as to form a large bowl or cavity, about the capacity of two water-pails, which receives the sap from the entire plant. In eight days' time the cavity is filled with a sweet, milk-like fluid, and the vegetable cow is ready for milking.

The juice is removed two or three times a day, after the first eight days, being sucked through a tube into a vessel, usually a sheep- or pig-skin. A single plant produces about a gallon a day for three or four months. As the maguey plantations are in the most arid ground, this abundance of juice is the more astonishing.

The Mexican prefers his pulque fermented in a raw oxhide

GATHERING THE JUICE FROM THE MAGUEY PLANT

PULQUE SHOP (PULQUE IN SHEEPSKINS IN THE FOREGROUND)

which is stretched like a hammock in a wooden frame, with the hairy side uppermost, left slack, enough to hold the requisite quantity of liquid. This method gives the pulque a tannery-yard or glue-factory fragrance, with, presumably, a corresponding flavor. A little of the old pulque is added to the new juice for fermentation, and a very disagreeable odor is given off during the process by the curdling liquid. It is drawn off into barrels, and is then ready for the pulquerias. It is also carried about in sheepskins by stalwart peripatetic pedlers.

Pulque is enormously consumed as a daily constant beverage. The chief business of the railroad in some parts of Mexico seems to be the transportation of pulque, which may be had everywhere, by the tumblerful, pigskinful, hogsheadful, and freight-carful.

The liquor, which resembles thin buttermilk in appearance, is tossed off like beer. The taste for it is, needless to say, an acquired one. Foreigners are broken in on "pulque compresto"— pulque flavored with some kind of fruit juice. Its effect on an uninitiated palate is thus described by a foreigner: "A more disgustingly smelling and tasting substance than it is when old, the depravity of man has never yet discovered. Rotten eggs are fragrant to its odor, and pigs' swill sweet to its taste. It has a sweet cider taste in the days of its youth, but this rapidly corrupts, as that does, only worse, the climate being hotter, into a sour, stinking, abominable beverage."

A large white caterpillar which inhabits the plant is considered a delicacy by the poorer Mexicans. On being told of two animal products associated with the maguey tree, a white rat and a white worm which thrive on its juices, a traveler who had sampled the pulque replied that "fried worms and broiled rats would make a proper accompaniment to pulque drinking."

The Indians who throng the pulquerias on Sundays and holidays, are passionately fond of pulque, and drink it to excess. Here and there one may be seen intoxicated with the beverage. The spirit does not seem to affect the head, beyond making the drinker merry, but it

GRINDING COFFEE

takes away all control of the legs, and one so intoxicated has to sit down in the street until he regains their use.

The fiery spirit called "mescal," which is distilled from a different kind of maguey, renders those who use it ferocious, and a resort to knives usually ends their drunken quarrels.

TEMPERANCE

BY MARY WOOD-ALLEN, M. D.

I WAS at one time a guest for a week in the home of one of our most earnest workers in the W. C. T. U. At breakfast I was offered coffee, and at dinner and supper, tea,— all of which I declined. The second morning, as I refused coffee, my hostess said to me, with some sharpness,—

"Are you going to preach to me at every meal in regard to the use of tea and coffee?"

"Preach to you," I said, "why, I haven't said a word."

"I know it," she replied, "but you preach every time you refuse a cup. I suppose you think that we temperance workers should not use tea or coffee, but I could not begin to do my work without it, and just think what it would mean to go through the strain of a State or National convention without these drinks."

I smiled as I replied, "Yes, and think what it would mean to a man to go through the strain of a political convention without alcoholic drinks!"

"You don't mean to compare tea and coffee with alcohol?" she exclaimed.

"I believe science places them quite in the same category," I answered,—"as nerve poisons and narcotics. I fear if the truth were told, we should find that we temperance women are a great deal more anxious to take the 'bottle from our neighbor's lips' than the cup from our own."

No doubt the great majority of men and women who brace themselves up for the day's work with their cup of coffee or tea, fail to recognize that this is actually their form of morning dram; that they are relying upon stimulation to enable them to get through with their day's work.

I once heard a physician refuse a cup of coffee with the words, "No, indeed; I am too wise to begin the day with a stimulant."

Dr. Emmett, the well-known New York physician, declared that a large proportion of the ailments of women is due to the use of tea and coffee, and asserts that if we could bring them out from under the influence of these nerve poisons, we should have taken the first and most important step toward a cure of their ailments.

Understanding the deleterious effects of tea and coffee, one must feel a sense of deep regret at seeing mothers beginning the tea and coffee habit in their little children.

I remember once sitting at a farmhouse table abundantly supplied with the best of milk. The mother sat with her six-months-old baby in her arms, and every few moments gave it a teaspoonful of coffee out of her cup.

"Why don't you give the baby milk instead of coffee?" I asked.

"Oh, it is too much trouble," was the reply. "Besides, the baby likes coffee."

It is quite evident that the beginning of a species of intemperance may be made in very early infancy. In Germany I have seen mothers give their infants beer, and because the baby smacked its lips, the mother claimed that beer was the normal drink for babies.

But other kinds of intemperance are begun in early childhood. The baby who is fed every time it cries, is being taught to put something into its mouth for the alleviation of pain or discomfort. The same child, doubtless, a little older grown, will be soothed, when hurt, by apples, cake, or candy; and so the good Christian mother who prays earnestly that her child be led not into evil, is, in reality, teaching the child self-indulgence, and to look to the pleasures of taste as a solace for physical discomfort. It will not be surprising if the child so educated, later in life turns to some form of gustatory pleasure in order to forget anxieties.

The most easily obtainable of these narcotics is tobacco, and the next is alcohol. So through the mother's own teaching the boy may be led to visit the saloon, where he will find that which will temporarily drown his discomfort or quiet his pain.

The use of highly seasoned foods produces an irritation of mucous membrane, which calls for alleviation, and this thirst provoked by home cookery may find its quietus in the saloon. The root of the temperance question may be found in the home kitchen.

The use of alcohol in home cookery may also be the origin of a love for alcoholic beverages later in life. The brandied puddings, the wine sauces and jellies, and the mince pies flavored with brandy, are all lessons in the love for alcohol. But many a mother who has discarded, as she supposed, all alcohol from her dietary, still furnishes it to her fam-

ily in the shape of cider or home-made beers. I knew an ardent prohibitionist who said that he was in the habit of putting a barrel of cider in his cellar in the fall, and allowing his boys to drink freely of it for three weeks, after which he felt sure that it had become deleterious through fermentation. The makers of apple jelly tell us that in three days' time the fermentation of apple juice has proceeded to such an extent that it will not jelly. Therefore, if cider is to be used as a temperance drink, it must be taken as soon as expressed, for if it remains standing open to the air, fermentation begins immediately. Physicians who live in communities where cider forms a daily beverage, tell us that the most ill-tempered and ungovernable drunkards are cider drunkards, and that the most unmanageable cases of delirium tremens come from those who are habituated to the use of hard cider. Home-made beers are supposed by many to be entirely innocent. As one good W. C. T. U. woman said to me, "I know this has no alcohol in it, for I made it myself, and I put none into it."

"How did you make it," I asked.

"Why, I bought a package of roots and put them to soak in water with sugar and a little yeast."

"Why did you add the yeast?"

"Because the directions said so."

"And do you not know," I inquired, "that the yeast was added to produce fermentation, and fermentation is the process of making alcohol, and that your root beer has itself produced alcohol, so that you are furnishing your family with an alcoholic beverage?"

She was very much surprised and quite horror-stricken at the revelation.

Many of our people do not understand that yeast germs are floating in the air, and that if sweetened fluid is left in a warm atmosphere, it will soon begin to ferment, and that fermentation is the making of alcohol.

The home medicine chest very generally contains brandy, whisky, or some form of alcohol; and the good mother feels that this is an absolute necessity in the treatment of diseases, although not allowable as a drink. Many good temperance people are taking patent medicines which are, to a very large per cent, alcoholic. These good people fail to recognize the fact that the apparent improvement manifest after taking the medicine is simply alcoholic stimulation. Such a revelation has been made along this line during the past year by Editor Bok, of the *Ladies' Home Journal*, and various other editors, that it is scarcely necessary to enlarge upon this point. The government has now issued an edict that certain medicines which are so manifestly alcoholic that they are scarcely doctored with any drug or herb, must have licenses taken out for their sale as venders of alcohol. In England the law compels the manufacturers of medicines which are poisonous in their nature, to print that fact upon the label. Under this law Mrs. Winslow's Soothing Syrup is marked as poisonous. That it contains alcohol, can be demonstrated by any one who will take the trouble to distill a bottle of it, for each bottle contains alcohol enough to make a flame which will burn for several seconds. It also doubtless contains opium. One of our most prominent W. C. T. U. workers has been demonstrating the alcoholic nature of the well-known patent medicine, Peruna, by distilling it in the presence of audiences and burning the alcohol obtained.

There are, however, many other forms of intemperance indulged in by those who are absolutely total abstainers from alcohol in every form.

The modern business man is intemperate in his haste to be rich. He gives himself the smallest possible moment of time for his midday meal, and every waking moment is absorbed in the thought of business. He has no time for companionship with his wife and family, and, in fact, many business men are almost entirely unacquainted with their own children. I read the other day of such a business man walking with a friend and meeting a nurse with a baby carriage. The friend stopped to admire the child, and the business man said, "I believe we have a baby about that age at our house." "Yes," said the nurse, "this is your baby."

Women are equally intemperate in their forms of work, not realizing that they may be as dissipated in the adornment of themselves or their houses as if they were indulging in drink.

People are intemperate in speech, not only in the matter, but in the manner. We talk loud and fast, and use up a great deal of nervous power in needless gesticulations. We wear ourselves out by our emotions. We are disturbed by little things, and use many needless words in fretting over infinitesimal annoyances.

In the January number of the *Woman's Home Companion*, Jerome K. Jerome brings a charge against reading as a species of modern dissipation. He says the young girl, forbidden the saloon and café, muddles her brain with books instead of drink. "Our ancestors," he says, "brewed themselves a bowl of punch. We subscribe to the circulating library. The result aimed at is the same,— to be taken out of ourselves. Books have become a modern narcotic."

It would be well if we would give to the word "temperance" a broader significance than we are apt to do. The real meaning of the word, according to the Standard Dictionary, is, "Suppression of any tendency to passionate action; the spirit and practise of rational self-control."

THE REMEDIAL VALUE OF WORK, OR THE MOVEMENT CURE

BY LOIZA ELWELL, M. D.

OUTDOOR life is conceded to be the physical regenerator for the human race. This in itself, however, is not sufficient; it should have combined with it proper diet and physical exercise. The experience of those who have established fresh-air colonies for the treatment of tuberculosis, has proved that those who are able to engage in physical exercise of some kind make the greatest progress.

There was a time when manual labor was considered degrading. But that class whose lot was such that it necessitated their toiling for a living were freer from sickness, and were the backbone of their country. We now frequently see parents working beyond their strength to educate their children, so that they will not have to work so hard as their parents have had to in order to gain their livelihood. The results are not always satisfactory; for too often we find their education is such as to render them wholly unfit for simple, practical life.

The tendency of the day seems to be to contrive some way by which we may get along with the least physical effort

ONE OF THE BEST CHOLAGOGUES

possible. The many machines and labor-saving devices now on the market are evidence of this tendency.

The construction of the human body is such that inactivity and disuse mean decay and eventually death. The octogenarian whom one occasionally meets, in accounting for his ripe years and present good health, makes much of the fact that he has daily engaged in work. Others who proudly boast that they have never been sick a day in their life, attribute it to the fact that they have freely labored. Thus we see that work is a preservative of health. Not only is it beneficial to the well, but for those suffering from general nervousness or neurasthenia, its remedial value can hardly be overestimated.

But many think that their present poor health is due to the fact that they have overworked. Work in itself could never bring such dire results. It is too constant application, insufficient exercise, poor food, etc., that cause the break. The nervous system in such cases is very susceptible to impulses, and responds readily to stimuli, whether they be motor, sensory, or of perception. As a result of the wear and tear to which the nerves of an ordinary society person are subjected, they become irritated and inflamed, and finally so tired out that they perform their functions very imperfectly, if at all. A train of evils follows, of which the end is hard to foresee. In no place is this impaired function more noticeable than in the circulatory system, and congestion of the abdominal viscera is most likely to result. The liver becomes torpid and the sense of well-being is lost. Instead of turning to the medicine cabinet, which now seems to be an essential feature of every lady's boudoir, and taking therefrom a dose of calomel, how much better it would be to engage in some plain task that would require a posture and movements that would cause compression of the liver. This would facilitate the emptying of the large veins, thus relieving the congestion.

A very important thing to be eradicated

GETTING UP APPETITE JUICE

in such people is introspection; their thoughts seem to be continually upon themselves. If they have not the headache in the morning, they are sure they will have it by noonday. Any future plans are made with the proviso that all will depend on their being well enough. For such people there is nothing better than to engage in manual labor.

Thrice blessed is he whose work calls him from the close confines of a room to the outdoors, especially at this season of the year, which is resplendent with opportunities for regaining squandered health. Twenty minutes spent in sawing wood in the morning would lift one up for the day. The respirations would be deepened and quickened. This would mean that the diaphragm would make greater excursions, thus compressing the abdominal viscera, and promoting the onward flow of blood to the heart.

Improvement in this one thing alone would mean a long stride toward health. The blood stream would be hastened through the lungs, resulting in a more complete oxidation. Nourishment would be better distributed to the different parts, which would mean that they were better repaired. The appetite would be improved so that plain food for which they once had no craving would now be eaten with a relish. The complexion would become clear, the cheeks rosy, and the whole general appearance would be greatly improved.

Not only is the body benefited, but the mind is helped, and they are relieved of their suspecting nature.

INCREASING HER BANK ACCOUNT OF HEALTH

The time is here when physicians' prescriptions for a certain class of patients will be to engage in a discreet amount of work, stopping short of the fatigue limit. The benefit gained is a remuneration that can not be valued in dollars and cents.

The magical fountain for restoring lost health lies not in some unknown land, but on your own premises. Only lift up your eyes and look, and you will see that you are surrounded with opportunities for making investments that will daily declare dividends of health.

"Let us be glad of life because it gives us a chance to love and to work."

"LABOR is rest from the sorrows that greet us;
Rest from all petty vexations that meet us;
Rest from sin-promptings that ever entreat us;
Rest from world-sirens that lure us to ill.
Work, and pure slumber shall wait on thy pillow,
Work, and thou shalt ride over Care's coming billow;
Lie not down wearied 'neath Woe's weeping willow:
Work with a stout heart and resolute will!"

HOW WOULD YOU EDUCATE A BOY TO SHUN INTEMPERANCE?

BY MRS. E. E. KELLOGG

TO my mind, the best way to educate a boy to shun intemperance, is not through efforts to give him a mental conception of its evils, but to educate the whole of his threefold nature to operate in harmony with the Divine laws of his being, particularly his *will* and his *appetite*. If I were the boy's mother, I would aim to educate him to make appetite his servant rather than his master, by providing him a simple, unstimulating dietary, knowing that it takes seed-sowing to produce a harvest, and that unrestricted pleasuring of the sense of taste may establish a dominance of appetite which, indulged in one direction, will be hard to restrain in others. If I were the boy's father, I would teach him from earliest childhood to respect his body as the image of the Divine Creator lent to him for his temporary use, to be returned pure and undefiled to his Maker, and that he has no right in any way to cripple or abbreviate its usefulness.

If I were the boy's father, mother, or teacher, I would instruct him concerning the marvelous structure of his body, showing him by picture, chart, model, and experiment as plainly as possible how "fearfully and wonderfully" it is made, and then portray in the most vivid manner possible the extent of injury done to this masterpiece of divine workmanship through the use of alcoholics, tobacco, opium, and other narcotics.

If the boy has inherited a nature morbidly susceptible to temptation, ready to fall at the slightest provocation, then with special care and watchfulness it should be the aim to build up the wall within at the points where it is weakest, and so surround the boy with and accustom him to such an atmosphere of temperance in all things that he can not breathe freely in any other.

The training must be positive, as well as negative. The positive side in diet will mean to teach the boy, first, the duty of thorough mastication, to chew his food at least four or five times as long as food is ordinarily chewed. Second, to make a selection of such foods as will make pure blood and a strong healthy body. This will exclude flesh foods of all kinds, irritating condiments such as mustard, pepper, peppersauce, horse radish, hot sauces of every description, such indigestibles as pickled green olives and every other sort of pickles, preserves, fried food, rich pastry, confectionery, and other dietetic abominations which are antagonistic to good digestion and hence to good morals. The cultivation of an appetite for abnormal foods results in a perversion of the natural instinct, arousing morbid and pernicious desires and cravings. This is one of the strongest of all the leading-strings to intemperance.

Alcohol exercises a double spell over its victims. It is first a nerve tickler, creating felicitous sensations; later, when its consequent effect appears, it becomes a comforter, putting to sleep all the body sentinels,— pain, hunger, and every sort of bodily distress. Even the upbraidings of conscience are stifled by the anesthetic spell which this competent drug casts over its unfortunate victims. The only safe place for the boy, girl, man, or woman is that of harmony with Nature, which means to be in harmony with

God's laws. Into this refuge the victim of intemperance may run and be safe; and every boy is proof against the allurements of the intoxicating cup so long as he remains in the stronghold of simplicity and naturalness.

The physical education of the boy must, however, include something more than naturalness in diet. The muscles must be trained by vigorous out-of-door life. Agriculture is a powerful antidote for the wiles of the poison habit. Agricultural laborers are, as a class, temperate. The idleness and sedentary life of the city have a strong tendency to intemperance. Cities are strongholds of King Alcohol. If the city vote could be eliminated from politics, the strongest sort of prohibitory legislation could be secured at once. Gymnastics, swimming, bicycle riding, and especially manual training and sloyd, are highly valuable as preventive means.

The mental and moral training must include, first of all, the inculcation of Bible and Christian ideals from earliest infancy. The principles of the Book of books must be so interwoven with the boy's intellectual development that they shall become his standards of judgment and his rule of conduct in all his relations in life. Care must be taken that his associations are right. Even in early boyhood this is important. No boy should be allowed his own associations, either on the street or in school, or elsewhere.

A love for books should be cultivated, and the best books should be placed in his hands.

The thought should constantly be held before the boy that he is responsible to God, who has created him in His own image, and has made him to be a witness for him in the world, and that the greatest possible comfort, happiness, and satisfaction can be attained only by a life tuned in harmony with the Infinite One, with every faculty devoted to the glory of God and the betterment of man.

A FOURTH-GENERATION VEGETARIAN

BY GEORGE M. WRIGHT

THE president of the Vegetarian Society of America, a vegetarian of over sixty years' standing, rejoices in the belief that he is growing younger. As one of the fourth generation, although but twenty-two years of age, I am almost inclined to consider myself as one of the old vegetarians. Never do I feel entitled to the distinction of being a curiosity. That we will leave to those who have not profited under the influence of vegetarianism, for they are the ones who are living unnaturally.

It is, obviously, most improper to speak of vegetarianism as one of the fads of modern times. The practise is founded upon the principle that the lives and liberties of the lower order of animals are as sacred to them, and should be to us, as what we term our rights. They do not conflict with those of the human race, and man, in assuming that dominion over the beasts confers right of destruction at his pleasure, overlooks the fact that, as a higher power, his duty is to treat them with the kindest consideration and goodwill. The term vegetarianism therefore covers humanitarianism, and every one who is a humanitarian ought to be a vegetarian.

Far from implying a decadence in health and endurance, the proper appli-

cation of the principles of diet reform results in a vast benefit all around to bodily health and physical development. This fact has been brought

GEORGE M. WRIGHT

home to me in a forceful way through observing results of long-distance walking. I have been induced to believe that opposition on the ground that flesh food is necessary to maintenance of health, strength, and endurance, is unfounded. That the hygienic combines so well with the ethical reason strengthens my conviction that vegetarianism is at once natural and right.

Long-distance walking is considered one of the best tests of a man's endurance, and the remarkable exhibitions made in recent years by vegetarian walkers in Germany and England, especially, deserve the recognition of those who are holding aloof on the claim for proof upon this very essential point.

I never had inducements of any kind in the nature of a prize or wager, but walked simply as a recreation, for the pleasure, and am glad to note that results have justified their use in connection with vegetarian discussion along this line. Much astonishment has been occasioned among friends who likewise enjoy pedestrianism, but are not as yet vegetarians, at the small allowance of food consumed in my most successful walk,— one from Camden, N. J., to Atlantic City, N. J.,— 59 miles in 13.28 hours, gross time. That I can walk alone just as well as, if not better than, in company, shows that the stimulus of cheerful companions did not figure in the result. My longest continuous walk is one from Philadelphia, Pa., to Jersey City, N. J., about 85 miles, the entire time being 22.04 hours. These figures are given incidentally, to show that one descended from a vegetarian family, who has devoted no time to special training, has energy to spare; and I hope that, in its small way, the above recital may tend to convince that a vegetarian dietary supplies all requirements of our physical nature, and, besides, is satisfying to the desire for justice and fair play which all the world admires.

(By Henry S. Clubb, pastor of the Bible Christian Church, Philadelphia.)

Mr. George M. Wright has descended from the Rev. Wm. Metcalfe on his mother's side. His mother was the daughter of the Rev. Joseph Metcalfe, who was son of the Rev. Wm. Metcalfe, the founder of the Bible Christian church of Philadelphia. He became a vegetarian in 1809, being then twenty-one years of age. In regard to this period of his life, the Rev. Wm. Metcalfe wrote as follows: —

"My friends laughed at me and en-

treated me to lay aside my foolish notions of a vegetarian diet. They assured me I was rapidly sinking into consumption, and tried various other methods to induce me to return to the customary dietetic habits of society; but their efforts proved ineffectual. Some predicted my death in three or four months; and others, on hearing me attempt to defend my course, hesitated not to tell me I was certainly suffering from mental derangement, and if I continued to live without flesh food much longer, would unquestionably have to be shut up in some insane asylum. All was unavailing. Instead of sinking into consumption, I gained several pounds in weight during the first few weeks of my experiment. Instead of three or four months bringing me to the grave, they brought me to the matrimonial altar. I dared even to get married; and I am thankful to our Father in Heaven that my mental operations have up to this day been such that I have never even seen the interior of an insane institution."

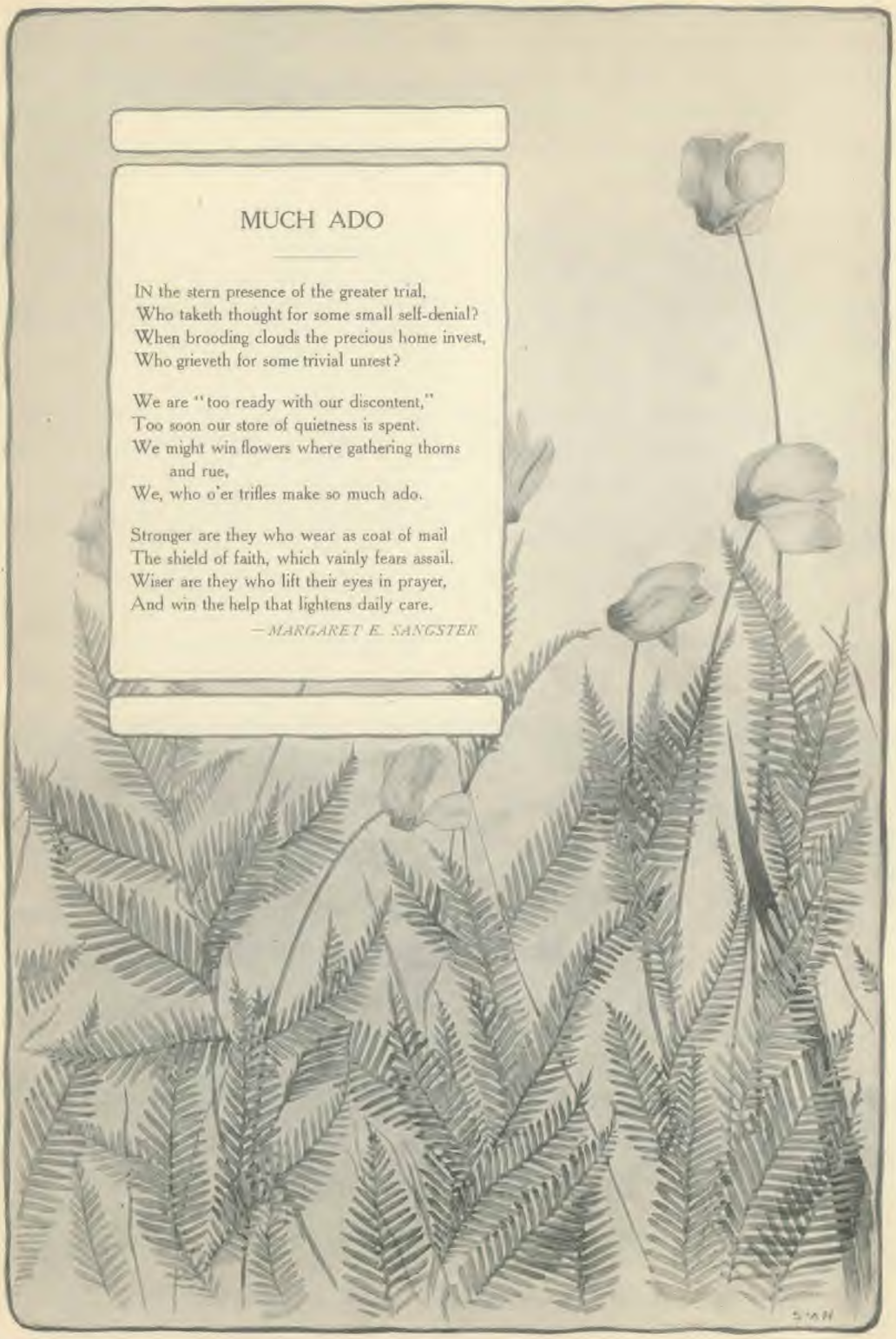
Mr. Wright's grandfather was the Rev. Joseph Metcalfe, who never tasted flesh as food. His mother, Sarah Metcalfe, was likewise a devoted Bible Christian and total abstainer from flesh, so that he is the fourth generation of vegetarians, and the third of life-long vegetarians on his mother's side. His great-grandmother, Mrs. Wm. Metcalfe, was a daughter of Rev. Joseph Wright, who became a vegetarian through the influence of the Rev. Wm. Cowherd, the founder of the Bible Christian church in England, with whom he corresponded several years, both being then ministers of the New Jerusalem church and admiring students of Swedenborg's writings and example as a vegetarian. Whatever tendency to "consumption" may have been manifested when Rev. Wm. Metcalfe became a vegetarian, it is evident that it was overcome by his careful habits of diet, as he lived until his seventy-fifth year without any further symptoms of that disease, and none of his children appeared to inherit it, as they followed his example as to their dietetic habits.

Mr. Wright's infancy and childhood appeared unpromising, and none of his relatives and friends expected he would ever be able to be a special instance of strength and endurance, but by a persistent adherence to principle, he has developed into a young man of remarkable vigor and strength for long-continued exertion.

FALL! fall! ye fleecy snowflakes, fall,
And spread o'er earth your pure white pall,
And teach us in each wintry death,
In each bleak trial of our faith,
To trust in God's almightiness,
His boundless resurrection grace.

Weep! weep! ye gentle raindrops, weep,
O'er seedlings which in cold earth sleep,
Until, beneath your quick'ning tears,
And summer's sunbeams, there appears
The blade and harvest, to the praise
Of Him who life from death doth raise.

— *Arthur Booth-Clibborn.*



MUCH ADO

IN the stern presence of the greater trial,
Who taketh thought for some small self-denial?
When brooding clouds the precious home invest,
Who grieveth for some trivial unrest?

We are "too ready with our discontent,"
Too soon our store of quietness is spent.
We might win flowers where gathering thorns
and rue,
We, who o'er trifles make so much ado.

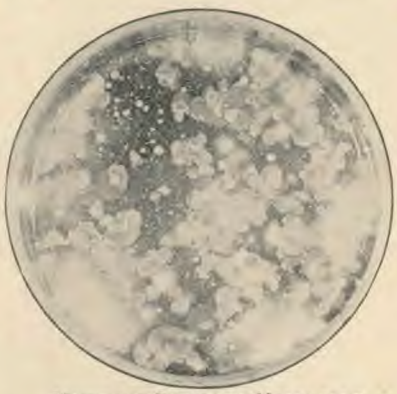
Stronger are they who wear as coat of mail
The shield of faith, which vainly fears assail.
Wiser are they who lift their eyes in prayer,
And win the help that lightens daily care.

—*MARGARET E. SANGSTER*

DUST GARDENS

BY ALBERT W. NELSON, M. D.

MICRO-ORGANISMS are almost universally suspended in the dust of the air, and their presence is a constant source of contamination, and, in the case of the pathogenic (disease producers), a menace to health. Only upon the high mountain top, and far out at sea, is the air comparatively free from dust, and consequently from bacteria. In the abodes of men, dust is especially prevalent, being everywhere present, from cellar to garret.



MYRIADS OF GERMS AND MOLDS FROM DUST IN A LIVING ROOM. PLATE EXPOSED FOR ONE MINUTE WHILE ROOM WAS BEING SWEPT AND DUSTED

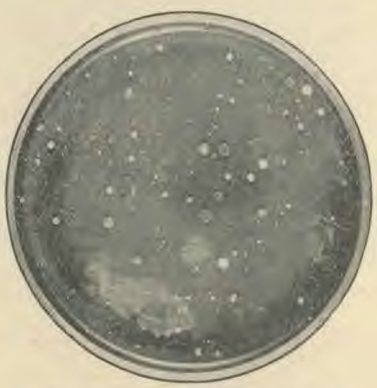
The dust in the air is derived largely from the soil over which the air circulates. Dry soils give off minute particles to every gust of wind. These may be carried to great heights and for long distances overland.

Besides these atoms of soil, dust is composed of fine particles resulting from the wear and tear of every-day life,—bits of wool, cotton, hair, animal and vegetable cells, and almost any substance which can be divided finely enough to be taken up by currents of air.

But for the fact that ashes and mineral dust may render our furniture and other articles unsightly, it would be quite harmless in small quantities. In large quantities it irritates the mucous membrane of the respiratory organs, making them more susceptible to disease. Other dead matter present in the dust of the air is also of little consequence except from the esthetic standpoint.

But dust is not composed solely of these dead, inorganic particles: it may be teeming with living organisms (bacteria) and their spores. Yeast cells and the spores of molds are likewise seldom absent from house dust.

Bacteria belong to the lowest forms of plant life. They are the most widely distributed and the most numerous of living organisms. Their reproduction is very rapid, varying according to the food supply, moisture, warmth, and other factors influencing their development. A new generation may come into being every fifteen to forty minutes. In twenty-four hours the number would reach several billion from a single germ, were they not limited by lack of food and other unfavorable conditions. In common with all animal life, they are destroyed by their own products, if not properly disposed of.



COLONIES OF GERMS FROM AIR IN LIVING ROOM. PLATE EXPOSED FOR TWELVE MINUTES AND THEN PLACED IN INCUBATOR

Bacteria are so small that in taking their measurements a special

MOLD AND YEAST GARDEN FROM DUST OF KITCHEN AIR. PLATE EXPOSED FOR THREE MINUTES DURING REGULAR WORK HOURS

rule measuring one twenty-five thousandth of an inch is used. Bacteria of this size are by no means rare. Although so small, they are heavier than the air, and settle upon any surface that presents itself. The cracks and crevices of the skin are in comparison with them as wide and deep ditches. They can be removed only by vigorous scrubbing and cleaning.

Some bacteria are without the power of motion; others travel about rapidly by means of flagella or cilia — hairlike extensions from their bodies which propel them by a rotary motion. As a rule, bacteria do not enter the air from the water unless they are thrown out in the fine spray during a storm, when they may dry and be left free in the air. They never leave one element for another of their own accord, but must always be forcibly removed from the soil or the water in which they exist. For this reason the breath of a person having a bacterial disease may be free from bacteria. It is during loud talking or in coughing that the particles containing the bacteria are expelled from the air passages.

A moist surface tends to purify air by causing the dust particles with the bacteria to adhere to it. Slightly moistened cloths, preferably of cheesecloth or gauze, should always be used for dusting furniture. A brush or feather duster does not rid the room of dust, but merely stirs it up to resettle, or removes it from one place to deposit it in another.

Bacteria do not multiply in the air; the desiccation, particularly if prolonged, tends to destroy them. This unfavorable action is greatly accentuated by the germicidal action of sunlight. All disease germs are destroyed by the action of sunlight in a period of time varying, according to the season of the year and the material in which the germs are exposed, from a few minutes to several hours.

In order to multiply, bacteria must be placed under favorable conditions. They must have food, moisture, and warmth, and air is necessary for most forms. These conditions they find in perfection in thousands of back yards and insanitary corners in and about our dwellings, as also in their natural habitat, the soil. Extremes of temperature are unfavorable for their growth. A high temperature destroys most forms, though some spores may survive boiling for some time. Cold does not always destroy them, but it arrests or prevents their growth. For this reason it is desirable to keep such

MOLDS, YEAST, AND GERM COLONIES FROM A DAIRY. EXPOSED FOR FIVE MINUTES NEAR A MILK PAIL

articles as milk, juices, etc., at a low temperature.

Knowing the conditions favorable for the growth of bacteria, it becomes possible to prepare an artificial soil, or media, as it is termed, in which one may develop them and observe their habits. A good mixture for growing germs is one prepared from meat juice and gelatin. In order that the micro-organisms may be under observation, it is customary to use Petri dishes — round glass dishes the edges of which are overhanging, the object being to exclude the bacteria which might settle from the air. This principle can be employed in keeping milk and other food free from germs. By using a cover which completely covers the dish and has overhanging edges, the bacteria from the air are prevented from falling into the food. The ordinary cover admits many bacteria through its crevices.

During the preparation of our media, many undesirable germs and spores will fall into it, and, unless destroyed, these would grow rapidly, and spoil the media. To prevent this, dishes and contents need first to be thoroughly sterilized.

Remove the lid from the sterilized dish containing the prepared media, and expose it for from five to thirty minutes, in a room in which people are or have been moving about. No more convincing proof of the constant companionship of germs with house dust, even where nothing appears to the eye, is needed than to cultivate a dust garden in such a soil. We are accustomed to judge of the cleanliness of our living rooms by the eye, but it is the less visible or invisible dust inhaled with every breath, which is the real menace to health.

A Petri Dish

Boiled potatoes also make a good media for germ cultivation. Cut them in pieces a quarter of an inch in thickness and place on a sterile glass dish covered with a bell jar. In the course of twenty-four to forty-eight hours, minute light-colored specks make their appearance. This is the beginning of germ growth. Further development brings forth colonies of different colors, as red, pink, orange, violet, etc., each colony representing an original germ.

The germs which fall so readily upon our culture media and grow there, will do likewise upon other exposed food. For this reason, food left exposed to the air soon undergoes changes due largely to the action of bacteria, the companions of dust, which is manifested by sourness, odor, etc.

While it is not possible to have our houses entirely dust-proof, we may do much to keep our rooms dust-free, and in a sanitary condition, by simplicity in the furnishings and finish. Polished hardwood floors, from which the dust may be daily removed by a damp cloth, are far preferable to a carpeted floor, from which the dust rises in invisible clouds at every step. Curtains, portiéres, and other heavy drapery are dust-traps which should be dispensed with. Intricately molded and carved woodwork forms lodging places for dust, and consequently for germs, while for beauty it has no advantage over a plain natural wood finish. In foregoing these luxuries, one sacrifices neither comfort nor beauty, while lessening the work and increasing the sanitation of the home.

THE TRUE TEMPERANCE FOUNDATION

BY KATE LINDSAY, M. D.

FOR nearly seventy-five years organized temperance work has been going on not only in this country, but more or less over all the civilized world. Many societies have been formed and many plans proposed and measures tried to stem the current and arrest the flood of intemperance which is sweeping over the whole world to-day. Both the civilized Christian lands, favored with the gospel light of centuries, and the darkened pagan nations, still bowing down to wood and stone, are alike the slaves of intemperate habits of eating, and crave the poisons known as stimulants and narcotics, in some form; as, alcoholic drinks, tobacco, tea, coffee, opiates, chloral, cocain, and many other intoxicating drugs.

Mankind is not ignorant of the evil, debasing effect of these deadly poisons on the mind, body, and morals of the race. All are aware of the truth of the saying of the wise man: "The drunkard and the glutton shall come to poverty; and drowsiness shall clothe a man with rags." Prisons, poorhouses, city slums, and insane hospitals are eloquent teachers and instructive object-lessons, pointing out that disease, death, and crime are the results of unrestrained appetite and the use of intoxicants which damage the structures of the body, and murder thousands every year, both directly, and because the victim of intemperance, forgetful of his duty to those depending upon him, and of his obligations to his fellowman, neglects his family and commits murder and other crimes against society, which cut short the life of his fellowmen.

When all these facts are so well recognized and understood by mankind, why is intemperance on the increase, and why are most prohibition laws a dead letter on the statute books of the various towns, counties, and States of our nation? Why does the same ship which carries to heathen lands the Bible and missionaries with the message of life and peace and good-will to men, carry also the agents of death, debasement, and crime in the form of kegs of rum and whisky? The answer is this: Appetite craves these deadly poisons because it has been wrongly educated by generations of indulgence. No mere knowledge of the harmfulness of these intoxicants is strong enough to restrain or prevent the average man from gratifying the demands of perverted appetite, or to lead him to overcome bad habits inherited, and fastened on him by improper training in infancy and childhood.

Of old, a father and mother received direct divine instruction on child education, and it was all summed up in the one sentence: "Now therefore beware, I pray thee, and drink not wine nor strong drink, and eat no unclean thing," — an eloquent appeal for prenatal temperance education.

The child of intemperate parentage begins life intoxicated or poisoned and imperfect because damaged by the habits of father and mother, not alone by alcohol, but by other toxic drinks and bad foods. This imperfection of body structures causes pain and discomfort in the infant from birth, and begets a craving for something to bring relief from physical suffering. The deadly soothing syrup or the whisky sling is often given the fretful baby,— not to cure the little patient, nor to remove the cause of the disease, but only to benumb sensibility.

As the days go by, larger doses of the drug are required to secure relief for the little one, and so allow the mother and other care-takers to rest. The baby is thus kept intoxicated most of the time during its infancy. What wonder is it, then, that when grown, it seeks to forget its sorrows in the saloon, and that no law made by man can prohibit the youth from devising ways and means for gratifying his depraved appetite.

Prohibition will fail or succeed in proportion to the number of men and women in a community who have the ability to control appetite; whose education, both of heredity and after life, creates strong, self-regulating brain centers, and tends to the formation of habits of simple eating and drinking.

The connection between the opiate given to the baby to quiet the colic pains due to sour food in the stomach, and the young man in the licensed saloon, eagerly swallowing glass after glass of strong drink, may not be recognized. Nevertheless, the soothing syrup and teething powders are but the first round down the ladder of intemperance. The young man in the gilded den of intemperance, licentiousness, and other vices, eagerly quaffing glass after glass of alcoholic poisons, or the young woman, a victim of the opium habit, are many steps farther down the road to destruction. The jail, the poorhouse, and insane hospital, perchance the hangman's knot or the electric chair and a grave in the potter's field, and then what?

To the parents of to-day the angel speaks as forcibly as he did to the wife of Manoah. The command to parents now, as then, is equally binding: "Now therefore beware, . . . drink not wine nor strong drink, and eat no unclean thing." Cultivate self-control. It is sad indeed that the fountain of life is often poisoned at its rise by tendencies to intemperate habits. Make the life of the infant after birth free from pain and discomfort by studying the surroundings of the little one and finding out what makes it fretful, sleepless, and unhappy. The first three months of its life it should, if normal, eat, sleep, and grow. Outside objects do not appeal to its consciousness unless they cause either pleasure or pain by contact. Kept clean, dry, and warm, and fed with good, pure mother's milk, it will not fret, nor crave nor need any alcohol or narcotic drugs.

But too often, as the little one grows older, perverted appetite is indulged and the digestive organs become deranged. The flesh meats bolted, the excess of sweets and other rich, indigestible food, resulting in the periodical acute intoxication known as a "bilious spell," confinement indoors and too much school work,— all conspire to demoralize the nervous system, waste its energies, weaken the inhibitory will-power, and create the craving for stimulants and narcotics which is common to all grades and classes of society.

The giddy, unstable youth, with unformed character and strong, unrestrained passions, seeks the saloon and there takes intoxicating drinks. The parents at home often, while they sadly bemoan the downward course, take their alcohol or opium in the form of Peruna, celery tonic, or some other well-advertised patent medicine.

The baby, as we have already seen, gets its stimulants in the form of soothing syrups and paregoric. Then there are the coal-tar sedatives, as anti-kamnia and other pain-relieving toxic drugs too numerous to mention, all prepared to meet this ever-increasing call for something to stupefy the sensibilities, and render the victims of damaged nervous systems unconscious of their sufferings.

The true temperance foundation is to

heed the counsel of the angel to the Hebrew mother of old, who was to bear a son who should be a deliverer of his people: "Drink not wine nor strong drink, and eat no unclean thing."

Laying this foundation firmly is beginning the temperance structure aright, and giving to the little ones the stability of a sound physical organization inherited by reason of proper prenatal education. On this foundation, proper education of the appetite in early life by creating a taste for simple foods and satisfying the thirst with pure water, will rear a stable temperance structure. A sound body and a normal nervous system will be prepared to meet all the demands of life without physical suffering. The infant physically comfortable will not need soothing syrup to make it sleep; neither will its mother need Peruna, or its father a nightcap of hot toddy or a morning bracer of old Rye, or Bourbon whisky.

The true way to do away with any evil is to remove the cause; and the cause of the saloon, brewery, and distillery is the demand of mankind for intoxicants; and the causes of this universal demand are the inherited and acquired intemperate habits of early life. What man's appetite demands and craves, he will surely devise means to gratify. Therefore, the temperance hope of the future is early temperance education, which means the developing of sound minds in sound bodies.

THE CAPTAIN'S WIFE-WIDOW

BY LOUISA A. NASH

DURING my stay across the water, I made the acquaintance of Mrs. McKeane. She was a stanch White Ribboner, bringing up her children to fear liquor as if it were labeled "skull and crossbones."

"And isn't it a verra strong poison?" she asked in her pretty Scotch brogue, rolling her "r's" to add force of assertion to her query. I noticed a shadow pass over her pale face, and her lips quivered pathetically. She caught my look and said,—

"Some day, not noo, dearie, and I'll tell you the story. It will make you feel sad. I want you to be happy noo, ready for your speaking this evening."

I supposed Mrs. McKeane a widow. "I am and I am not," she one day later half explained, and I saw the same quiver on her lips.

"You'll soon be leaving us noo. You might care to hear my sad bit of story."

The children, now grown up, were away; she took my hand as we sat together on the lounge, in her cosy little London parlor: —

"You know my husband was a captain in the Royal Engineers, and his station was in India. Such happy times as they were in those days, my husband so dear and good to me, and so looked up to by his men and the subalterns. He often used to bring his men home for me to 'mither a wee,' he would say. Young lieutenants, mere boys away from home and countree, and exposed to all the temptations of army life. Our babies were such a delight to us; he was devoted to them; and the only cloud was the thought that we should have to send them home later on (the climate of India is so bad for bairnies, don't you know),— a cloud that was just a speck in my blue then; now it seems just spread with blackness. My husband, being captain,

had work that exposed him sometimes to the fierce sun of India for hours at a stretch. He was always so interested in canal making, feeling that canals and irrigation were the sole preventives to the awful famines. I was with him on one of those expeditions, leaving my bairnies with their *ayah* in my sister's house. Our tent was pitched on the borders of a shady forest. We had a delightfully cool camp, with wet *tatties* all around the tent, and *punkas* going inside.

"Alan had been out longer than usual one day, when the sun was hot, and yet a moist wind blowing. He staggered into the tent, and almost fell onto the couch. I thought it was just fatigue, but I found that in all that heat he felt cold to my touch, and his face was so pallid.

"There was no doctor to run to, up-country as we were, and I could only think of the bottle of cognac. So I gave him some. Then seeing he was no better, I gave him some more,— and then more again. It was my one idea, my only refuge. It makes me shudder as I think of it noo, after these many years."

For a minute or two she could not speak.

"It was the very worst thing I could do," she went on. "He had had sunstroke, and I kept inflaming his poor brain with the poison, and," she added half under her breath, "his brain has never recovered."

"But you did the best in your power," I hastened to say, as poor comfort, "the best you knew how."

"Yes, but I ought to have known. Every woman ought to instruct herself about common ills and common remedies. Ah," she went on with the tears streaming down her face, "if I had only known then what I have learned since."

"But I'd rather tell you how good and kind every one was. The men with us made a litter so as to take him in and out of the bullock cart without disturbing him. We got slowly back to our station, I giving him sips of brandy at intervals. The doctor never told me afterward that I did wrong,— out of pity for me, perhaps.

"He had fever, later, and was delirious. When it was possible, we started for home. I can't begin to tell you how good every one was. Friends passed us on from station to station. Sometimes it was a good, dear missionary and his wife who took us under their roof, sometimes a brother officer or a civilian.

"On board ship it was the same sympathy and kindly ministerings.

"But, O, it was piteous to hear baby May: 'I want my old Fadie to come back. This isn't my own Fadie. Do 'oo fink, Mummie, Dod could fetch him back if I asked Him?'

"And Hughie would open his big brown eyes and look at him so long and wonderingly, asking no questions, and having no heart to play in his presence. It went to my soul to see them,— all ignorant of what they were losing. We took him to one of our best sanatoriums, but it was too late — too late.

"The fire in the brain that I had set up with that vile stuff developed into softening. And noo, other hands than mine have to care for him. No wonder the clever men call it fuel when they daren't call it food. When I think of my soldier-husband, with all the scientific work he was competent to do in fighting the famines, I think how much poor India has lost."

"But don't say you did it, dear friend, when it was the sunstroke. How many are carried off by that!"

"But don't you see, sunstroke lowers the nerve force. If I had had the sense

to carry about with me sal volatile (that I took myself sometimes, which you use as aromatic ammonia), it might have been well. Why hadn't I the common sense to know that a lowering of temperature tells you to apply heat to the surface. And I knew the 'puggaries' we wear are to protect the back of the neck, and there I should have put a stimulating poultice of mustard or something.

"Of course, later, when he had fever, he needed cooling off. I remembered too late what Florence Nightingale said, that she was 'sure God never intended women to be calling out for doctors all the time. He meant they should acquaint themselves with the laws of health, and strive to follow them.'

"Another thing: Alan always took wine with his meals (it was the custom). Now I know that the sun and liquor have somehow an affinity for each other, and the sun strikes more readily when liquor is coursing through the veins.

"O, if I had but known it then."

"I do indeed feel grieved for you," I said, as I kissed her pale cheek. "I can only ask God to keep on giving you courage and comfort. I wish you could feel that God can bring great good out of even such sorrow as yours. You may see only little glimpses of that good here, but the whole will be revealed hereafter. Be sure He has a work for you to do here, and, like Moses of old, you have been fitting for it in your wilderness."

The Use of Alcohol Shortens Life.

It is very easy to prove that the influence of alcohol, as of every other poison, is to shorten life. Dr. Willard Parker, of New York, shows from statistics that for every ten temperate persons who die between the ages of twenty-one and thirty, fifty-one intemperate persons die. Thus it appears that the mortality of liquor-users is five hundred per cent greater than that of temperate persons. These statements were based on the tables used by life insurance companies.

Notwithstanding the constant protest of both moderate and immoderate drinkers, that alcohol does not harm them, that it is a necessary stimulus, a preventive of fevers, colds, consumption, etc., and the assertion of certain chemists that it is a conservative agent, preventing waste and so prolonging life, an English actuary, Mr. Nelson, has shown from statistical data that can not be controverted, that while the temperate man has at twenty years of age an average chance of living forty-four and one-fourth years, the drinking man has a prospect of only fifteen and one-half years of life. At thirty years of age the temperate man may expect thirty-six and one-half years more of life, while the dram drinker will be pretty certain to die in less than fourteen years.

The Rechabite societies in England show statistics clearly indicating that total abstinence from the use of alcohol is in the highest degree conducive to longevity.

How to Keep Well.

Nature is always and forever trying hard to keep people well; and most so-called disease — which word means merely lack of ease — is self-limiting, and tends to cure itself. If you have no appetite, do not eat. If you have appetite, do not eat too much. Be moderate in the use of everything, except fresh air and sunshine.

"To do all in our power to win health and to keep it is as much our duty as to be honest."

Our Walking Club

A STUDY OF BUDS AND LEAF SCARS, OUTDOORS AND ON WINDOW-SILLS

BY JULIA ELLEN ROGERS

Photographs by A. Radclyffe Dugmore

LET us turn from the oaks this month, and learn from the trees how they pass the winter. In full leaf a tree is able to conceal a great many traits of character. In winter, broad-leaved trees stand forth with trunk and branches naked, with bark and buds and leaf-scars telling the truth to all who come earnestly and intelligently asking questions. February finds the hush of the winter sleep still upon the woods.

The first impression I always have as I go into a grove or the edge of a forest in the dead of winter is one of mental discomfort. I feel like an intruder who has no invitation to come. The snow covers everything underfoot, and the trees hold their arms aloof. If there is a bird to notice my presence, it is no doubt a blue-jay who scolds me roundly for coming. But I wonder an hour later as I go home with the benediction of the woods uplifting my soul, how I could have so far permitted my imagination to mislead me. The change is not in the trees, but in myself. Again and again I go, knowing how glad I will be, in spite of the weather, for an hour in the company of trees.

TWIG OF BEECH

At first glance, bare trees look dead. The signs of life are the buds, which are set in mathematical order on the twigs. Each bud has a leaf-scar just beneath it. Bud, leaf-scar, and the order in which they are arranged, are the three most reliable traits by which the identity of a tree can be determined. Foresters, who know trees better than most of us, rely on buds and leaf-scars to distinguish confusing specimens.

The buds are found on the twigs that grew last summer. Only the twigs of the season bear leaves, and buds are formed in the angles between leaf and twig. Each bud closely resembles all other buds on the same tree, and those on the same kind of trees. The best buds are on strong twigs, which grow in positions that gave the leaves a good supply of sun and air last summer. Small buds on the same tree are on stunted twigs, or for some other reason had not the same advantages that came to the more fortunate ones. The south side of a tree that stands alone is likely to have better branches and buds than the north side.

Let us test one or two of these statements by our own

studies. The beech is a pretty well-known tree. People know it by its elegant gray bark, its silky leaves, and the small, but sweet, triangular nuts. Learn to know it by its long, slim buds, wrapped so daintily in the thin, brown bud-scales, pair upon pair; yet the bud remains as slender as a bird's claw. It is hard to believe that the leaf, with its point of attachment so slight, could have been the nurse of a bud so long and so well formed as an examination proves this one to be. Beech buds are set, one at a joint, and a single one at the tip of the twig. The bark of the twigs is a thin, brown skin, scarcely less delicate than the scales that wrap the buds. On the branches (which are twigs grown older) the bark thickens, but only on old trunks do cracks and furrows mar the perfectly fitted garment this tree wears. White specks, oval in form and slightly raised from the surface, are seen on the bark of young twigs of all trees. Examine the beech for these corky dots. They are the breathing pores by which air is admitted to the living layer we find everywhere on the trees just under the bark.

Twig of Quaking Asp

The quaking asp, or aspen, is a familiar tree of the poplar family. Its round leaves tremble all summer, even when no breeze is blowing. In February the tree shows its irregular, angular limbs covered with pale, greenish bark, splotched with black, above a dingy black trunk. On the angled twigs the buds are borne, — slender, pointed ones, each perched on a bracket-like prominence, at the edge of which is the leaf-scar. Very different is the poplar bud from the beech. But throughout the whole tree top, and among the fifty or more individual trees that form the copse of quaking asps in a low piece of ground, the bud pattern does not change at all. The buds in the picture will match any we compare with them from any of these trees.

Will you notice that one impatient bud has burst its coat of overlapping scales, and has thrust out the furry gray head of a catkin! Herein is betrayed an interesting family secret of the poplars. They are close relatives of the willow family. Hadn't you guessed this fact? Pussy-willows will be found in February with their silky catkins quite uncovered by the casting off of the single brown scale that is conical and deep, much like a boy's toboggan cap. A close look at willow and poplar trees as spring advances, will show them all bearing catkin flowers, and ripening their minute seeds in fluffy masses of silk within little pods early in summer.

Our oak tree acquaintances exhibit plump buds set singly at the joints, and at most of the tips of twigs a goodly cluster. The elm has alternate bud arrangement, with the bud twisted away from the leaf-scar, as if there had not been room enough for the bud as it grew. The hackberry, a relative of the elm, has no bud at the end of a twig. Our roadside sumac trees have no terminal buds; and the ironwood, also called blue beech, has none. Most trees have the strongest buds on the ends of their twigs. These differences have a marked influence upon the character of the tree frame. Winter is the time to see these facts most clearly.

As the leaves are arranged, so will the buds be, for the buds are formed in the angles between leaf and twig. A bud is

a leafy shoot, very short of stem and very small of leaf, but complete in number and form, even to the notching and veining of the leaves. The wrapping of this leafy shoot in protecting scales forms the winter bud, one of the thousand growing points set all over the tree top waiting for spring. Flower buds are usually easily distinguished from normal buds by their unusual size. Elm twigs very well exhibit the two kinds of buds.

Now take the twigs of horse-chestnut trees and maples. They are in pairs, and the leaf-scars prove that the leaves of one pair stood at right angles with those of the pairs above and below them. If one leaf pointed north, its mate pointed south, and the pairs above and below the one mentioned spread east and west. In this arrangement the leaves get the maximum of light and air, and in the summer to come, the leafy shoots spread in the same advantageous way. The whole tree top depends upon the setting of buds, for the trunk and limbs began life as buds.

I am not ready to stop until I have adjured you to cut some long, vigorous twigs of elm and maple and poplar and beech to take home with you. In the orchard, cut twigs of apple, cherry, and plum. In the garden get a few sprays from the Forsythia bush, flowering almond, and any other early blooming shrub. Put them in jars of water in a sunny window. They need no care, though occasional cutting off of the stubs under water will facilitate the rise of water to the buds. It is astonishing to see the unfolding of leaf and flower indoors, while the trees that bore the twigs are bare outside in the wintry air until a month or two later. It is a simple experiment any one may carry out with eminent success. By it all the miracle of the coming spring is spread out before us.

And the buds of the beech and the quaking asp are the loveliest of them all! Who does not agree with me?

EFFECTS OF WALKING ON THE BEAUTY OF THE EYE

It was a matter of surprise to Emerson that the following little piece of advice by De Quincey should not have attracted more attention: "The depth and subtlety of the eyes varies exceedingly with the state of the stomach, and, if young ladies were aware of the magical transformations which can be wrought in the depth and sweetness of the eye, by a few weeks' exercise, I fancy we should see their habits on this point altered greatly for the better."

He then describes the effect of walking as he had noted it in the eyes of the poet Wordsworth. "I have," he says, "seen Wordsworth's eyes sometimes affected powerfully in this respect. His eyes are not under any circumstances bright, lustrous, or piercing, but, after a long day's toil in walking, I have seen them assume an appearance the most solemn and spiritual that it is possible for the human eye to wear. The light which resides in them is at no time a superficial light, but, under favorable accidents, it is a light which seems to come from a depth below all depths; in fact, it is more entitled to be held 'the light that never was on land or sea,'—a light radiating from some spiritual world, than any that can be named."

A PLEA FOR SHRUBS FOR THE BIRDS

BY BELLE M. PERRY

IF my children were young again," said a woman in middle life to me, "I would do anything and everything to make them know and love the life of the outdoors, from their earliest years."

A child could have no better legacy. From the point of view of health alone, it would pay. Our modern houses invite all the ills that flesh is heir to; and, unless one flees to the outside again and again, to-day and every day, especially in cold weather, when windows and doors are kept closed, he will pay the penalty, for Nature always takes her pound of flesh. Yet most people trace their ill feelings anywhere but to the right source. And even in this year of grace, 1906, the number of fairly intelligent people who think colds and coughs lurk in the pure air of the outdoors, is legion.

Given a modern, furnace-heated, gas-lighted house, and you have a combination that will defy success with house plants. And an atmosphere that is bad for plants is bad for folks. One of the worst things about furnace heat is the source of the air supply. Time was when there was an outdoor arrangement to supply air to the furnace. But that has largely given way to a plan of taking air from halls or the colder parts of living rooms, so the same air makes the rounds over and over again. I heard a prominent educator say to an audience of Michigan teachers, a few weeks ago, that if a Texas cyclone could only break out our windows, and do it over again every time they were replaced, there would be no need of a sanitarium for consumptives in the State of Michigan, and the majority of our doctors would have to go out of business. He told how some of his students could not make their lamps burn to study by. And what do you think was the reason?— The rooms were warmed by an oil heater, and there wasn't oxygen enough left to burn a lamp-wick decently. And yet, those students were spending hours every day in that atmosphere. "Nothing to breathe but air," is a line in a familiar jingle. Would it were true. It is what we breathe that is not air that is responsible for the great white plague, about which so much is said and done these days.

What a delight it was to me, when visiting the National Cash Register factory a few months ago, to learn that all the air of that immense institution is renewed every fifteen minutes, the pure outdoor air being forced in from the roof through immense flues. Such ventilation as this is as rare as the kind of man that is back of it.

But even National Cash Register factory air does not compare with that which we find out of doors on these glorious winter days, and you and I and everybody should welcome every trip to the post-office, the store, the barn, the neighbors, the wood-pile,— anywhere that will help to make up the two hours of daylight out of doors which every one of us must have if we would be approximately well.

It is refreshing to find once in a while an outdoor enthusiast,— some one who is awake to the delight and value of good, vigorous exercise in the open air. A well-known public reader was in my home three or four years ago. A man drove into the yard with a load of wood. Said she, "My fingers tingle to go out and throw off that wood!" Suiting the ac-

tion to the word, she slipped into a jacket and mittens, and was soon out and at work. The man looked as if he thought there was some joke about it. She came in twenty minutes afterward, her eyes sparkling, her cheeks aglow, saying enthusiastically, "If I could only have such outdoor exercise as that every day, I would be happy!" In her New York City home her outdoor exercise is confined to walking, but she makes good use of that, often walking eight or nine miles a day.

And so an interest in birds and nature study is to be welcomed because it will entice us into this great, beneficent, life-giving outdoors. And there is a pleasure side to these outdoor interests that is worth more than gold. They are a guarantee to growing joy in life as the years pass.

It is impossible to know and love birds without coming to know and love trees and shrubs; for where the trees and shrubs are, there you find the feathered songsters. And when one begins to look into the matter, he awakens, as with a shock, to the connection between the clearing up of land and the decrease of birds. Who ever heard, twenty-five years ago, of having to spray orchards to insure a good fruit crop? There were enough birds then to cope with the insect evil. But farmers were blind. They are blind now.

Every farm fence row might be a bird paradise of thorn trees, elderberry, wild rose, maple, sumac, and willow. Instead, we are coming to find them as barren of shrubs as is the open field. Farmers consider the clean fence row the proper thing. They have not thought of this other side of the question. If they would think about it and unite on this one thing, and give the fence rows of their farms over to their valuable co-workers, the birds, the number of insect-eating and weed-seed-destroying songsters would increase by thousands in the next few years. While traveling in the State of Washington two or three years ago, I was delighted to see many beautiful fence rows of wild rose — perfect hedges of them. I said to a fellow-passenger, "May this never be sacrificed to a mistaken notion of good farming." But Washington farmers may value their wild-rose honey enough to preserve the roses.

The fence row of our native wild shrubs, self-seeded,— bird-seeded very largely, if you please,— is beautiful enough in itself to warrant its preservation were beauty the only consideration. But it means so much more. To save this is to do much toward saving the birds, who are suffering almost the fate of the Indian and the buffalo at the hands of civilization.

If I could transplant to my grounds a clump of wild sumac that I saw by the roadside when driving last summer, or a cluster of the handsome thorn-apple that I never pass without a keen sense of pleasure, I would value them above money. We do not have to go to the nurserymen for beautiful shrubs and vines. But at the present rate of ruthless destruction, the time is sure to come when we will have to do just this thing in order to get some of our most beautiful native shrubs and vines. The charge falls upon you, and you, whoever and wherever you are, whose eyes are opened, to make your neighbors appreciate these native treasures by using them in ornamental ways on your grounds. Bless God, good things are catching as well as bad! And the worthy example of those awake to the need, may yet save our native vines and shrubs from this extermination.

If, in addition to the wild-shrub fence

row, farmers would give over a few acres to underbrush growth, it would be the best crop investment they could make. I wonder how many farmers are careful to avoid burning out clearings in the nesting season. Let us wake up to our individual responsibility.

These winter days are just the time to think about what we will do in tree and shrub planting when spring comes. It does not require very large grounds to make place for a lot of things, now that we are learning better than to cut up our grounds with a pepper-box of things. Those wise people down in Dayton are doing something besides providing their employees with good air. They are making landscape artists of every one of them. And it is worth a trip to Dayton to see how it is done. They have simplified the fundamentals down to three rules: (1) Keep lawn centers open; (2) plant in masses; (3) avoid straight lines. These rules they call the A B C of landscape gardening. The artistic effect is so manifest that one wonders he did not find it out for himself.

Be sure and plan for a group of shrubs, or, better still, several groups, and decide upon getting one or more kinds that are new to you. There is a pleasure in getting acquainted with the habits and personality of a new tree, a new shrub, which is akin to learning a bird by its song, and by its individual traits. Every child should have the pleasure and education of growing trees and shrubs from the seed. And every new kind they learn in this way means a widening of their interest and pleasure in the wonderful world of nature. "O, I found a gingko tree in the park!" wrote a schoolgirl to her mother, and she was as happy as if she had met a friend. I experienced the same pleasure in seeing a fine specimen of the same tree in those famed botanical gardens in St. Louis. Happily, this beautiful tree, which the nursery books call the maidenhair tree, from the likeness of its foliage, in form, to that of the maidenhair fern, is being quite largely planted in Michigan at present, owing to the tree-memorial idea which our State Federation of Women's Clubs is carrying out in honor of the founder of the forestry work in that organization, Mrs. Martha E. Snyder Root.

So, I say, plant a shrub group and put in at least one new kind of shrub. One may well consider winter effect, also, in choice of shrubs. The common red willow, which can be found in almost any swampy place, will do well on high ground, and it gives a touch of color to the picture which is sure to be appreciated. The wealth of scarlet berries the barberries have the winter through, makes one love them. And they are beautiful shrubs, apart from this. If a tangle of lilacs or other shrubbery is allowed its own way in some rear place on the premises, and the long grass left undisturbed, the shrub-loving birds will be sure to find it and be happy.

There should be a clump of evergreens somewhere in the back of even a small yard. But don't let any one persuade you into trimming them up from the ground. Notice how beautiful the Norway spruce appears in its native grandeur as we see it in parks and public grounds. Evergreens may be used to help make a fine tree background to the house. We are beginning to find out that trees have no place in the front yard of ordinary grounds except, perhaps, an occasional open-growing one to protect from sun in midsummer. They are the proper background to the picture of which the house is the central feature. Many make the mistake of planting them too close to

the house, not realizing that their friendly arms are going to stretch out over the roof some day. I wish every one could see some good stereopticon views illustrating this tree-background idea. Pictures tell such an impressive story in landscape gardening.

Plant shrubs in irregular masses, near the house, in corners, on borders, in curves of walks, as a foreground to tree masses at side and rear, and finish the picture with vines and flowers. I heard a college botanist say, not long ago, that one of the most beautiful of vine effects could be made with our wild bittersweet by letting it climb from the ground to the chimney on loosely hung wires. People are beginning to appreciate the perennial flowers. These are beautiful without having to be planted every spring, and, as borders to shrub groups, seem to fill just their place. With a background of green foliage they are beautiful along the base of the house wall. Flowers are much more effective in this way than in lawn beds.

I hope many are enjoying the winter birds as I am enjoying them now. As I write, they are making merry with the suet bags I have lately taken to putting on the body of a pear tree, as the English sparrows find it harder to help themselves from that point. I have a plan to rid the premises of this unmitigated nuisance this winter. (See page 315 of Professor Clifton F. Hodge's "Nature Study and Life.")

I can scarcely look out of the window that I do not see a number of woodpeckers and nuthatches at the suet. I saw a nuthatch perform a feat the other day that was a credit to his intelligence. A small piece of suet was in some way fast, probably frozen, to a short end of string. He pulled away without success for some time, and then sprang off the branch with the suet in his bill and hung for a moment with his weight on the string. He did the same thing several times. Finally he pulled the string free and flew away with the whole thing.

Next month it will be time to begin making plans for the coming of spring birds.

Poisons in the Cup.

Tea and coffee contain, in addition to caffein, tannic acid and various volatile poisons. Each of these poisons produces characteristic harmful effects. The volatile oils give rise to nervous excitability, and after a time provoke serious nervous disorders. Caffein is a narcotic, which has been shown to diminish the activity of the peptic glands, and to interfere with digestion.

Wolfe has shown that three grains of caffein, an amount which might easily be furnished by an ordinary cup of tea or coffee, greatly impair the quality of the gastric juice, lessening its total acidity.

Roberts showed that both tea and coffee interfere with the action of the saliva upon the starch of the food, and may even wholly destroy its effect.

Dr. Wood proved that the daily use of a decoction prepared from one ounce of tea leaves produces decidedly poisonous symptoms.

A German physiologist found the digestion to be reduced one-third by the use of tea. The tannic acid of tea not only interferes with the digestion of starch, but also prevents the proper digestion of albumin.

Coffee Drunkards.

English physicians have recently noted a remarkable increase in the number of deaths from nervous complaints, and, endeavoring to trace the cause, have come to the conclusion that it is largely due to the increase of popular tea shops and coffee palaces. As a part of the temperance movement in that country, attractive coffee palaces and tea rooms have been established to offset the attractions of the gin palaces. A medical man who makes a specialty of dietetics states that as many men are addicted to excessive indulgence in coffee as there are immoderate tea drinkers among women.

"Thousands of men," he writes, "particularly in the city, sip coffee during the day at brief intervals, as their brethren in New York sip spirits. In time the coffee habit develops palpitation of the heart, irregular pulse, nervousness, indigestion, and insomnia.

"Coffee drunkards, as I may call them, are greatly increasing in number, due probably to the wave of temperance that is passing over the country; but I have known cases where hallucinations scarcely different from those of alcoholism have been set up by persistent abuse of coffee over a series of months.

"Coffee is a cerebral stimulant ranking with alcohol. . . . The use of coffee after dinner, especially the practise of drinking a cup at night, is responsible for cases of sleeplessness."

A Plan for Saving.

A writer in a Chicago newspaper suggests that as there can be no doubt that most Americans eat too much, a reform in this respect would make an appreciable difference in the family expenses. "One needs only to travel abroad," he says, "to discover the fact that the American family can live well on a great deal less than it spends for food. A French hotel will exist on the waste from an American hotel of the same class. The same holds relatively true of the American family at large."

"Some one has estimated that in many families in the United States the table costs fifty-five per cent of the family income. When a single person may live and work and feel well on from thirty to forty cents a day, this proportion is enormously out of keeping. The man who raises all kinds of noise at paying a five-per-cent increase in rent, has never thought that his table bill is at least thirty per cent in excess of a sane business conduct of his home."

This matter would be worth considering, even if the money uselessly expended were the only thing wasted. But the expenditure of energy, the waste of vital force in ridding the body of the unnecessary surplus of food consumed, is a far more serious matter. Besides, this can not always be satisfactorily done, and the physical machinery is clogged in consequence. The saving of life force resulting from a proper dietetic regimen far outweighs any merely monetary considerations.

Some Results of an Unnatural Dietary.

Dr. Haig, of England, in his work on "Diet and Food," dwells at length in the chapter on "The Physiology and Pathology of Fatigue," on the stimulating character of flesh foods. Incidentally he shows that this unnatural diet is largely responsible for the injurious habit of eating too frequently, so common in England, and also for the alcohol and tobacco habits, and a host of minor ills. He says: —

"A meal of meat, as compared with a meal of, say, milk, cheese, and bread,

equally rich in albumens, is like the force in an explosive oil as compared with the same amount of force in a slow burning oil.

" Stimulation is not strength, but force rendered a little more quickly available; and it is always followed (and must be so) by an exactly corresponding amount of depression, when the force used up is not available, and has to be replaced.

" This action of meat, as a stimulant and producer of quickly worked-off force, has a good deal to do with the fact that, as we have come to eat more and more meat, we have also come to have a larger and larger number of meals in the day; and now while the bread, cheese, and vegetable feeder can do well on two, or at most three, meals a day, the flesh feeders often take four, or perhaps five.

" It follows, also, that quite an exaggerated and erroneous estimate has been formed of the power of meat to produce force, because its stimulating effect has been mistaken for power, and the depression which followed has either been overlooked, which is possible at first, or later, has been counteracted by tobacco, alcohol, and other more harmful stimulants; but the man who gets his albumens from a less stimulating source, having no early stimulation, has also no consequent depression, and so probably never feels the want of any alcohol at all.

" Hence it comes about that those who took alcohol on a flesh diet generally very soon give it up when they give up flesh, and smoke also very little, having no craving for any stimulant.

"Another very common effect of meat eating, whether alcohol is added to it or not, is a certain amount of dulness, heaviness, and disinclination for mental or bodily exertion in the morning hours, often associated with more or less irritability and mental depression. In fact, the meat eater is never quite himself or to be seen at his best till the evening, when rising acidity clears his blood for a time from excess of uric acid; and this is, I think, at least one of the factors that has caused our morning and evening hours to grow progressively later and later, as we have come to live more in towns and to eat more meat.

" It is misery to rise in the morning hours if you feel dull, depressed, and unrefreshed; it is a pleasure to prolong the evening conviviality when you feel bright, and by contrast even cheerful. Few or none realize that a multitude of such minor sorrows are the direct results of their habits of life."

Moral Laws and Physical Fitness.

The Grecian wrestlers in the Olympic games furnished the Apostle Paul with examples of temperance worthy to be followed by those seeking a higher prize than mere physical excellence. Complete self-mastery is essential to one who would obtain the mastery over another. The present vogue for wrestling has called attention to the fact that the wrestlers of to-day, unlike the prize fighters, are, as a rule, abstemious on principle, when out of training as well as in. After giving a list of noted wrestlers who are almost, if not quite, total abstainers from tobacco and alcohol, the *Washington Post* says: —

" But perhaps the most abstemious wrestler of them all is the king of them all — the ' Russian Lion,' George Hackenschmidt. It is a belief amounting almost to a superstition with Hackenschmidt that the moment he quits living in accordance with the moral law, to the best of his knowledge and ability, that moment his strength will desert him and he will become as weak as Samson when

he was shorn of his locks by the treacherous Delilah. Perhaps Hackenschmidt's observation of the effects of dissipation on many men is responsible in part for the hold this belief has on him; perhaps his marked religious bent is more largely responsible. At any rate, before he does anything, he always weighs what effect the act will have upon him morally, his attitude of mind being that anything that will weaken a man's moral fiber will sooner or later do the same for his physical fiber."

How the Deadly Cigarette Is Made.

The cigarette is certainly the deadliest foe of the young manhood of to-day. Many are the boys whose manhood is blighted or blasted before it has blossomed, by the use of the poisonous cigarette, which saps their very life blood. The description given by the Rev. James L. Hammond of what he saw of the making of these filthy rolls, ought to be enough to set every boy forever against their use.

"One night in San Francisco I went down into Chinatown, to see the famous, or rather infamous, opium dens. In a room not more than twenty feet square, down three stories underground, dimly lighted and dingy, where the air was so foul it almost overcame you as you stood in the entrance, I found twelve Chinamen, busy at work. Sitting flat on the floor, in the midst of indescribable filth, they were rolling cigarettes for the American boy to smoke.

"There was a great pile of material in one corner of the room, and we struck a match and stooped down to examine it. We found it was cigar stumps and quids of tobacco, mixed with the vilest of sewer excretions.

"I said then in my heart, Would to God I could take every boy in our land into that foul den for a brief hour. I am sure we wouldn't have to legislate against the evil; we would not need to organize anti-cigarette leagues to teach our boys its evil effects.

"Just think of it, young man, the next time you twirl one so lightly in your fingers and stand on the street corner enwreathed in a halo of circling smoke,—remember that part of yours may have been somebody's castaway cigar stump, or a quid of tobacco that has been chewed. Perhaps the ashes from an opium pipe that a leprous Chinaman has 'hit' have been used to flavor it. All cigarettes are drugged to render their effects more deadening to the nerves."

How the Cold "Catches" Us.

The really important question is, In what does predisposition consist? We talk of a man "catching a cold." But it would be more correct and equally graphic to say that the cold has "caught" the man. For it does catch him unawares, and often when he least anticipates it. But no cold ever caught any man unless he had first prepared the ground for it by a careful process of fertilization.

No amount of mere exposure to a low temperature alone will cause a "cold" in a perfectly healthy man, in whom the product of wear and tear of nerve and muscle, with adequate excretion of waste products, on the one side, is evenly balanced by food supply and exercise on the other. Where this equilibrium does not exist, such exposure then operates as a "chill."

Now, who are the people who are liable to catch cold? Not those whose dietary is so carefully adjusted to the work they have to do that there is no opportunity for the accumulation of unused foodstuffs in their tissues; but those

who, in the better-fed ranks of society, eat and drink more than they need to meet the daily requirements of their bodily activity, and are thus continually storing up in their tissues and excreting organs material which, if appropriately used, would form valuable ammunition for the development of energy either of body or mind, but which when stored beyond a certain point has to be thrown off in a "cold" or a "bilious attack," or in a more pronounced fit of gout. — *Dr. Francis T. Bond.*

Unconscious Drunkenness.

In connection with the patent-medicine exposure, the question has been raised, Why should any one who wants to get drunk drink Peruna when he can get whisky? In answering this question in *Collier's,* Samuel Hopkins Adams gives as one of the reasons that as a rule the drinker does not know that she wants to get drunk. "I use the feminine pronoun advisedly," says Mr. Adams, "because the remedies of this class are largely supported by women." He then relates the following striking proof of his statement: —

"I knew an estimable lady from the Middle West who visited her dissipated brother in New York — dissipated from her point of view, because she was a pillar of the W. C. T. U., and he frequently took a cocktail before dinner and came back with it on his breath, whereupon she would weep over him as one lost to hope. One day, in a mood of brutal exasperation, when he hadn't had his drink, and was able to discern the flavor of her grief, he turned upon her: —

"'I'll tell you what's the matter with you,' he said, 'you're drunk — maudlin drunk!'

"She promptly and properly went into hysterics. The physician who attended, diagnosed the case more politely, but to the same effect, and ascertained that she had consumed something like half a bottle of Kilmer's Swamp Root that afternoon. Now, Swamp Root is a very creditable 'booze,' but much weaker in alcohol than most of its class. The brother was greatly amused, until he discovered, to his alarm, that his drink-abhorring sister couldn't get along without her patent medicine bottle! She was in a fair way, quite innocently, of becoming a drunkard."

Another example of this unconscious drunkenness is recorded by the *Journal of the American Medical Association:* "A respected clerygyman fell ill, and the family physician was called. After examining the patient carefully, the doctor asked for a private interview with the patient's adult son.

"'I am sorry to tell you that your father undoubtedly is suffering from chronic alcoholism,' said the physician.

"'Chronic alcoholism! Why, that's ridiculous! Father never drank a drop of liquor in his life, and we know all there is to know about his habits.'

"'Well, my boy, it's chronic alcoholism, nevertheless, and at this present moment your father is drunk. How has his health been recently? Has he been taking any medicine?'

"'Why, for some time, six months, I should say, father has often complained of feeling unusually tired. A few months ago a friend recommended Peruna to him, assuring him that it would build him up. Since then he has taken many bottles of it, and I am quite sure that he has taken nothing else.'"

Coffee Blindness.

Visitors to Morocco are impressed with the number of blind men that are seen about the streets of Fez, its capital city.

This blindness is invariably attributed to excessive coffee drinking. Dr. Snaitken says: "It is well known that the Moors are inveterate coffee drinkers, especially the merchants, who sit in their bazaars and drink coffee continually during the day. It has been noticed that almost invariably, when these coffee drinkers reach the age of forty or forty-five, their eyesight begins to fail, and by the time they get to be fifty years old, they become blind."

Treatment of the Narcotic Habit.

The best means of ridding oneself of the alcohol, tea, or coffee habit, is to adopt a dry dietary, making free use of fruits, especially fresh fruits, also stewed fruits and fruit juices. Flesh foods and animal broths and extracts unquestionably excite the nerves, and create a demand for the soothing effect of a narcotic. Hence, a person who desires to free himself from the alcohol, the tobacco, or the tea or coffee habit, must first of all dispense with all flesh foods. Condiments must also be discarded, as these irritate and excite the nerves, creating a desire for the soothing effect of some narcotic drug.

The nervousness and irritability which follow the withdrawal of the accustomed drug may be wonderfully relieved by the prolonged warm bath at a temperature of 93°to 96°. The duration of the bath may be indefinite, several hours if necessary. If there is palpitation of the heart, or a rapid pulse with a feeling of distress through the chest, this may be relieved by the application of an ice bag over the heart, by sponging the spine alternately with hot and cold water, or applying first hot, and then cold, compresses to the spine, alternating every minute.

Rubbing the whole surface of the body with the hands, dipping them frequently in cold water, is an excellent means of reenforcing the heart. The wet-sheet pack will sometimes secure quiet, and even sleep, when other measures fail.

The cold mitten friction and cold towel rubbing should be applied two or three times a day for the purpose of toning up the nerve centers. An abundance of outdoor exercise, relief as far as possible from ordinary cares and worries, and a nutritious, easily digestible, and unstimulating diet, are other measures which are important.

The use of substitutes is a snare and a delusion. A hot beverage, made from roasted cereals of some sort, may be tolerated, but it is better to avoid even this, so that the habit of drinking at meals may be overcome, thus getting as far as possible away from temptation.

The Fashionable Figure.

Woman is usually charged with being responsible for the frequent and startling changes of fashion. That she is but an accessory after the fact, a mere puppet in the hands of commercial showmen, who use her as a sort of clothes-horse for the display of their wares, is shown by the fact stated in a fashion journal, that throughout the country, women are anxiously asking, "What is the new figure? Is it very different?"

The mandate goes forth, "The waist is to be smaller; the bust is to be higher," and immediately there is a drawing of corset strings all over the land, and the national female form assumes the shape indicated by Simon's thumbs. Or, "Skirts are to be longer this year;" and forthwith there is a dropping of skirts into the dust and mud, and the street sweeper goes out of business.

All other creatures retain the shape into which they were molded by the Creator; but woman, his crowning work, is

remodeled almost every season. "The fashionable figure has again changed," says the fashion book, and at once there is a large demand for the "Nuform" corset.

A prominent English artist, speaking of the accentuation of the waist-line in women's dress, says: "Female dress will never be thoroughly satisfactory until women have realized that they have no waists. Nature has not endowed them with waists, which are artificial lines produced by compressing the body. This seeming paradox is easily proved by considering that the waist of women has been placed by fashion in every conceivable position, from under the armpits to halfway down the hips. Obviously it can not correspond to any natural formation, or it could not wander about in this extraordinary manner."

The outer casing of the human form is exactly adapted to its inner mechanism, and can not be remodeled without seriously interfering with the position and functions of the internal organs. The result of the blasphemous attempt to improve upon the Creator's masterpiece is manifest in the prolapsed stomachs, floating kidneys, misplaced livers, etc., to which the "Nuform" woman is subject.

"Confessions of a Drunkard."

In his "Confessions of a Drunkard," Charles Lamb, the great English wit, tells of a time when, early in his bondage, he was seeking to break his chains, but was dragged back into his prison by taking up what he deemed the comparatively innocent habit of smoking. "The devil could not," he says, "have devised a more subtle trap to retake a backsliding penitent. The transition from gulping down drafts of liquid fire to puffing out innocuous drafts of dry smoke, was so like cheating him. But he is too hard for us when we hope to commute. He beats us at barter, and when we think to set off a new failing against an old infirmity, 'tis odds but he puts the trick upon us of two for one. That (comparatively) white devil of tobacco brought with him in the end seven worse than himself.

"From smoking at first with malt liquor, I took my degrees through thin wines, through stronger wine and water, through small punch, to those juggling compositions which, under the name of mixed liquors, slur a great deal of brandy or other poison under less and less water continually, until they come to next to none, and so to none at all.

"I should repel my readers, from a mere incapacity of believing me, were I to tell them what tobacco has been to me. . . . How from illuminating it came to darken, from a quick solace it turned to a negative relief, thence to a restlessness and dissatisfaction, thence to a positive misery. How, even now, when the whole secret stands confessed in all its dreadful truth before me, I feel myself linked to it beyond the power of revocation.

"Persons not accustomed to examine the motives of their actions, to reckon up the countless nails that rivet the chains of habit, or perhaps being bound by none so obdurate as those I have confessed to, may recoil from this as from an overcharged picture. But what short of such bondage is it, which, in spite of protesting friends, a weeping wife, and a reprobating world, chains down many a poor fellow, of no original indisposition to goodness, to his pipe and to his pot?"

Ill health finally compelled the famous wit to abandon the "filthy weed" which had so enchained him. In parting company with his much-beloved pipe, he wrote his "Farewell to Tobacco," beginning, "For thy sake, tobacco, I would do anything but die."

Chautauqua School of Health

NORMAL RESPIRATION

BY J. H. KELLOGG, M. D.

THE normal rate of respiration is sixteen to eighteen times a minute, or about one breath for every four heart beats. The rate of respiration differs greatly in different animals. The hippopotamus, for example, breathes but once a minute, while the sparrow breathes ninety times a minute, and the rat two hundred times in the same period. The ox, the dog, and the horse breathe at about the same rate as man.

The idea that women naturally breathe with the upper part of the chest, while men breathe abdominally, has very little, if any, foundation in fact. The writer took pains a number of years ago to make a careful study of this subject among the most primitive Indian tribes of the United States. He also made careful observations of Chinese women, and has since had opportunity for similar study of the breathing movements of Mexican, Egyptian, and Arab women, as well as those of other nationalities, whose clothing has never been such as to interfere with the normal breathing movements. In such persons, the type of breathing has been found to be in women precisely the same as in men, namely, an expansion of the whole chest. The movement is naturally less at the upper part than at the lower part, for the reason that the ribs which form the framework of this portion of the chest wall are shorter and more firmly held in position, while the lower ribs are supplied with long, flexible cartilages, which readily yield under the pulling action of the muscles of respiration.

The amount of air which passes out and in the lungs during respiration is about twenty-five cubic inches. This represents, however, but a small part of the actual capacity of the lungs. The average man is able to take into the lungs, after an ordinary inspiration, one hundred or more cubic inches, and to force out of the lungs, after an ordinary expiration, an equal amount. There is still left in the lungs, after as much air as possible has been forced out of them, about one hundred cubic inches, making the total lung capacity of the average man about three hundred and twenty-five cubic inches, or nearly one and a half gallons.

The act of breathing is a blood-pumping process as well as the means by which air is removed in and out of the chest. Each time the chest wall is elevated after the lungs have been emptied and the succeeding inspiratory movement begins, a suction force is exerted upon the large veins which enter the chest, especially those which come in through the abdominal cavity. At the same moment, the downward pressure of the diaphragm by which the liver, stomach, and other abdominal organs are compressed against the muscular walls of the abdomen, serves

to force the blood from below upward, emptying the venous blood of the abdominal cavity into the chest, thus helping it on toward the heart. The more tense and well developed the muscles of the abdominal wall, and the stronger the muscles of respiration, the stronger will be this upward movement of the blood. When the abdominal muscles are weakened by improper dress, tight lacing, or by the wearing of belts or bands, or by sedentary habits, especially sitting in a stooped position, the weakened muscles yield to the downward pressure of the diaphragm, thus neutralizing to a large degree the beneficial influence of this action. This condition is unquestionably a cause of chronic disease of the liver and stomach, inactive bowels, and possibly lays the foundation of cirrhosis of the liver, spleen, and other grave disorders of the abdominal viscera.

These facts call our attention to the wonderfully intimate relations which exist between the functions of different parts of the body. Vigorous breathing not only benefits the lungs and purifies the blood, but aids digestion, promotes the absorption of food, and assists the portal blood through the second set of capillaries in which it is spread out in the liver.

AN INDIVIDUAL MENU FOR ONE DAY, SHOWING AMOUNT NEEDED AND CALORIES OR FOOD UNITS FOR EACH ARTICLE

BY ESTELLA F. RITTER

BREAKFAST			Calories
Lemon Apple	5	oz.	180
Browned Steamed Rice	4	"	128
Cream	2	"	115
Corn Puffs	2½	"	102
No-Coffee	6	"	112
Total Calories for Breakfast			637
DINNER			
Cream of Celery Soup	8	oz.	126
Stuffed Potato	4	"	131
Pease Patties	4	"	120
Brown Sauce	1	"	58
Graham Bread	2	"	152
Butter	1	"	228
Granose Apple Pie	4¼	"	184
Total Calories for Dinner			999
SUPPER			
Canned Peaches	4	oz.	84
Granose Flakes	¾	"	74
Malt Honey	1½	"	129
Apple Juice	6	"	102
Total Calories for Supper			389

Calories for Breakfast	637
Calories for Dinner	999
Calories for Supper	389
Total Calories for one day	2,025

Lemon Apple.— Prepare a five-ounce tart apple by removing the core. Fill the cavity with a mixture of one-half teaspoonful grated lemon rind, one-half ounce or two teaspoonfuls sugar; squeeze a few drops of lemon juice over the apple, and bake.

Browned Steamed Rice.— Spread one and one-half ounces or two tablespoonfuls rice on a shallow baking tin, and put into a moderately hot oven to brown. It will need to be stirred frequently to prevent burning and to secure a uniformity of color. Each rice kernel, when sufficiently browned, should be of a yellowish brown, about the color of ripened wheat. Put into a double boiler, adding three ounces or one-fourth cup

Pease Patty—Brown Sauce

water, and salt to taste. Steam twenty to thirty minutes, and serve with cream.

Corn Puffs.— Blend thoroughly one and one-half ounces or one-eighth cup of milk, and one-eighth of the yolk of an egg. Add one and one-half ounces or one-fourth cup white flour and one-half ounce or one tablespoonful corn flour. Beat the batter thoroughly; stir in lightly the well-beaten white of one-eighth of an egg. Bake in heated gem irons about thirty minutes.

Steamed Browned Rice

No-Coffee.—Take two teaspoonfuls of No-Coffee (tie in a coffee bag or cheesecloth) and put to boil in eight ounces of cold water. Boil slowly from five to eight minutes. Serve with cream.

Cream of Celery Soup.— Chop quite fine two ounces or one-third cup of celery; cook until tender in three ounces or one-third cup of boiling water. When done, heat three ounces or one-third cup of milk to boiling, add celery, salt to season, and thicken the whole with one-half teaspoonful of flour rubbed smooth in one tablespoonful of milk.

Stuffed Potato.— Prepare and bake a four-ounce potato. When done, cut evenly three-fourths of an inch from the end and scrape out the inside, taking care not to break the skin. Season the potato with salt and two tablespoonfuls of cream, being careful not to have it too moist, and beat thoroughly with a fork until light; refill the skin with the seasoned potato, fit the broken portions together, and reheat in the oven. When hot throughout, wrap the potato in a square of white tissue paper fringed at both ends. Twist the ends of the paper lightly together above the fringe. When served, one end of the paper is untwisted, the top of the potato removed, and the contents eaten with a fork or spoon.

Pease Patties with Brown Sauce.—

Stuffed Potato

Soak dried Scotch peas in cold water overnight. Put to boil in warm water, and boil until tender and quite dry. Press through a colander, removing the skins. Take four ounces or one-half cup of the pease pulp, adding one-half ounce or one teaspoonful bread crumbs, and one-half ounce or one tablespoonful cream, salt to season. Mix well, and shape into round patties about one inch thick. Brown on tins until dry and mealy. Serve with brown sauce, made by heating one and one-half ounces or one-eighth cup of cream to boiling, thicken with one level teaspoonful browned flour rubbed to a smooth paste in one tablespoonful of milk.

Granose Apple Pie.—Spread one-third ounce of granose flakes on a saucer or small pie tin. Pare and cut three ounces of apples into small pieces, spreading on top of flakes. Sprinkle with one-fourth ounce sugar and one-fourth ounce of ground walnuts. Spread top with one-half ounce of the flakes, cover closely with another plate, and bake in a moderate oven until the apples are tender.

HYDRIATIC TREATMENT OF BRUISES

FOR severe contusion in consequence of a blow received on any of the soft parts of the body, apply a hot fomentation as soon as possible after the accident. Fold a soft flannel large enough to more than cover the bruise, twice, so as to make four thicknesses. Dip in very hot water, lifting out by the ends and placing in the middle of a towel. Roll up quickly lengthwise of the towel and wring as nearly dry as possible by twisting the ends of the towel. In this way the fomentation can be wrung out much hotter than with the hands. Of course, it will be too hot to apply to the bare flesh; but do not waste heat by letting it cool. Protect the skin by one or more thicknesses of flannel and apply at once, covering with a dry flannel. Renew when the heat begins to moderate very perceptibly. Finish with an application of cold.

Repeat the fomentation at intervals of two or three hours as long as the bruise remains sore and painful. During the interval apply over the part a compress consisting of a towel wrung as dry as possible from cold water, and covered first with mackintosh, then with several thicknesses of flannel to maintain warmth.

The hemorrhage beneath the skin, which frequently occurs in consequence of a severe bruise, may generally be prevented by firm compression immediately after the injury. It is a custom among German mothers when a child falls, striking its head severely, to apply the convex surface of the bowl of a teaspoon immediately upon pick-

THE HOT FOMENTATION

ing it up. The compression can be kept up by means of a pad and bandage as long as desired.

Much of the discoloration which results from bruises, which is particularly undesirable when the eye is the part injured, may be prevented by the continuous application of hot fomentations for some time after the accident. The sooner the hot applications can be made, the better. The object of this treatment is to cause contraction of the blood-vessels and thus diminish the amount of hemorrhage. Cold is very efficient for the same purpose, but it should not be applied for more than half an hour without removal for a few minutes, as the blood-vessels become paralyzed. Alternate hot and cold applications are better than either hot or cold alone.

Lotions of various sorts are recommended for the prevention of discoloration. Probably water alone, equal parts of alcohol and water, or a lotion of common salt and vinegar, are as efficient as any that can be employed. A favorite remedy with some, for bruises and contusions, is tincture of bryonia. We think, however, that none of these remedies are better than hot water faithfully applied. When there is a marked tendency to inflammation, as indicated by heat, redness, swelling, and much pain, cold applications should be vigorously applied. When suppuration has taken place, poultices should be used. If there is high fever and chills, the abscess should be lanced.

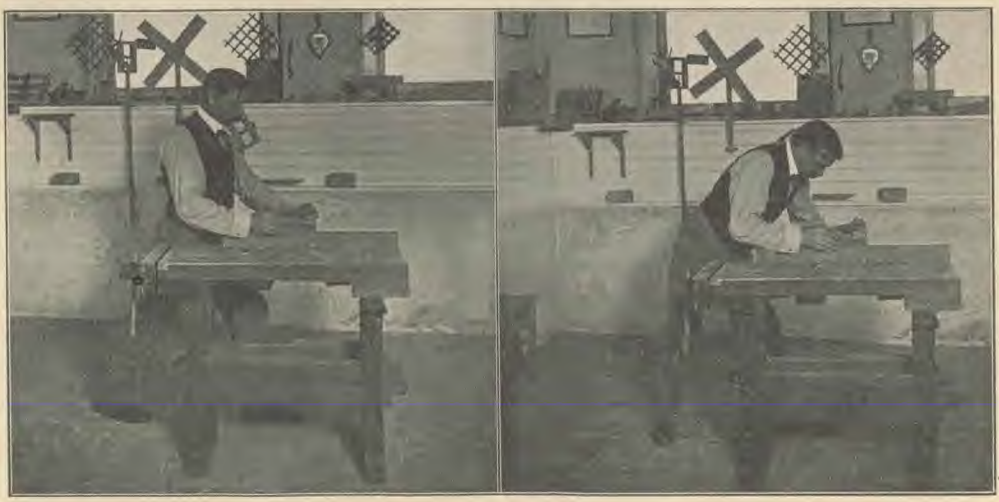
Arnica is a popular remedy for bruises, but its use is of doubtful propriety, as it frequently produces local symptoms of poisoning, and often gives rise to disease of the skin of parts to which it is applied. When a person has been much jarred, as by a considerable fall, or more or less bruised all over, a hot full bath or a hot blanket pack will give more relief than any other remedy. This measure should not be employed, however, when the patient is faint.

In case a person has been bruised about the trunk or body, by having a tree fall upon him or being run over by a wagon wheel, the services of a skilful surgeon should be obtained as soon as possible. Hot fomentations or a hot full bath may be employed in the meantime.

Bruises upon the head in consequence of severe blows or a fall, often give rise to serious symptoms on account of fracture of the skull and compression of the brain, or from simple concussion, or jarring of the brain. If a person is insensible or partially paralyzed in consequence of an accident in which the head is injured, surgical advice should be secured at once. As a general rule, continuous cold is the best application for injuries resulting from severe blows upon the head. Fomentations may be applied at intervals to relieve soreness, but the application should be continued not longer than five or ten minutes at a time.

J. H. K.

"Enough of science and of art;
Close up these barren leaves.
Come forth! and bring with you a heart
That watches, and receives."



A FINE SPECIMEN

HOW many of the little boys and girls who read this know what a specimen is? If you should visit a watchmaker's shop, and he should give you a beautiful watch which he had made, that would be a specimen of his work. If the watch should turn out to be a bad one, you would say he was a bad workman.

If a man should show you an ingenious machine which he had made to kill people with while they were fast asleep, and thus enable him to rob them, what would you say. Would you say he was a bad workman? No; you would say he was a bad man engaged in a bad business. His machine may have been made very well indeed, and a very good specimen; but it shows that the man is engaged in a very bad business.

Our picture shows what we call "a fine specimen;" not because it is a nice-looking object, but because it shows so well the kind of work done by the men who keep saloons. Do you not think it a very appropriate sign for a grog-shop? Perhaps if we had a large copy of this picture, placed in a frame and hung up in the window of every saloon, many boys and young men would be warned to keep out of them. We hope none of you will ever become "a specimen of the work done inside" one of these haunts of sin.

A Smoke House.

Tobacco smoking is not only a very dirty habit, ruining the health and spoiling the character, but it is also a very wasteful habit. If every smoker would reckon up how much money he throws away on tobacco every year, and then think how much good he might do with that amount of money if he spent it in some other way, there would not be so many people with money to burn up into tobacco smoke.

A man whose business is that of a clerk built himself a house that cost three thousand dollars. His friends told him that they were very much surprised that he could afford to build so fine a dwelling.

"Why," said he, "that is my smoke house."

"Your smoke house! What do you mean?"

"Why, I mean that twenty years ago I left off smoking; and I have put the

money saved from smoke, together with the interest, into my house. Hence I call it my smoke house."

Now, boys, we want you to think of this when you are tempted to take your first cigar. Think how much good might be done with the money you are beginning to spend in smoke.

THE FIRST TASTE

THE FULL TASTE

LOSES HIS TONGUE

Boys, how much would you enjoy life without your tongue? How would you enjoy being eaten up by a cancer? Not much enjoyment, you are ready to say. But medical authorities tell us that tobacco using, especially smoking, is one of the causes of cancer.

Only a short time ago a Mr. B. S. Finch, of Brooklyn, N. Y., was compelled to submit to an operation in the removal of his tongue. He had been an inveterate smoker for years. It is stated that this is the second operation of a like nature performed in that city within a few months.

That hero of many battles, General Grant, met his death by cancer caused by smoking. Why is it that men will run such fearful risks, all to gratify a perverted appetite? Why will they allow themselves to become slaves? — *"Save the Boys."*

By the Editor

IS THERE A CANCER CURE?

FIFTY years ago this question was asked in relation to pulmonary consumption, and for a quarter of a century it was answered in the negative. Trudeau, Dettweiler, and others proved the curability of tuberculosis by a method which is simplicity itself. It consists of nothing more than the adoption of such measures as if applied to a healthy man would increase his vigor and robustness. That the open-air, the cold-air, method of treatment is capable of curing tuberculosis, at least in its incipient stage, is no longer questioned.

Some months ago the writer had the pleasure of visiting the Rutland (Mass.) State Sanatorium for consumptives, and was informed by one of the physicians that of the patients received, fully half were cured, and nearly all the remainder were greatly improved. At the present time similar results are being obtained everywhere; not only in sanatoriums and in climates supposed to be especially favorable for the treatment of tuberculosis, but in private homes. Even in our great cities, men and women are being cured of tuberculosis by sleeping out of doors upon the roofs of buildings.

The outdoor life, constant exposure to the influence of pure air, especially of cold air, cures a consumptive by giving him better blood, a more resistant body, and the ability to destroy and expel from his tissues the specific microbe of tuberculosis. No good reason has been shown why the same method ought not to succeed in a multitude of chronic maladies. The real curative power resides not in drugs or remedies of any sort, but in the resistance of the tissues.

The work of Metchnikoff, and of a multitude of other investigators of recent times, has placed upon a thoroughly sound and scientific foundation the principles laid down by Deitl, the famous pupil of Rokitansky, and expressed in the following classic words: "Nature heals. This is the first and greatest law of therapeutics,—one which we must never forget. Nature creates and maintains; therefore she must be able to heal." It is to the natural powers of the body that we must look for healing. The measures most effective in the cure of any disease must be those which most certainly and to the highest degree call into operation and re-enforce the natural healing forces of the body.

The open-air and cold-air methods of treating pulmonary tuberculosis are effective only because they accomplish this, and if they are able to accomplish this important work for so grave and hopeless a malady as pulmonous tuberculosis, why may they not prove efficient in the treatment of cancer and other cachexias? Of course no method of treatment can be a substitute for wise and skilful surgery. The focus of cancerous disease, as well as one arising from tubercular infection, can be dealt with in no more effective way than by excision, but something more is needed for a radical cure. The fact that a patient has a tubercular infection or cancerous disease is evidence that somehow the resistance of the body has been lowered, so that it has become vulnerable to attack by certain forms of disease. This vulnerability is the thing of which the patient must be cured before he can be pronounced well. This is only one way of say-

ing that the vital resistance must be increased. How can this be better done than by the same methods which are employed in the open-air treatment of tuberculosis? That it is possible for the living tissues to eliminate cancerous disease without medical or surgical aid,—in other words, that the spontaneous cure of cancer is possible,—is by no means an unreasonable proposition.

The writer has encountered several cases in which such a cure seems to have taken place. In one case, the details of which can not be given at the present time, a cancerous appendix was removed, the incision passing, as was subsequently shown, directly through cancerous tissue. At a later operation the stump was found perfectly healed, no evidence of cancerous disease whatever about it, although a malignant growth was found in the immediate vicinity, but distinctly removed from it. The morbid specimen removed was submitted to the criticism of some of the most eminent living pathologists, who found in the mucous membrane lining the appendix certain evidence of cancerous disease. The facts of this case can not be explained otherwise than by the recognition of a power within the tissues to successfully combat this formidable disease.

It seems probable that in this case the vascular activity set up by the operation increased the local resistance to such a degree that the cancerous structures were destroyed by phagocytosis and other natural means.

Cancer is increasing at a rapid rate. The mortality from cancer in Great Britain has more than doubled within the past thirty years, notwithstanding the great number of lives saved by the timely application of the skilful and effective measures of modern

surgery. According to the facts published by the United States Bureau of Statistics, cancer increased in this country 12.1 per cent in the ten years just preceding the last census. From this it appears that cancer is increasing even more rapidly in this country than in England. It is known that cancer is rapidly increasing in France, and without doubt the same increase is taking place in all civilized countries.

It is first of all important to find out what are the causes of this most deadly of maladies; next, to apply such measures as will in the most effective manner combat the increased susceptibility to this disease, which must be in every case a predisposing cause. The writer believes that there is ground for hope that the thorough application of the open-air or cold-air method, combined with the careful regulation of the diet and of all habits of life in harmony with simple health principles, will be found nearly, if not quite, as effective in dealing with cancer as with pulmonary tuberculosis. The writer does not desire to be understood as advocating these measures as a substitute for surgery, but rather as the complement to surgical methods. In every case the diseased tissues should be eradicated as thoroughly as possible by the use of surgical and all other known means, and the patient should then be placed under conditions the most favorable for developing high resistance.

Among these conditions might be mentioned the low-proteid diet. It is more than probable that the excessive consumption of food rich in proteids — in other words, a meat diet, flooding the body with an excess of the proteid element — is to a very considerable degree responsible for the development of the predisposition to cancer which is so easily discernible in recent times.

Hydrotherapy, phototherapy, outdoor exercise, every means whereby a normal metabolism may be encouraged, are the measures most to be relied upon to combat this gigantic evil which is at the present time advancing with such rapid strides.

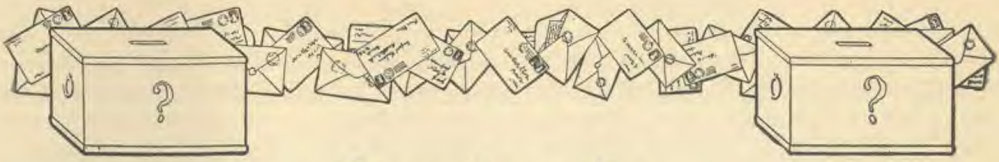
Effects of Smoking on the Pulse.

Professor Washburn, of the Oregon State University, has been studying the effect of the cigarette upon the pulse. By means of the sphygmograph he obtained a clear tracing of a normal pulse, then had the same person smoke a cigarette, with the effect that the pulse-rate was increased from seventeen to twenty-two during a given time. This is not an evidence, however, of increased work done by the heart, but rather of heart weakness; for a heart beats slowly when it is strong, and rapidly when it is weak. The weaker the heart, the more frequent are its beats. Tobacco is not a stimulant, but a paralyzer.

A Spry Vegetarian.

Mr. George M. Wright, a young man living in Philadelphia, recently walked from Philadelphia to Jersey City, a distance of eighty-six miles, in twenty-two and a half hours — a very creditable performance for a young man of twenty-two years who has never had a professional training in athletics. As his picture shows (page 68), Mr. Wright is very slender in appearance, but he evidently has considerably more than the average endurance, which he attributes to the fact that he has been all his life an abstainer from flesh in all forms. Mr. Wright is somewhat proud of his pedigree, having behind him three generations of non-flesh-eating ancestors. Mr. Wright thus disproves in his own person the theory that vegetarianism tends to weakness and race extinction.

THE Creator, the great Law Giver, says to all of his creatures, "Obey and live." This is a principle of universal application. Obedience is the price of life. Death is the penalty of transgression,— not an arbitrary infliction, but a natural result of refusing to conform to the conditions which make life possible.



Question Box

10,288. Boils.—J. M., Canada, wishes to know, why, after eighteen years of a strictly vegetarian life, he should be troubled with boils.

Ans.—The occurrence of boils is due to lowered vital resistance. The alkalinity of the blood is diminished, and the general resisting power of the body is lessened, so the pus-producing germs which are always present in abundance on the skin find their way under the skin, developing in the subcutaneous tissues, producing acne, boils, and even deep-seated abscesses. The remedy is to make the blood pure and to keep the skin clean. The surfaces which are subject to boils should be washed with soap daily. The underclothing should be changed every day. There should be a change in diet. Potatoes, fruits, and fruit juices, and such fresh vegetables as spinach, should be freely used. Eat less bread and cereals, as these tend to lessen the alkalinity of the blood, which is necessary for high resistance. Drink freely of water. The frequent cause of boils is a dilated colon. The blood is poisoned by the retention of the large amount of putrescent fecal matters in the colon. The poisons formed are absorbed into the blood, contaminating the tissues, and lowering vital resistance. This is a frequent cause of boils with people who do not make use of meat, and whose habits may be in many respects correct. The open-air life and abundance of muscular exercise are other essential means of maintaining a pure state of the blood.

10,289. Linen Underwear — Diet. — D. F., Illinois: "1. Does fish contain uric acid? 2. Is it safe to eat fish? 3. Is cotton underwear as healthful as woolen? 4. What is the best food in case of acidity of the stomach?"

Ans.—1. Yes.

2. A fish is as good as a cat—no better. The fisherman always takes a worm or a fly, or a bit of meat, or some other animal substance, for bait, for the reason that fish are scavengers. Big fish eat little fish, and the little fish eat smaller ones. Fish are cannibals. The nutritive value of fish is somewhat less than that of flesh meats, but in general, fish is no more easily digestible than butcher's meat. On the whole, fish is inferior to the flesh of warm-blooded animals. Fish is subject to parasites which may take up their abode in the human alimentary canal, though not to the same extent as those found in beef and pork. There is no excuse for eating fish when Nature affords such a large amount of wholesome foodstuffs which do not require the taking of life, and which do not involve the risks run in the use of animal tissues.

3. For most persons, cotton is more wholesome, healthful, and agreeable than woolen. In winter time thin cotton garments may be worn next to the body and a woolen suit outside for warmth. The fleece-lined cotton underwear may be recommended as healthful, durable, and economical for cold weather. Cotton, also, is wholesome for summer. Linen may possibly be a trifle better, but after experimenting for many years, the writer is convinced that cotton is good enough. It is more durable, much less expensive, and practically just as healthful.

4. Acidity of the stomach is due to the presence of an excessive quantity of hydrochloric acid. It requires an unstimulating diet. All condiments and all flesh foods must be avoided. The diet should be rather dry, moderate in quantity, and the amount of starch or carbohydrates should be limited. Sterilized butter and nuts rich in fat are very wholesome in cases of this sort. Chloride of sodium must be avoided, and in many cases also acid fruits. Acid fruits, however, are not harmful unless they give rise to pain. Malted nuts may be freely used, and in most cases buttermilk and thick sterilized cream also. Bread should be taken only in the form of zwieback. The amount of bread should be restricted. Most patients are benefited by increasing the amount of fats, which tends to diminish the formation of hydrochloric acid.

10,290. Acne.— A. M., Massachusetts: "1. What is the cause of and remedy for acne on the breast and shoulders? 2. Of bad taste in the mouth in the morning, and also when lying down in the day-time?"

Ans.— 1. See first answer to 10,288. Thoroughly shampoo the affected surfaces with soap and distilled water twice a day. After rubbing with soap, follow with short rubbing with very cold water, and massage. Improvement of the circulation of the affected parts will tend to restore the skin to a healthy state, while the improvement of the blood by the measures suggested above will remove the cause of the difficulty. Bathing the parts with very hot water is also to be recommended; also alternate hot and cold bathing, alternating eight or ten times at intervals of fifteen seconds. A sweating bath should be taken once or twice a week.

2. A common cause of bad taste in the mouth under the conditions named is mouth breathing. Many persons breathe through the mouth while asleep, though the habit may not be noticeable when awake. In these cases there is probably obstruction of the nose, which should be removed by proper treatment. A nose specialist should be consulted.

Literary Notes

THOMAS F. MILLARD, in the January **Scribner's,** contributes another of his illuminating papers on the Far East, this one entitled "The Powers and the Settlement," giving a most judicial view of the bearing which the recent peace has upon each of the great nations involved, particularly the interest that the United States has in the problem of keeping the "open door" open.

There is a terrible "slaughter of innocents" going on before our eyes, and we are only beginning to realize that we can stop it, says Lilian Brandt in **Good Housekeeping.**

All these discoveries, it must be admitted, will be very depressing. But they are only half the truth. The cheerful part is that we can stop all this suffering and waste if we will. Tuberculosis is a communicable disease, and we know exactly how it is communicated. From this it follows that it is preventable, for we know just how to keep it from spreading from the sick to the well, and fortunately the means are so simple that a child can be made to understand them. And it is not only preventable, but also curable, which means that there is hope for every person in the early stages of consumption if he can have the right kind of treatment.

Consumption would soon become as rare a disease as leprosy if all members of society could be induced to co-operate in intelligent efforts to eliminate it. It is doubtful whether, in this struggle with the "captain of the men of death," any group of persons can be of more service than the cultured women of the leisure class.

"Materia Medica for Nurses." By John E. Groft, Ph. G. Third edition, revised. P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia. 1905.

The nurse's profession demands women of a high order of intelligence with a preparation for their work as thorough as is that of the physician for his. A course in materia medica is now recognized as an indispensable part of the nurse's training. This work gives the necessary knowledge in a condensed form, and so arranged as to enable the nurse to acquire it more easily than from the larger works on the same subject. An appendix giving list of questions for self-examination is a useful addition to the work.

Many prominent lung specialists will contribute articles during 1906 to the **Journal of the Outdoor Life,** published at Trudeau, in the Adirondack Mountains. The *Journal of the Outdoor Life* aims to be helpful to all persons leading an outdoor life for their health, and particularly to be of assistance to those who are suffering from or threatened with lung trouble. It advocates fresh air, nourishing food, and carefully regulated exercise. Among many noted physicians who have already contributed articles along these lines are Dr. William Osler, former Professor of Medicine at Johns Hopkins University, Baltimore, and now Regius Professor of Medicine, Oxford University, England; Dr. Vincent Y. Bowditch, Visiting Physician to the Massachusetts State Sanatorium; Dr. Charles L. Minor, Director in the National Association for the Study and Prevention of Tuberculosis; Dr. Robert H. Babcock, Professor of Diseases of the Heart and Lungs, Northwestern University, Chicago; Dr. S. A. Knopf, of New York; Dr. Herbert Maxon King, of Liberty, N. Y.; Dr. S. G. Bonney, of Denver, Colo.; Dr. Irwin H. Hance, of Lakewood, N. J.; Dr. F. M. Pottenger, of Los Angeles, Cal.; Dr. Hugh M. Kinghorn, of Saranac Lake, N. Y.; and Dr. Norman Bridge, of Los Angeles, Cal.

Besides the articles on the prevention and cure of consumption, the *Journal of the Outdoor Life* will publish many articles of interest to persons who are not threatened with illness, but who take a deep interest in open-air pastimes. The subscription price is $1.00 a year.

GOOD HEALTH

A Journal of Hygiene

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

Subscription Price, $1.00 a Year *Single Copies, 10 cents*

PUBLISHED MONTHLY BY

GOOD HEALTH PUB. CO.

115 Washington Ave., N.

BATTLE CREEK, - - - MICHIGAN

CALL TO THE JUBILEE CONVENTION OF THE NATIONAL TEMPERANCE LEAGUE.

To Our Fellow-Workers in All Parts of the British Empire, America, and the Foreign Field.

ON behalf of the Executive of the National Temperance League, we invite your attention to the fact that the Jubilee of the League will be celebrated throughout the year 1906 by a series of meetings and receptions, held by invitation of kindred organizations and public bodies in various parts of the United Kingdom.

In addition to these gatherings the special celebration will take place in London —

From Sunday to Sunday, October 21 to 28 next,

when an important convention will be held, to which a large representation is expected from all over the world.

The work of the League during the past fifty years has chiefly consisted of the formulation of evidence upon all phases of the temperance question, but especially upon the scientific aspect, and its diffusion by specialized efforts through influential sections of the community. These operations have admittedly been a powerful factor in creating the present favorable position of the temperance movement.

The program of the convention will include, in addition to sermons on both the Sundays and the president's address, a series of attractive gatherings at which the members will be invited to meet the veterans of the movement, the colonial and foreign visitors, and the representatives of various sectional interests; and there will be two public meetings of an exceedingly interesting character.

The conference sittings will take place on the mornings of Tuesday, Wednesday, Thursday, and Friday, October 23 to 26, with possibly a concluding session on the Saturday morning. The proceedings will be devoted to the presentation of the Total Abstinence question under the headings of —

(1) Science and Education.
(2) Religion and Morals.
(3) Commerce and Industry.
(4) Sociology and Economics.

At each of the sittings the chairman will deal with the history of the subject, and in two papers will be presented the accumulated evidence, and suggestions as to methods for its diffusion throughout the community.

Membership of the convention is open to any person interested in the movement who subscribes the sum of five shillings to the convention funds, which sum will cover a souvenir report of the proceedings.

J. W. LEIGH, D. D.,
Dean of Hereford, President.
JOHN Y. HENDERSON,
Chairman of the Executive.
JOHN TURNER RAE, *Secretary.*
Paternoster House, London, E. C.

"DIVINE law is quite as rigid in its demands and penalties in the moral sphere as in the physical; and common experience teaches us how inflexible it is in the latter. The infant grasps with delight the keen-edged blade or the flame of the burning candle, as a thing of beauty and joy, and its ignorance does not save it from physical injury and suffering. The patient, by mistake, swallows the fatal dose of poison, thinking he is taking a healing medicine, and his ignorance or erroneous opinion does not prevent the poison from doing its deadly work. The blind man or the benighted traveler, thinking he is treading a secure path, stumbles over the rugged precipice or into the boiling tide, and his ignorance or wrong opinion does not prevent the destructive effects of the fall upon the jagged rock or into the devouring flood. In like manner deluded people imbibe alcoholic, poisonous liquors, believing them to be wholesome, invigorating beverages, and their ignorance or false opinion has no effect in preventing the inevitable results of moral injury, physical disease, and

premature death. The doing of wrong ignorantly, where knowledge on the point is easily obtainable, is about equal in guilt to wilful transgression. Every person of average intelligence knows now, or might know, that it is wrong to drink intoxicating liquor; therefore the guilt of those who perpetuate the infernal drink curse in our midst is fearfully great."

The above pithy paragraph is from **The Bible Temperance Educator,** edited by Rev. John Pyper, for more than forty years the leading temperance advocate in the Emerald Isle. His editorials are distinguished by rare logical ability, perspicuity, and persuasive earnestness. The most noted and experienced temperance workers are contributors to the magazine, which is a quiver of well-sharpened arrows for use in the crusade against the use of alcoholic beverages and allied evils.

We have just received from W. B. Saunders and Company, of Philadelphia, the widely known medical publishers, an unusually attractive illustrated catalogue of their complete list of publications. It seems to us, in glancing through this catalogue, that a list of the Saunders authors is a census of the leading American and foreign authorities in every branch and specialty of medical science. And new books are being added and new editions issued with a rapidity that speaks well for the success and progressiveness of the house.

OUR LIBRARY PLAN

We want a Librarian in every town and city. Write to-day for particulars how to secure $5.00 in cash and 22 leading publications valued at $26.60. Ask for full particulars of the Good Health Magazine Library Plan. Address,—

GOOD HEALTH MAGAZINE LIBRARY PLAN

Care of THE GRUMIAUX NEWS & SUBSCRIPTION CO., Le Roy, N. Y.

The Most Wonderful Offer

OUR PRICE

$2.50

ALL THREE

REVIEW OF REVIEWS, ONE YEAR, - $3.00
COSMOPOLITAN - - - - - - - - 1.00
WOMAN'S HOME COMPANION or HARPER'S BAZAR, - - - - - - - - 1.00
Regular Price, $5.00

With GOOD HEALTH

$3.00

ALL FOUR

All Publications can go to Separate Addresses. New or Renewal. Ask for Our Big Catalogue.

The Ladies' Home Journal (MONTHLY) { BOTH a Full Year **$2.50** } **The Saturday Evening Post** (WEEKLY)

Ladies' World or Modern Priscilla, *McCalls or *Housekeeper, World's Events or Art Student, or any Class No. 1 publication, will be sent in clubs as follows: —

		With Good Health
Including: Two of Class No. 1	$1.25	$1.75
or Cosmopolitan (or Success)	1.25	1.75
or Harper's Bazar	1.25	1.75
or Woman's Home Companion	1.35	1.85
or American Boy	1.25	1.75
or Sunset	1.50	2.00

Cosmopolitan or Success, or Pictorial Review with Patterns, Harper's Bazar or Pearson's, Suburban Life or Four Track News, or any Class 2 publication, will be sent in clubs as follows: —

Including: Lippincott's	$2.50	$3.00
or House Beautiful	1.60	2.10
or Review of Reviews and one Class No. 2	2.50	3.00
or Illustrated Outdoor News	3.00	3.50
or Current Literature	3.00	3.50
or Ladies' World	1.25	1.75

Woman's Home Companion, or Good Housekeeping, or House Beautiful, will be sent in clubs as follows: —

Including Junior Toilettes	$1.85	$2.35
or Harper's Bazar	1.60	2.10
or Four Track News	1.60	2.10
or Review of Reviews and one Class No. 2	2.60	3.10
or Cosmopolitan	1.60	2.10
or Lippincott's and Recreation	3.10	3.60
or American Inventor (or Pearson's)	1.60	2.10

World's Work or Critic will be sent in clubs as follows: —

Including: Success, Harpers' Bazar	$3.25	$3.75
or Scribner's	5.25	5.75
or Leslie's Weekly	5.25	5.75
or Atlantic Monthly	5.60	6.10
or Current Literature	3.75	4.25
or Cosmopolitan and Harper's Bazar	3.25	3.75

Harper's Magazine or Weekly, or Atlantic Monthly, will be sent in clubs as follows: —

Including: House Beautiful	$4.45	$4.95
or Country Life in America (after 2-1-06, $7.35)	6.35	6.85
or North American Review	7.60	8.10
or Century	7.25	7.75

American Magazine (Leslie Mo.), or Metropolitan Magazine, or Toilettes Junior, or Red Book, or any Class No. 3 publication will be sent in clubs as follows: —

		With Good Health
Including: Harper's Bazar	$1.75	$2.25
or World's Work	3.00	3.50
or Success and Cosmopolitan	2.25	2.75
or Smart Set (or Ainslees) and one of Class 1	3.00	3.50
or Good Housekeeping	1.85	2.35
or Country Life in America (after 2-1-06, $4.75)	3.75	4.25

Review of Reviews, or Search Light, or Musician, or Etude, or Ram's Horn, or Outdoor Life, or any Class No. 4 publication, will be sent in clubs as follows: —

Including: Two of Class No. 2	$2.50	$3.00
or Outing	3.00	3.50
or Lippincott's	3.00	3.50
or Harper's Bazar, Cosmopolitan	2.50	3.00
or Burr McIntosh	3.00	3.50
or Woman's Home Companion and Cosmopolitan	2.60	3.10

Booklover's or Lippincott's, Ainslees or Independent, Current Literature or Outing, Smart Set or Burr McIntosh, or any Class No. 4 publication, will be sent in clubs as follows: —

Including: Two of Class No. 2	$3.00	$3.50
or World's Work	3.75	4.25
or Outdoor Life	3.00	3.50
or Harper's Bazar and Cosmopolitan	3.00	3.50
or Country Life in America (after 2-1-06, $5.50)	4.50	5.00
or Scribner's	5.00	5.50

St. Nicholas or Scientific American Weekly, will be sent in clubs as follows: —

Including: Smart Set	$4.50	$5.00
or Outdoor Life	4.00	4.50
or American Illustrated	3.75	4.25
or Woman's Home Companion	3.60	4.10
or Booklovers	4.50	5.00
or Leslie's Weekly	6.00	6.50
or Musician (or Etude)	4.00	4.50

Century Magazine or International Studio, will be sent inclubs as follows: —

Including: Country Calendar	$6.00	$6.50
or St. Nicholas	6.50	7.00
or Success and Cosmopolitan	5.00	5.50
or Review of Reviews	5.00	5.50
or Lippincott's	5.50	6.00
or World's Work	5.75	6.25

FREE **Send us three clubs named above, your own and two others making the three, we will send you any Class No. 2 magazine in our 64-page catalogue. Ask for it.**

FREE **Send to-day for a copy of our handsome 64-page Catalogue of the latest offers for '05-'06. It is FREE. Write to-day.**

* When this magazine is included in any club as above, 10c extra should be added to the club price.

GOOD HEALTH PUBLISHING CO., Battle Creek, Mich.

In replying to advertisements please mention GOOD HEALTH.

SECURE A MONEY-MAKING INTEREST

IN THE WORLD'S GREATEST HEALTH-MAKING INSTITUTION

THE BATTLE CREEK SANITARIUM IS AN INSTITUTION SOUND AND SAFE AS A BANK, YET WITH POSSIBILITIES OF GROWTH ALMOST UNLIMITED

Health is the greatest commodity in the world. All classes must have it. Neither financial nor market fluctuation can lower its value. No other institution in the world is equipped so well to supply it. No health-giving institution exists that is better known than the BATTLE CREEK SANITARIUM . . . . . .

HERE IS A RECORD OF WHAT WE ARE ACTUALLY DOING

1. The gross earnings of the institution for the year 1904 were $435,000.
2. The net earnings for the year 1904 were $51,000.
3. The gross earnings for the first six months of the year 1905 were $241,300, and from these earnings obligations were reduced to the amount of $33,000.
4. The gross earnings for the month of August, 1905, were $80,690.
5. The daily average number of guests at the Sanitarium during the months of July and August was 900.

GOLD BONDS SECURED

Strong as Uncle Sam's and Twice the Interest

THE BATTLE CREEK IDEA

There are hundreds of thousands of people who are being educated into the Battle Creek Idea — the right-living idea. And thousands of them are coming here to take treatment. Men in all walks of life — statesmen — governors — senators — professional men — editors — of national reputation, have come to this Sanitarium and know its advantages.

A chance to become a bondholder in this national health-bringing Sanitarium is as rare an investment opportunity as an investor can find.

The BATTLE CREEK IDEA is not a theory. It does not ask you to risk your money on prospects. It is a success now — to-day.

Note that some of the strongest, shrewdest financiers in the United States invested in these bonds when the earnings of the Sanitarium were even less.

To-day (September 15, 1905) there are only $40,000 more of the bonds to be sold. It will pay you to investigate, at least. The bonds are of small denomination — $100, $200, $500, or $1,000. There are privileges that go with them — that you will be interested in. You need simply write a letter to find out.

BATTLE CREEK SANITARIUM, Battle Creek, Mich.