Life & Health

THE NATIONAL [illegible]TH MAGAZINE

October 1913

10 CENTS A COPY - ONE DOLLAR A YEAR

WASHINGTON, D. C.

Boulder-Colorado Sanitarium, Boulder, Colorado

Non-Tubercular

One mile above sea-level, in one of the most beautiful spots in all Colorado, situated at the foot of the Rocky Mountains in the beautiful city of Boulder, thirty miles from Denver, the **Boulder-Colorado Sanitarium** offers its patrons an ideal place for rest, recuperation, and health training. This sanitarium is a pleasant, homelike place, splendidly equipped with the most modern and up-to-date appliances known to medical science for the successful treatment of disease. In addition to these advantages we keep constantly in our employ a number of splendidly qualified physicians of both sexes and a corps of well-trained nurses. Our institution is a member of a sisterhood of about eighty sanitariums throughout the world, all of which are conducted upon the same general health principles and employ the same methods of treatment, consisting of all curative agencies which are recognized as a part of rational medicine, including Baths of Every Description, Massage and Manual Swedish Movements, Electricity in Every Form, Classified Dietary, Laboratory of Hygiene for Bacteriological, Chemical, and Microscopical Investigations. Each succeeding year these methods of training the sick back to health by the application of nature's remedies are being more and more recognized, not only by the individual, but by the medical fraternity, as being scientific and effective in the treatment of all curable diseases. ¶Our institution has this advantage over the ordinary hospital, in that the hospital features are entirely eliminated by a system of segregation, our hospital and surgical ward being conducted in a separate building from our main sanitarium building.

Our sanitarium location is an ideal one, and we enjoy the advantages of a delightful summer and winter climate. Write for large catalogue.

Home and Health

"Broken health though mended
usually carries a scar."

"Home and Health" contains a vast amount of practical information on the establishment, furnishing, and maintenance of a modern home; the prevention and cure of disease; the care and training of children; and the preservation of health.

A few of the subheads will give a general idea of the nature of the book: "The Location of the Home;" "The Sewage;" "Healthful Surroundings;" "Furnishing the Home;" "Care of Floors;" Care of Laundry;" "Repairing Furniture;" "Pests;" "Don't's for Housekeepers;" "The Art of Dining;" "Stimulants and Condiments;" "Ventilation;" "Disciplining of Children;" "Don't's for Parents;" "Care of the Sick;" "Disinfectants;" "Emergency Treatments;" "Treatment of Minor Diseases."

The book contains nearly six hundred pages and is well illustrated. Price, cloth binding, $2.50.

Friend IN THE Kitchen

"Many persons die the
victims of poor cooking."

"Friend in the Kitchen" is a practical vegetarian cook-book containing about four hundred choice recipes carefully tested, which assist the housewife in making simple, economical menus, varied, nutritious, and palatable.

It also contains tables of weights and measures for the kitchen, rules for dyspeptics, useful tables on the nutritive values of foods, time required to digest various foods, substitutes for flesh foods, instructions for canning fruits, specimen menus for one week; and chapters on single dishes for the sick, wholesome drinks, proper food combinations, and food for infants.

The fact that nearly one hundred and sixty thousand copies of this book have already been sold is ample proof of its popularity. It contains 112 pages. Price, cloth, 50 cents; paper, 25 cents.

Review and Herald Publishing Assn., Washington, D. C.

ORDER OF OUR NEAREST AGENCY

OUR GENERAL AGENCIES

Kindly order "Life and Health" or any other publication advertised in this magazine from our agency nearest you

UNITED STATES

Alabama Tract Society, 1700 N. Seventh Ave., Birmingham, Ala.
Arizona Tract Society, 615 N. Tenth St., Phœnix, Ariz.
Arkansas Tract Society, Fayetteville, Ark.
California Bible House, 2201 Telegraph Ave., Oakland, Cal.
California-Nevada Missionary Society, 341 E. Lodi Ave., Lodi, Cal.
California Bible House (Central), Box 1304, Fresno, Cal.
California Tract Society (Southern), 417 W. Fifth St., Los Angeles, Cal.
Chesapeake Tract Society, 1611 Ellamont St., Baltimore, Md.
Colorado Tract Society (Eastern), 1112 Kalamath St., Denver, Colo.
Colorado Tract Society (Western), 122 South Eighth St., Grand Junction, Colo.
Connecticut (see New England, Southern).
Cumberland Tract Society (E. Tennessee), 1214 Hawthorne St., Chattanooga, Tenn.
Delaware (see Chesapeake).
District of Columbia Tract Society, 700 Tenth St., N. W., Washington, D. C.
Florida Tract Society, Drawer 28, Orlando.
Georgia Tract Society, 169 Bryan St., Atlanta.
Idaho Tract Society, Nampa, Idaho.
Illinois Tract Society (Northern), 3645 Ogden Ave., Hawthorne Station, Chicago, Ill.
Illinois Tract Society (Southern), 304 West Allen St., Springfield, Ill.
Indiana Tract Society, 521 East Twenty-third St., Indianapolis, Ind.
Iowa Tract Society, Nevada, Iowa.
Kansas Tract Society (East), 821 West Fifth St., Topeka, Kans.
Kansas Tract Society (West), 508 Fifth Ave., East, Hutchinson, Kans.
Kentucky Tract Society, Nicholasville, Ky.
Louisiana Tract Society, 810 Jackson Ave., New Orleans, La.
Maine Tract Society, 75 Grant St., Portland, Maine.
Maryland (see Chesapeake).
Massachusetts Tract Society, South Lancaster.
Michigan Tract Society (East), 426 Trumbull Ave., Detroit, Mich.
Michigan Tract Society (North), 510 Petoskey St., Petoskey, Mich.
Michigan Tract Society (West), Otsego, Mich.
Minnesota Tract Society, 336 East Lake St., Minneapolis, Minn. (Exchange case 45.)
Mississippi Tract Society, 932 Union St., Jackson, Miss.
Missouri Tract Society (North), Hamilton.
Missouri Tract Society (South), 520 West Lynn St., Springfield, Mo.
Montana Tract Society, Box 118, Bozeman.
Nebraska Bible Supply House, 905 North California Ave., Hastings, Nebr.
Nevada (see California-Nevada).
New England Tract Society (Northern), 136 N. Main St., Concord, N. H.
New England Tract Society (Southern), 51 Whitmore St., Hartford, Conn.
New Hampshire (see N. New England).
New Jersey Tract Society, 1109 Division St., Trenton, N. J.
New Mexico Tract Society, Box 286, Albuquerque, N. Mex.
New York Tract Society (Greater), Room 904, 32 Union Square, New York, N. Y.
New York Tract Society, 317 West Bloomfield St., Rome, N. Y.
New York Tract Society (Western), 8 East Jefferson St., Salamanca, N. Y.
North Carolina Tract Society, 711 W. Lee St., Greensboro, N. C.
North Dakota Tract Society, Box 285, Fargo.
Ohio Tract Society, Box 187, Mt. Vernon.
Oklahoma Tract Society, Box 644, Oklahoma City, Okla.
Oregon Missionary Society (Western), 508 E. Everett St., Portland, Oregon.
Oregon Tract Society (Southern), Roseburg.
Pennsylvania Tract Society (Eastern), 4910 Arch St., Philadelphia, Pa.
Pennsylvania Tract Society (Western), 635 Lincoln Ave., Pittsburgh, Pa.
Rhode Island (see New England, Southern).
South Carolina Tract Society, 2332 Park St., Columbia, S. C.
South Dakota Tract Society, Drawer R, Redfield, S. Dak.
Tennessee River Tract Society (Western Tennessee), 509 Cole Building, Nashville, Tenn.
Texas Tract Society, Keene, Tex.
Texas Tract Society (South), Box 392, Austin, Tex.
Texas Tract Society (West), Abilene, Tex.
Utah Tract and Bible Society, 776 E. Sixth St., S., Salt Lake City, Utah.
Vermont (see Northern New England).
Virginia Tract Society, 2705 West Main St., Richmond, Va.
Washington Missionary Society (Western), Box 328, Auburn, Wash.
Washington: Upper Columbia Tract Society, College Place, Wash.
West Virginia Tract Society, Fairmont.
Wisconsin Tract Society, Box 57, Grand Rapids, Wis.
Wyoming Tract Society, Crawford, Nebr.

UNITED STATES POSSESSIONS

Hawaiian Tract Society, 767 Kinau St., Honolulu, Hawaii.
Panama Tract Society, Cristobal, C. Z.
Philippine Islands Mission, 613 Nozaleda, Manila, Philippine Islands.

CANADIAN AGENCIES

Ontario Tract Society, Box 308, Oshawa, Ont., Canada.
Eastern Canada:
Canadian Pub. Assn., Port Hope, Ontario.
Maritime Tract Society, 457 Upper Robinson St., Moncton, N. B.
Newfoundland Tract Society, Box 217, St. John's, Newfoundland.
Western Canada:
Alberta Tract Society, Lacombe, Alta.
British Columbia Tract Society, 1708 Maple St., Vancouver, B. C., Canada.
Manitoba Tract Society, 290 Bannerman Ave., Winnipeg, Man., Canada.
Saskatchewan Tract Society, 1930 Angus St., Regina, Sask., Canada.

FOREIGN AGENCIES

Great Britain: International Tract Society, Stanborough Park, Watford, Herts, England.
India Union Mission: 19 Banks Road, Lucknow, India.
Mexico: Imprenta de la Verdad, 1420 Avenida 20, Tacubaya, D. F., Mexico.
South Africa: International Tract Society, 56 Roeland St., Cape Town, South Africa
West Indies: Watchman Press, Riversdale, Jamaica, B. W. I.

LIFE AND HEALTH, Washington, D. C.

☞ **If you find a Renewal Blank inside the front cover, it indicates that YOUR SUBSCRIPTION EXPIRES WITH THE RECEIPT OF THIS NUMBER. Please fill out the Blank and send the same, with remittance, to our NEAREST AGENCY. See advertisement "Our General Agencies."**

CONTENTS FOR OCTOBER

Entered as second-class matter June 24, 1904, at the post-office at Washington, D. C., under the Act of Congress of March 3, 1879. Published monthly by Review and Herald Publishing Assn., Washington, D. C.

PRICES, POST-PAID

Yearly subscription	**$1.00**	**Three years**	**$2.00**
Six months (subscriptions for less than six months not accepted)	**.50**	**Five years**	**3.00**
Single copy	**.10**	**Five copies, one year, to one or more addresses**	**5.00**

Five or more copies, mailed by publishers to five addresses or to one address, post-paid, each .05

NO EXTRA CHARGE ON FOREIGN SUBSCRIPTIONS

HOW TO REMIT.— Remittances should be made by Post-office Money-order (payable at Washington, D. C., post-office), Express Order, or Draft on New York. **Cash should be sent in Registered Letter.**

DATE OF EXPIRATION.— Your address on the wrapper shows the date of expiration of your subscription. To avoid missing any numbers, please **renew early,** for we **stop** all subscriptions **promptly upon expiration.**

CHANGE OF ADDRESS.— When a change of address is desired, both the **old** and the **new address** must be given. The publishers should be notified six weeks in advance of the desired date of change.

SUBSCRIPTIONS GUARANTEED.— Our authorized agent will present signed **credentials** from our **agency nearest you,** also receipt for subscription money. If requested, he will also deliver the first copy to commence your subscription.

TERMS TO AGENTS.— 5 to 40 copies, 5 cents a copy; 50 or more copies, 4 cents, post-paid, to one or more addresses. Foreign orders, 5 or more copies, 5 cents a copy, post-paid. Special discount on subscriptions quoted upon application.

ADVERTISEMENTS GUARANTEED.— The reliability of every advertisement found in **Life and Health** is guaranteed.

YOU WILL NOT BE ASKED TO PAY for this magazine unless you have subscribed for it. Some friend may have subscribed for you. The receipt of a sample copy is merely an invitation to subscribe. So please do not refuse the magazine at your post-office **for financial reasons.**

A. J. S. BOURDEAU, Circulation Manager

BANANA CULTURE AT ORLANDO, FLA.

VOL. XXVIII
No. 10

Life & Health

THE NATIONAL HEALTH MAGAZINE

OCTOBER
1913

AIM: To assist in the physical, mental, and moral uplift of humanity through the individual and the home.

George Henry Heald, M. D., Editor

THIS ISSUE — FRUIT NUMBER

WHO can remember when he did not like fruits? A taste for these delicious products of nature's kitchen seems to have been handed down to us from former generations. Perhaps we should say that it is instinctive; for fruits in so many ways act as natural correctives that the implanted taste for them would seem to be beneficial. Too often, however, we are content to use them as a luxury rather than as a necessary and very important part of the menu. When considered from the viewpoint of energy or tissue production, they are expensive as compared with other classes of food; but from the viewpoint of natural corrective medicinal action, they are priceless.

Dr. A. B. Olsen, superintendent of the Caterham (England) Sanitarium, popular lecturer on health and temperance, and editor of the (London) "Good Health," in the article "The Medicinal Value of Fruits" makes plain some of the ways in which fruits are useful dietetically and medicinally.

Mr. Cornforth, who some months ago furnished a number of articles on the preparation of fruits, gives some additional recipes in this issue.

In the As We See It department there are a number of articles relating to the value of meat in the dietary, which will repay a careful reading.

THE NEXT ISSUE — PULSE, OR LEGUME, NUMBER

It is related of Daniel that when he was offered a portion of the king's meat and of his wine,— supposedly a high honor,— he made the request, "Give us pulse to eat, and water to drink." And the record states that as a result he far outstripped mentally all those who were on a mixed diet. Doubtless the "pulse" of Daniel included more than lentils, but it evidently included some of what we now call pulses, or legumes. It is said that the pyramids were built on pulses.

THE MEDICINAL VALUE OF FRUITS

A. B. Olsen, M. D., D. P. H.

FRUITS may be regarded as nature's medicine. Besides fruit-sugar, which itself is a sun-cooked and predigested food possessing tonic properties, they have salts and acids, which render them efficient curative agents.

The predominant ingredient in most fruits is water, which sometimes reaches ninety per cent; although all fruits contain a trace of protein, and to a large extent must be regarded as starch and sugar foods. Most fruits also contain a trace of fat, but carbohydrates constitute the chief source of nourishment.

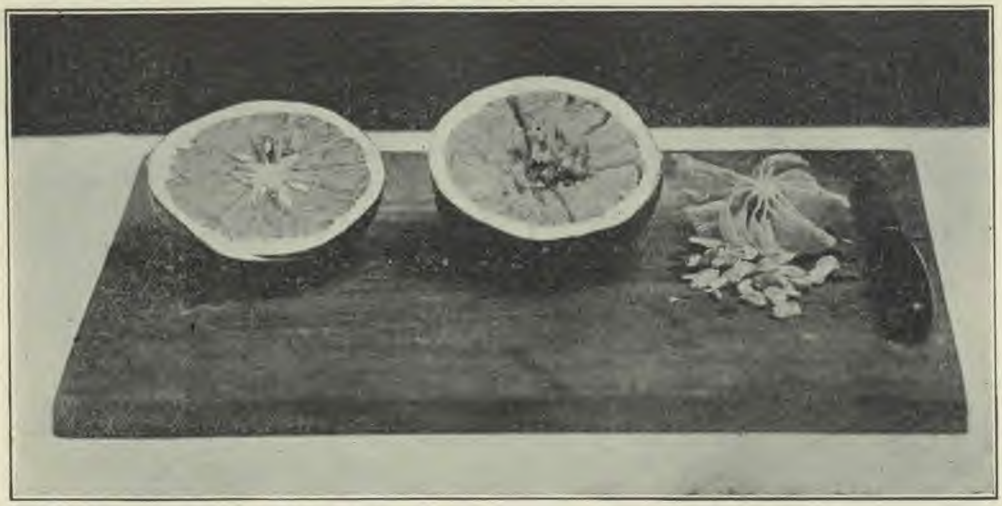
The sugar most abundant in fruits is levulose, or fruit-sugar, which is sweeter than other sugars, and is more easily digested and assimilated than cane-sugar. Fruit-sugar is a predigested food, which is readily assimilated into the blood and speedily becomes effective for nutritive purposes.

Fruits are rich in salts and acids. The salts of potash predominate, but salts of soda, lime, iron, phosphorus, sulphur, magnesium, manganese, etc., as well as sodium chlorid or common salt, are also found. Earthy salts are scarce; hence fruits can usually be given with impunity to those who suffer from degeneration of the blood-vessels. The pleasant, cooling, refreshing properties of fruits are largely due to the acids. Citric acid, one of the most common as well as one of the most wholesome, is abundant in lemons, limes, citrons, oranges, and grapefruit. Tartaric acid (in grapes) also produces cooling and refreshing effects.

Most fruits, when properly ripened and eaten under favorable conditions, including proper mastication, give little digestive trouble. Fruit-juices are most easily digested and assimilated, since their chief contents besides water are fruit-sugar, salts, and acids. Many persons invite digestive trouble by mixing fruit, particularly acid fruits, with milk foods, or by mixing fruits and vegetables. Fruit, either fresh or stewed, always goes well with nuts, breadstuffs, and cereal preparations. It does not assist digestion to eat too large a variety of fruits or other foods at the same meal.

Most difficulties with the digestibility of fruit are due to eating it when unripe or overripe. It is poor economy to buy fruit which is "gone" or is "going." Better pay a little more and get perfectly fresh, sound fruit, and avoid danger of colic or diarrhea.

Fruit should be taken at meal-time



with other food. Eating between meals or at irregular times, is apt to upset the digestive organs.

There is scarcely a drink more refreshing than freshly made lemonade. The larder should always contain lemons. Lemonade, taken freely, is excellent for those who are developing a cold in the head.

Orangeade and the juice of fresh grapes, cherries, blackberries, gooseberries, green gages, pineapples, and apples, make delicious drinks, which can be taken with impunity. Cold fruit drinks are most refreshing and cooling to fever patients. Such drinks are always acceptable, and they help lower the temperature and alleviate symptoms.

We have little confidence in most of the so-called temperance drinks that flood the market. True, many of them contain but a small amount of alcohol, but they make poor substitutes for the home-made fruit drinks.

Non-alcoholic grape wines make a splendid tonic for persons suffering from anemia, nervous debility, neurasthenia, and other disorders.

Nature's aperient consists of laxative fruit taken freely with the meals. The more effective laxative fruits are figs, prunes, grapes, raisins, currants, and dates. The ripe olive is also a very efficient laxative. The beneficial influence of fruits in sluggish or torpid liver seems to be due to the presence of fruit acids and fruit salts. Fruit-sugar, too, is much more easily borne by the liver than ordinary cane-sugar. One may cure biliousness by dropping all food for a few hours or a day or two, and taking freely of fruit drinks, and then adopt a purely fruit diet for several days.

Many dyspeptics could be cured by means of a fruit diet for a week or ten days. We have often seen the experiment tried, rarely without benefit. Many fruits, when properly selected and prepared, are useful in gastric catarrh. A meal consisting of plain boiled rice, the white of an egg or a small junket, and from one to three baked apples, makes almost an ideal tray for an invalid or a convalescent. Another excellent preparation for gastric catarrh is mashed banana to which a small portion of cream is added, say two parts of banana to one of cream, and then beaten well with an egg beater.

Many fruits have a diuretic influence, and assist in the elimination of waste products. The orange, lemon, lime, and citron are perhaps the most efficient. The fruit acids are in the body changed into alkaline carbonates, and these serve to diminish the acidity of the blood. Patients suffering from rheumatism almost invariably benefit by the free use of

fruits, particularly by the citrous fruits.

In autointoxication there is a general feeling of depression, and various irritations, sometimes leading to actual ache or pain, a headache, a backache, or an ache in some other part of the body, with a distinct lack of fitness. The victim may feel drowsy, and yet not sleep well.

When a person is thus suffering, the best diet is a light fruit ration for a week or two, with plenty of water drinking. This will quickly enable the system to throw off the accumulated poisons. The salts and acids have a cleansing effect upon the blood, and the result is a marked improvement in both health and spirits.

One of the best means of acquiring and keeping a clear, supple, healthy, active skin is by the free use of fruit. Oranges are almost always recommended by cosmetic authorities. Persons who follow a fruitarian diet and avoid flesh rarely develop the muddy, sallow complexion which is so common among meat eaters; and those who use fruit largely are rarely subject to eruptions.

Anemia has been successfully treated by a fruit diet. Dr. Ashford, of Porto Rico, relates the case of a child under his care whose percentage of hemoglobin had fallen to less than a quarter of the normal. In three months on a diet consisting of bananas, this child recovered health, and the hemoglobin rose to the normal. Dr. Ashford was acquainted with numerous similar cases, and was compelled to conclude that animal flesh is not necessary for the provision of pure blood and sound, physical health.

Drinking two to four glasses of lemon water daily is an excellent means of reducing weight, provided one also cuts down his rations and engages in a reasonable amount of physical exertion.

Children whose tastes have not been misguided and perverted enjoy fruit. It is the orchard rather than the butcher's shop that the small boy is likely to visit. He passes the meat shop without temptation, but when he sees a fine display of beautiful, luscious fruits, his mouth begins to water. There is no better food for children. All the medicine that they require is found abundantly in fruit.

Dr. Burney Yeo recommends the grape-cure for certain forms of gastric catarrh, as well as for constipation combined with congestion of the liver. Three to six pounds may be taken daily. The grape-cure is helpful in the case of hemorrhoids and certain heart diseases. In congestion of the abdominal organs, a modified grape-cure often brings relief.

I affirm that the constant use of the fruitarian diet is one of the best preventives that we possess against the invasion of disease. The fruitarian diet means a pure, clean diet, one that is free from hurtful ingredients.

CHRONIC CONSTIPATION

D. H. Kress, M. D.

CHRONIC constipation exists to an alarming extent among all highly civilized peoples. It is, in fact, the product of high civilization. It does not prevail among animals or among savages, whose habits are natural.

We have not appreciated in the past the relation constipation sustains to many of the diseases of a chronic or constitutional nature. Diseases of degeneracy which have been ascribed to various causes, we now know are due chiefly to the toxins absorbed from the colon as a result of constipation.

Recently a patient came to me who for several months had been unable to work. He complained of insomnia and of spells which threatened his life. In making a physical examination, I noticed that his tongue was slimy and thickly coated. His breath was bad. Considerable indican was present in the urine, and also traces of albumen. The arteries were hard. The blood pressure reached two hundred and forty-five mm. of mercury. I at once appreciated, as did his friends, the gravity of the case. By inquiring into the history, I expected I should be able to discover a cause for the existing condition. There was no history of any specific disease. I also found that the patient had been temperate in his habits. He had never used either alcohol or tobacco, and used coffee and tea very moderately. He *did* give a history of constipation of many years' standing.

Since I was compelled to exclude practically everything else as a causative factor, I naturally was forced to recognize constipation as the real factor in the causation of his physical condition.

To test the matter, I placed the patient on a low protein diet, excluding meats of all kinds, and also tea, coffee, pepper, mustard, and other products which tend to constipate the bowels. I further regulated the bowels by means which I shall later describe, so as to assure two thorough bowel evacuations daily,— one immediately after breakfast, and the other after the next hearty meal, which was taken at six o'clock in the evening. My reason for doing this I shall also state later.

The improvement in two months' time without any other treatment whatever, was surprising. His tongue was clean, his breath good. Instead of his skin being muddy, and the whites of his eyes dingy, both were clear. In fact, he gave the general appearance of enjoying good health. He declares he never has felt better. The blood pressure has been reduced from 245 mm. of mercury to 195. All traces of albumen have disappeared, and he is able to go about his usual vocation.

From this and similar cases which have come under my observation during the past few years, I have been led to recognize constipation as the chief causative factor in this condition, when a specific origin is excluded, and when no history of the free use of tobacco or other toxic substances exists. In fact, I have concluded that it is not the excessive use of meats, tea, coffee, tobacco, etc., that are wholly responsible for arteriosclerosis, but toxins of a more injurious and subtle nature developed in the alimentary canal, and especially in the colon.

These poisons are likely to be formed as a result of the prolonged retention of waste substances which readily undergo decay. Not only do meats, tea, coffee, pepper, and mustard tend to bring about these degenerative changes by the toxins they contain, but they favor constipation and the formation of poisons even more injurious. In chronic constipation we have probably the chief factor of degenerate arteries, heart, liver, kidneys, thyroid glands, and other glands of the body. There is strong reason to believe that it is largely responsible for the rapid increase in the mortality rate from heart failure, apoplexy, diabetes, and Bright's

disease. In diabetes and Bright's disease there practically always exists a history of constipation.

There are many annoying disorders of every-day life, among which may be mentioned dyspepsia, headaches, drowsiness, melancholia, insanity, which may be due to chronic constipation. Appendicitis seldom occurs in a person whose bowels are regular. From the prolonged retention of the easily putrefying wastes, a diseased condition of the mucous membrane of the cecum results. This later extends into the mouth of the appendix, and an inflammatory condition is established. There is a probability that cancer is in some cases traceable to the toxins absorbed from a stagnant colon.

It would be difficult to conceive of anything more defiling to the body than the decay within it of fish, oysters, rabbits, cheese, and other protein foods, and the absorption of the resulting impurities and poisons. Cells bathed in such a liquid become diseased.

A blocked-up city sewer is recognized as a source of danger and is not tolerated, but here we have a condition that is very much more offensive and dangerous, and yet very little serious thought is given to it.

Over thirty per cent of the present mortality is ascribed to this cause by Prof. Eli Metchnikoff, who has made a careful study of the influence of these poisons on the human body, and who believes this to be the chief cause of early degeneracy and premature old age. His contention is that by preventing the formation of these alimentary toxins, man might be at his best at eighty years, be still active at one hundred and twenty, and live to the age of one hundred and forty.

He has been driven to some conclusions which may seem almost absurd, and yet, reasoning from his viewpoint, they are logical and conclusive.

He maintains that the appendix, which has of late years given so much annoyance, is not merely a useless, but actually a dangerous, organ.

"It would be difficult," he says, "to find anywhere else in the human body so flagrant a cause of natural disharmony." He affirms: "That it performs no function useful to man is made clear by the existence of undisturbed health in persons from whom it has been removed."

He goes still further and says: "It is no longer rash to say that not only the rudimentary appendage and cecum, but the whole of the large intestine are superfluous, and that their removal would be attended with happy results."

"The large intestine," he concludes, "must be regarded as one of the organs possessed by man and yet harmful to his health and his life."

The reason why he regards this organ as harmful, he states as follows: "The large intestine is the reservoir of the waste of the digestive processes, and this stagnates enough to putrefy. The products of putrefaction are harmful."

It is not the colon, but the prolonged retention of the waste food products within it, that is dangerous to life and health. This being so, *constipation* is what we should seek to rid the body of, not the colon. Dietetic reforms and not surgical interference is the remedy.

Chronic constipation is more common than is supposed. In extreme cases there exists a movement once in two or three days, and in exceptional cases evacuation of the bowels occurs only once a week.

A natural evacuation of the bowels once in twenty-four hours is considered a normal condition. This is a misconception. One evacuation a day is not sufficient. A bowel movement should be secured at least twice a day, or, better still, after each regular meal, in order to safeguard against putrefaction, and the absorption of toxins from the colon.

It is surprising how easily this habit may be established and maintained. When once established, the desire naturally recurs after each meal, for the ingestion of food into the stomach sets up a peristaltic wave which travels along the entire alimentary tract. In fact, it is less difficult to evacuate the bowels

twice daily than once daily. Where but one movement occurs daily, the moisture is absorbed from the feces, and a plug forms in the rectum. The contact of this hard mass benumbs and destroys the sensitiveness of the parts. The rectum having been restored to a normal condition the desire to defecate occurs as soon as feces reach it. The stools are never hard, the consistency being practically the same all the time.

Recent researches have shown that the alimentary contents pass along the tract much more rapidly than was formerly supposed. In four and one-half hours after food leaves the stomach, it makes its appearance in the cecum, traveling through the twenty-two or more feet of small intestines during this short time. Its movement through the colon is much slower to facilitate absorption, but it reaches the pelvic colon and rectum in from ten to fourteen hours. A portion of the meal taken at seven o'clock in the morning finds its way to the rectum and is ready for expulsion after the evening meal, while the remains of the evening meal should be evacuated after the morning meal. A failure to do this means an extra retention of these wastes of anywhere from ten to twelve hours, or even longer. Putrefaction is thus encouraged, absorption takes place, and hardened feces and autointoxication result.

Chest development, efficiency, long life (turn it over)

The best time to evacuate the bowels is shortly after regular meals. The taking of foods on an empty stomach is a most powerful stimulus to the motor activity of the colon.

During meal-time the contents of the colon make more progress than during four hours preceding the meal. It is quite important that the stomach be empty before introducing food. Two meals a day are in most cases better than three on this account. Frequent meals and eating between meals do not impart this stimulus, and hence tend to cause constipation. Regularity of meals, at all events, is a necessity in overcoming this condition. The same regularity should be established in securing bowel evacuations.

The establishment of a right habit is as effective in getting rid of constipation as the establishment of irregularity is in its causation. It is necessary, therefore, to have a stated time to go to stool.

If success does not attend the effort the first week or even the first two weeks, the thing to do is to keep up the practise. A little assistance may be given by the injection of a cupful of cold water, or the introduction of a suppository; a soft prune or a date, turned inside out, will answer for this purpose. While I do not as a rule recommend laxatives, in order to establish regularity it may be well to take a mild laxative each night before retiring, for a week or ten days.

Agar-agar is of value. About two tablespoonfuls soaked in a little hot water and eaten with apple sauce or some other stewed or canned fruit, should be taken with the morning and evening meal. This should be kept up for at least a month. Agar-agar may be secured in any drug store. If the druggist does not have it, he can procure it, as it is regularly used in all bacteriological laboratories.

Liquid paraffin is also of value in very obstinate cases. The dose is one dessertspoonful twice daily at first. These preparations can be gradually given up. The purpose of their use is to establish regularity and the formation of a correct habit.

The food is of the greatest importance. Foods which tend to constipate should

be given up. Meats should be used moderately, if at all; it is better to give them up altogether. Tea, coffee, cocoa, chocolate, pepper, mustard, and other substances which cause constipation, should be abandoned. The tannin extracted in steeping tea is especially bad.

Laxative foods are of value. Among these may be mentioned bran crackers, whole-wheat or Graham breads, shredded-wheat biscuits, whole-wheat biscuits, puffed wheat, etc.

The following vegetables are valuable: parsnips, carrots, turnips, spinach, raw vegetable oysters, cabbage, etc.

The sweet fruits are all laxative. Prunes, figs, dates, etc., are of value.[1]

[1] There are persons who, on taking fruits and vegetables in any but minute quantities, seem to become veritable balloons of gas, and the constipation is increased.— ED.

In the use of the foregoing foods, care must be exercised in their combination.

In cases where irritability of the stomach exists, with an excess of gastric juice, the above foods should be used sparingly; and where the condition borders on ulceration, they should be entirely avoided until improvement occurs.

The agar-agar and paraffin are especially helpful in these cases. Agar-agar supplies the bulk, but is non-irritating, while the paraffin is a splendid lubricant.

Where digestion is slow and the gastric juice diminished, the foods referred to are indicated.

There are local and general treatments and exercises which are great aids in overcoming constipation, but diet alone will accomplish marvelous results if persevered in.

MANGOS, MEXICO

PREPARING FOR MARKET

FRUITS

G. H. Heald, M. D.

Nature's Pure Foods

THE American people are engaged in a warfare against substitution, a fight against the rapacity of producers, for pure foods. When they purchase a can of tomatoes, or a pint of milk, or a sack of flour, they are more or less at the mercy of the producer. The flour may be bleached, the tomatoes may be culls preserved with benzoate, the milk may be diluted or from a diseased cow or swarming with bacteria on account of dirty handling. As regards much of their food, notwithstanding the attempted enforcement of the pure food law, they take their chances; and to eat these foods, one must have either an atrophied imagination or else a hypertrophied courage.

But when a man purchases an apple or an orange or a bunch of table grapes, it is labeled by nature, and he knows, if he has eyes to see, whether he is getting a luscious, mature fruit or one that is immature, overripe, wilted, or worm-eaten. Fruit is sent out by nature in

BANANA TASTILY SERVED

PUFFS AND APPLES

sealed packages, and every one can see whether the seal has been broken by worms or germs or by rough handling. Fresh fruits, then, are our typical "pure foods." It is true that there is a different story to tell in regard to jellies, jams, canned fruits, and the like; for here one cannot always tell just what he is getting.

But What Is a Fruit, Anyhow?

A definition is difficult because the word stands for so many different things. In the Bible, fruit may mean any natural food, and the term is broader still, including some things that are not food. In the botanical sense, fruit is the development of the flower after the fertilization of the ovule, and includes the nuts, acorns, tomatoes, melons, squashes, peas, beans, eggplants, and cucumbers, as well as what we ordinarily call fruits.

In the commercial sense, fruit may be defined as "the seed envelopes of plants which are edible, either raw or cooked, and are usually juicy, sweet, and of refreshing flavor."

The common fruits may be classified as follows: —

FRUITS
- Tree or orchard fruits
  - Pome: apple, pear
  - Drupe: peach, apricot, plum, cherry
  - Citrus: orange, lemon, grapefruit
- Vine fruits
  - Grape
- Small fruits
  - Berries: blackberry, raspberry, currant, etc.

This, however, is merely a convenient division. It is neither strictly botanical nor in any wise complete, for it leaves out the pineapple, banana, fig, date, and many tropical fruits.

Cultivation of Fruit

If we are asked to tell when man began to use fruits, we must admit that, so far as we know, fruits have been eaten as long as there has been a human race. The Scripture account places the use of fruit very early in the history of the race. It would seem that among the most primitive tribes at the present time, fruit is eaten if it is accessible, and yet there have been tribes to whom the taste of fruit of any kind was almost unknown. As the birds and animals eat fruits in their natural condition, so did savage man. At the time this continent was discovered, the natives made use of fruits; but though they cultivated corn and some other vegetables, they ate the fruits entirely in the uncultivated state; and probably it was a long time before primitive man made any definite attempt to cultivate and improve the native fruits. And yet it has been centuries since that beginning was made, and the process of selection and improvement has been progressing for so long a time that the cultivated fruits bear scarcely any resemblance, in many instances, to the native fruits from which they have sprung.

But even in our advanced civilization

AN ORANGE GROVE, BANANA PLANT TO LEFT OF HOUSE

we make some use of native fruits, notably the huckleberry and blueberry and the elderberry, which have never been cultivated to any extent, and which are prized by many for the making of pies; also the blackberry, strawberry, and the raspberry, which are used in both the wild and the cultivated state. But in general, the cultivated varieties are so much better that very little use is made of the wild. By cultivation, there is not only a greater yield, but the fruits are generally larger, more tender, less woody, and of a much better flavor.

History

It would seem from Xenophon that the Greeks in the fifth century before Christ had orchard fruits; at least they had apples, pears, and pomegranates good enough to eat. Plums, peaches, and cherries, we are told, were not introduced until later, and oranges were entirely unknown. Figs were much used, as were also dates. The grape was well known to the Greeks, but rather as a means of making wine than as a fruit to be eaten. In Italy in its palmiest days, fruits had become much more common. "Besides the olive and the grape, the apple, pear, plum, and quince were either native to Italy or introduced in prehistoric times. Careful attention had long been given to their cultivation; and in the time of Cicero (B. C. 106-43), Italy was covered with orchards, and all these fruits were abundant and cheap in their season, and used by all sorts and conditions of men. Considerable attention was also given to the importation of better varieties of fruits from other lands, and fruits were ripened out of season by hothouse culture. With the extension of the Roman world by conquest, new varieties of fruit were added, including the peach, the apricot, the cherry, and the lemon. Curiously, the Romans knew nothing of the orange, or at least it was not grown by them. With the Roman civilization, the culture of fruits spread over Europe, and from there to America.

Commercial Cultivation

In America, until very recently, fruit culture has been on a small scale, like poultry raising, every farm having a few trees around the house for home use, and a little extra for sale in the local

STRAWBERRY WHIP WITH LADY'S-FINGERS

market. Perhaps the most remarkable change that has taken place in American agriculture is the turning of whole farms, whole counties, almost entire States, into fruit orchards, a change which has taken place largely in the last generation.

Although the science, or rather art, of fruit culture, the pruning (the English refer to American pruning as "lopping off"), the hothouse cultivation, the intensive work for fine fruits, may not have advanced here so far as in Europe, there is no other country in the world where fruit culture is conducted on so gigantic a scale as in America. With us fruit growing has assumed vast commercial proportions. Formerly, in the days of the small farmhouse orchard and before the days of rapid transportation, fruits were eaten in their season, and for a long period of each year fruit was either not eaten or else recourse was had to canned or dried fruits. Now, in the cities at least, fruits are always in market,— fruits, not from the surrounding farms, but from distant and perhaps foreign regions,— bananas, peaches, oranges, and grapes. The fruit stores always have something fresh from somewhere. This has been made possible by the increased transportation facilities, cold storage, refrigerator-cars, etc.; and because of these increased facilities, the people have been educated to demand fresh fruits throughout the year. This increased demand has stimulated the growing of fruits in a commercial way as a regular business, and not as a side line. This specialization has been for the betterment of the fruits. The farmer who was not a specialist in fruits could not take the time to make a scientific study sufficient to develop the very best in the way of fruits, but specialization and competition are doing much to raise the standards of our fruits. And yet, after all, we are not so far in advance of the fruit cultivation of the Romans in their palmiest days.

The facility of transportation has greatly lengthened the seasons of the fruits. When a city had to depend on the territory within fifty miles for its supply of strawberries, the season was necessarily short; but now a city like New York can have strawberries from Georgia and Florida, and as the season advances, the more northern berries come into market, giving a very much lengthened season. And by obtaining fruits from South America, where they have summer while we have winter, the fruit season is made practically continuous.

Why Do We Use Fruits?

Primarily we use fruits because of their agreeable flavor and their beautiful appearance. We must admit that appearance, including the color, has an effect in determining the usage. One naturally will choose, if he has a free choice, the most beautiful fruits, other things be-

ing equal. And this choice is not altogether foolish, for the sense of sight as well as the sense of smell adds to the pleasures of the sense of taste. Given two dishes having exactly the same flavor, that one which is the most tastily served will be eaten with the greater pleasure, and from what we have learned from Pawlow's investigations on dogs, will be better digested.

Among our savage forebears whose principal impelling motive seems to have been keen hunger, the esthetic doubtless figured comparatively little; but with the development of civilization and the assurance of a more certain and more liberal supply of food, perhaps more than the body really requires, the stomach is not now always on the *qui vive* for food, and it is ready to go on a strike if things are passed down not just to its liking; hence it is wisdom to have foods attractive, for the more attractive they are, other things being equal, the more digestible they are, and therefore the more healthful. For this reason, if for no other, fruits are a valuable addition to the dietary.

Fruits also relieve the monotony, offering a pleasing variety to a heavy diet, whether that diet be meats or cereals and legumes, or a mixture. In fact, fruits may be said to be our natural condiment.

Often it is remarked that fruits are refrigerant, or cooling. This cooling effect is probably accomplished in two ways. When one eats largely of fruits, the appetite is satisfied by the bulk, without consuming a large quantity of fuel; that is, one may enjoy a full meal of fruits without having to burn it up afterward — a decided advantage in hot weather. In another sense fruits may be cooling through the effect of their acids and acid salts on the blood.

But fruits are more than condiment, or flavor, or variety, or refrigerant; they are true foods in the sense that they contain proteins, fats, carbohydrates, and salts needed in the body, principally carbohydrates; but all in small quantity, as compared with cereal foods, for the reason that fruits are more than three-fourths water, ranging from three fourths in the banana to nine tenths in the watermelon.

❦ ❦ ❦

Composition of Fruits

In addition to the skin and seed which may be counted as refuse, fruit consists of an edible portion, of which about eighty per cent is water. The twenty-per-cent nutriment consists of a minute proportion of protein, perhaps a trace of

fat, some ash, a trace of flavor, and some fruit acid, but principally carbohydrates, consisting of starches (in green fruits and in bananas, even when ripe), pectin bodies (which make the jellies), and sugars. These are the digestible carbohydrates. In addition there is the cellulose or indigestible fiber, which is also a carbohydrate and closely related to starch.

In the body the carbohydrates, if utilized, are transformed completely into sugar. In fruits there are three principal forms of sugar,— the simple sugars, dextrose (or grape-sugar) and levulose (or fruit-sugar), which occur in varying proportions, and a more complex sugar, saccharose (or cane-sugar), which is usually less in quantity than the others. The dextrose and levulose occur in varying proportion, the dextrose usually in excess. In some fruits cane-sugar is present in considerable quantity. Cane-sugar, like malt-sugar, is a double-molecule sugar, which in the intestines must be broken up into the simple sugars, one molecule of cane-sugar splitting up into one molecule each of dextrose and levulose. Cane-sugar is, in fact, practically a combination of dextrose and levulose, needing only the addition of a molecule of water under the influence of a digestive ferment to break up into the two simple sugars. In the same way, malt sugar in the organism breaks up into two molecules of dextrose, or grape-sugar.

Dilute Foods

Considering that honey is only eighteen per cent water and nearly eighty-two per cent sugar, it will be apparent that fruits, such as the banana with seventy-five per cent water, more than four times as much as honey, and other fruits up to ninety-two per cent water, more than five times as much as honey, are very dilute foods. Comparing with the water content of the fruits, that of some other foods, such as wheat with twelve per cent water, and white bread with thirty-five per cent water, we shall understand that the fresh fruits are largely bulked up with water. On the other hand, the dry fruits range in water from fourteen per cent in raisins to twenty-nine per cent in apricots, so that dried fruits are actually richer in nutrients than bread, and have a water content not far from that of honey. Perhaps it will be a surprise to most persons to learn that white bread contains about twice as much water per pound as does honey.

The dilution of nutrients in the fruits is not a disadvantage, but a decided advantage. If one doubts it, let him attempt to make a meal of honey, which is almost pure nutrition, already digested, and ready for immediate absorption. It does not take long to become cloyed on honey or dates. The body rebels against concentrated foods, the natural sugars, no less than cane-sugar.

The Flavors

The flavor of fruits is due partly to the pleasing combination of sugar and acid, but also to certain ethereal bodies present in too small amount to be estimated chemically. It is these ethereal bodies that give the particular flavor by which we distinguish the taste of say one apple from another. The acids present in the fruits are organic acids, the principal ones being malic acid, as in the apple, citric acid, as in the lemon and orange, and tartaric acid, as in the grape. These acids may occur as mixtures. In the rhubarb, a stalk used instead of fruit for making pie in spring before the fruits ripen, the acid is oxalic acid, supposed by some to be harmful.

The Ripening of Fruit

During the ripening process, fruits change greatly in composition, and even after fruit is packed and in storage, these chemical changes continue. For a time, such changes make the fruit more attractive and more digestible; but finally a point is reached in the process when the fruit begins to deteriorate, and is then known as overripe.

The ripening process is doubtless influenced to a certain extent by the sun, but not altogether, for fruits will ripen in the shade. The chemical changes we call ripening are caused principally by certain ferments which are present in the fruits. In general, it may be said that in ripening the proportion of starch and acid and fiber decreases, and the proportion of sugar increases; in fact, the principal change is the transformation of starch or other carbohydrate bodies into sugar. In some fruits, as the peach, there is no appreciable starch at any time, and in the banana there is some starch even in the fairly ripe state. In the ripening process, the pectin bodies, upon which the property of forming jelly depends are turned into sugar, and for this reason fully ripened fruits do not make good jelly, unless they have some jelly-making fruit mixed with them. In the pear and some other fruits there is no appreciable amount of pectin, and these fruits "do not jell well," as the housewife would say.

Bananas, as usually sold, are underripe, rich in starch rather than sugar, and at this stage are best used cooked. In fact, most trouble from eating raw bananas is due to the raw starch which is present in the bananas as sold, which to some persons is about as digestible as so much raw potato. If those who have trouble with bananas will either cook them or keep them until they are fully ripe and soft, with the skin partly brown, they will probably have less trouble digesting this fruit.

* * *

Are Green Fruits Indigestible?

There is a tradition to the effect that green fruits are dangerous to eat; but from the number of small boys who eat green apples, cherries, or other fruit with apparent impunity, we may wonder whether green fruit is actually so bad on the normal stomach, or whether those cases in which the use of green fruit is followed by disaster are due to idiosyncrasy, or whether digestive disturbance is caused only in cases in which there has been previous disorder, the fruit being the proverbial "last straw." There is nothing in the green fruit that is not in the ripe fruit, only a difference in the proportions. The ripe fruit is mellower, and more readily broken up in the stomach if swallowed in lumps,—as it is likely to be swallowed by a boy,—and contains a larger proportion of carbohydrate in a digestible or digested state. Doubtless the raw starch is indigestible, but not more so than the woody fiber. Possibly the green-apple-cholera tradition has about as much foundation as the tomato-cancer superstition which had such vogue a generation ago. We feel sure that there are hundreds of small boys who will arise and call this magazine blessed if it will only help to take the ban off green fruits. Our advice to the boys is this: You will eat green fruit

whatever we may say about it. But if you will chew it well, and spit out the pulp, such fruit will certainly be less likely to do you harm than if you swallow it in large lumps.

Underripe and Overripe Fruits

Whether green apples cause "cholera" or not, we may leave for the sages to decide, but for most persons there can be little doubt that fruit is more wholesome when it is fully mature, and that a large share of the difficulty with, say bananas, is because people are accustomed to eat them in an immature state. And the use of partly decayed fruits is not without its dangers, even though the decayed part is cut out. This decay is partly caused by germs of the putrefactive type, which in certain conditions of the intestinal passage seem capable of doing great mischief. Undoubtedly the normal intestinal mucous membrane is capable of dealing with large numbers of foreign germs, and the fortunate possessors of a normal intestinal tract are capable of eating about what they like with impunity; but many are not so fortunately situated, and are very sensitive to any material addition to the "wild" germs introduced into the food. Such persons should be careful, particularly as to the fruit they eat, that it is absolutely sound and that the skin is clean.

Raw Fruits

Preferably, the skins of fruits should be removed, for they nearly always harbor putrefactive germs. The Germans will scarcely eat raw fruits, considering them unwholesome. Whether this is merely a prejudice or whether it is the result of past experience it would be difficult to tell; perhaps both factors may play a part. It is barely possible that part of our national dyspepsia is due to our carelessness in the use of contaminated raw foods. The strawberry especially offers a splendid chance for contamination. As it grows on the ground, there is opportunity for unscrupulous growers to soil the berries by means of fertilizer from some loathsome source, and every puff of wind must carry germ-laden dust from the soil to the rough, moist surface of the berry, which affords an excellent lodgment for germs.

The strawberry will probably always be popular, notwithstanding all that can be said in the way of possible typhoid contamination, dysentery, and the like; and perhaps here in America, at least, the raw berry will always be preferred. Most Americans are apt to say that if we cannot have strawberries and cream without courting death, life is not worth living, and we might as well take the risk. In fact, there is probably more potential vitality in an optimism which refuses to believe that germs can injure the body than in a bacteriological enlightenment that makes us afraid to eat anything and everything, lest we swallow a few germs. Such a fear of germs is about the worst germ with which one can be infected. But it would seem that there might be a middle ground, where, without a constant fear that we may be swallowing an occasional disease germ, people might habituate themselves to eat food in as near an uncontaminated state as possible. Our sense of cleanliness and decency should demand that; for the presence of germs is, after all, the presence of what, in common parlance, we call filth; and as we become more civilized, we become more loath to eat with our food the accompanying filth, which, with our less discriminating savage forefathers, went for condiment. So it is possible that a more discriminating people will be constrained to say, "No uncooked strawberries for us."

Digestibility of Fruits

By many persons fruits are regarded not as food, but rather as a luxury, a kind of condiment, something merely to please the palate; but the work of the laboratory has shown that this view is entirely erroneous. Professor Jaffa, of the University of California (Berkeley), a food expert working in connection with

the pure food laboratory of the State board of health and with the United States Government Experiment Station, has made a series of nutrition and digestion observations on a number of fruitarians, which have shown that fruits are well utilized in the organism, and that those who live entirely on a fruit and nut dietary are well nourished. The details of this work are given in the Bulletins 107 and 132 of the Experiment Stations, United States Department of Agriculture, and are referred to in Farmers' Bulletin No. 293, United States Department of Agriculture.

In ninety-three experiments with young men, as reported by Jaffa, the percentages of the various nutrition elements assimilated were, protein 93%, fat 95%, carbohydrates 98%. Thus the fruits are as well handled as the ordinary mixed diet, notwithstanding their reputation, even among doctors, for being "indigestible." As before intimated, the bad name fruit has received in this matter is probably due to the presence of adventitious germs; and much of this trouble may be avoided by using fruit fully ripe and not overripe, free from all decayed spots, thoroughly clean, and carefully peeled, or, in some cases, by the avoidance of uncooked fruits.

❦ ❦ ❦

Fruits Laxative

Fruits have long had a reputation for being laxative. This quality of increasing intestinal peristalsis is due partly, perhaps, to the presence of cellulose, partly to the sugar, which is a laxative, and partly in some cases, perhaps, to the fermentation and formation of organic acids which act as a stimulant or mild irritant to the intestinal mucous membrane. Possibly it is because of its tendency to ferment that sugar itself is a laxative. It may be to this laxative effect, partly, that fruit owes its reputation for being cooling; for in those cases where the tendency is to eat heavily in summer, and thus give the body a large amount of fuel to burn up, the laxative effect of fruit may hurry this mass through the intestines before it has a chance to be completely absorbed, and thus rid the body of a lot of unneeded fuel. In that it furnishes a large bulk without a correspondingly large fuel value, it would also tend to satisfy the appetite without the necessity of taking on a heavy cargo of fuel. In any case, we know from experience that fruits are laxative, and that they are refrigerant, and consequently that they are excellent for summer, except in those cases where there is a tendency to diarrhea. And if fruit were eaten more in the spring, as the weather moderates, in place of the heavier food of winter, there would be less of that complaint, or strike, of the internal organs known as spring fever.

❦ ❦ ❦

Idiosyncrasy

There are persons who find that they cannot eat certain fruits. No matter how fond they are of them, they learn that whenever they eat them they have trouble,— flatulence, the abdomen swelling like a balloon and causing great distress and embarrassment, headache, hives, sour stomach, diarrhea; one or more of these symptoms warning them that they must leave that particular fruit alone. Some must leave all acid fruits alone. Others are troubled with the solid fruits, like the apple and the banana. Some cannot eat strawberries without the most intense suffering.

The writer believes that these idiosyncrasies are due to the bacterial condition of the intestines. Germs are rather particular as to their place of growth. This may be an astounding statement, but it is so. One variety of germ thrives best in a medium quite neutral or even alkaline; another will do best in a medium having quite a degree of acidity. Where there is a mixture of germs, as there always is in the intestine, those germs will grow most rapidly and crowd the others out that find conditions of temperature, acidity, and food most favorable to their growth. For this reason, a

fruit diet would be followed by the predominance of certain types of bacteria, a meat diet by another type, a milk diet by another, and so on for the different mixtures. Then the nature of the secretions habitually secreted by the individual would have much to do with the habitual bacterial growth. Now it is more than possible that certain persons have a bacterial growth that, for instance, when fresh strawberries are eaten, is capable of increasing rapidly, and forming certain toxic products that manifest themselves by the skin trouble we call hives. I say this is more than possible; but it has not been proved, and the proof would doubtless be very difficult.

Then let us regard the intestinal tract as a weed-grown field. Each of us has his own particular bacterial growth, no two of us alike. The character of this bacterial growth is conditioned by the quality and reaction of the digestive juices, as well as by the food habitually eaten. On certain classes of foods these bacteria are well-behaved, on other foods they "go on a spree," as it were, and have what in common parlance is called a "high time." Unquestionably, the use of foods containing a large quantity of bacteria, as do the skins of raw fruits, adds to the danger of trouble from this source. So one who has trouble with raw strawberries may find that he can eat them cooked without trouble. One who suffers from flatulence after eating apples may possibly avoid unpleasant consequences by washing and peeling his apples, and chewing carefully. One is seldom troubled in this way as a result of eating cooked apples, even though the apples contain added sugar.

It is possible that mouth contamination in some cases may play a part; that is, the putrefactive germs from teeth not too well kept or from diseased gums may be carried down with the fruit and set up a putrefactive process in the intestines. For this reason, one who has stomach or intestinal trouble should give particular attention to the teeth. It is possible that by taking precautions regarding the teeth and regarding the fruit, cleaning, peeling, and avoiding everything but mature, sound fruits, some who usually have difficulty with fruit may avoid it.

There is still another consideration. A person may be able to eat the troublesome variety of fruit once or twice with impunity, if then he will do without it for a few days. In some cases the germs do not go on a rampage until after they have had two or three meals of the particular food which seems to turn them into savages. In fact, one very successful treatment of fermentative dyspepsia is a radical change of diet, using one kind of food, such as fruits, one day; then another kind, such as cereals, another day; then another kind, as milk, the third day; and so on. This change in dietary, using only one kind of food at a time, does not permit any germ to have the field long enough to gain the ascendency. But with a mixed dietary, the germs will every day find enough of the food that they need to keep up their growth and mischief. At any rate, this rapid change from one single-food dietary to another puzzles the germs, if I may be permitted to use the expression, and gives the body a chance to collect itself, so to speak, for effective resistance of the bacterial invasion.

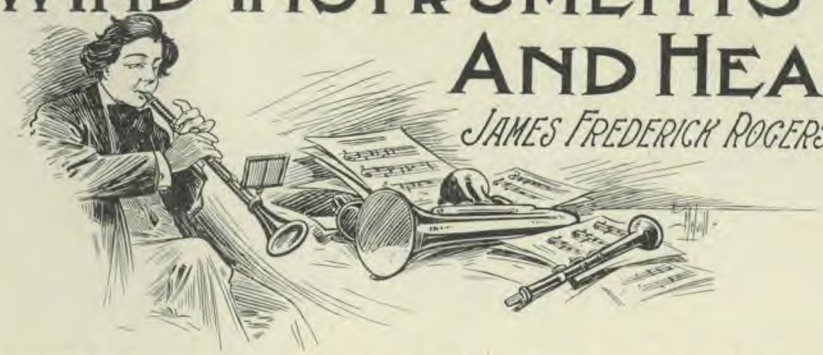
The Use of Fruits

Fruits, in general, are at their best when in season. We enjoy dried figs and raisins, but they do not compare in lusciousness with the fresh fruits. Canned fruits have their place, and if fruit is of good quality and well canned, a dish of table peaches is delicious; but after all, what is equal to the fresh fruit when one can obtain it? The difficulty is that much of the fruit that has to be transported must be picked in an immature condition, and usually the ripening process in the basket is not what it is on the tree. No one who has not had a

(Concluded on page 471)

WIND INSTRUMENTS AND HEALTH

JAMES FREDERICK ROGERS, M.D.



A GOODLY number of men and not a few women have attributed the preservation and prolongation of their lives to the practise of playing upon the flute, cornet, or other musical instrument requiring the use of the respiratory organs for the production of tone.

Deep-breathing exercises have always been considered of much benefit for the well, and, with due care, for those suffering from diseases of the organs of breathing. There has been some question, however, among medical men, as to the benefit to be derived from blowing upon wind-instruments where the instrument required much forcing of the breath, and, therefore, the production of high pressure within the lungs and bronchial tubes. There is a not-uncommon disease of the lungs, called emphysema, in which these organs become permanently blown up or overdistended from stretching of the air-sacs, and, until recently, one cause of the disease was believed to be the blowing of wind-instruments.

Although, upon first thought, the wind-instrument would seem to be to blame for this condition, the studies of the writer and others have shown that there is no foundation whatever for this belief, and wind musical instruments can be discharged as guiltless in the case. The disease is brought about primarily by bronchitis and other causes which destroy the elasticity of the lung tissues, and the bass drummer or pianist is as apt to be affected as the performer upon the trumpet or trombone.

The reason for the voluntary practise of respiratory exercises of any kind is that we adults have very much more breathing apparatus than we need and make use of, for ordinary purposes. During the days of childhood and youth we bring it all into play frequently, in connection with active bodily exercise; but after we have settled into the routine of office or shop, we make only such respiratory exertion as is necessary to carry out our very limited bodily movements. Parts of the adult lungs are seldom, if ever, fully expanded. The body always economizes its blood supply where this is possible, and these little-active regions of lung are accordingly slighted in their supply of nutriment. These parts become weaker in every way, and consequently less fit to withstand the attacks of bacteria, which are at all times seeking a dwelling-place in some organ.

The upper portions of the lungs are the parts which are brought into action least extensively in ordinary respiration, and it is in these regions that tuberculosis is most apt to begin. In blowing upon wind-instruments, these regions of the lungs are brought into action, and ought to be benefited accordingly by the improved nutrition which always accompanies use.

Wind-instrumentalists are, of course, not rendered immune to disease, even of the respiratory organs, by their exercise. They must take care of themselves in other ways if they would be well; but there is evidence that, with such care, they are comparatively free from disease

of the breathing apparatus. Mr. Innes, the noted bandmaster, says that among the great many musicians he has employed from time to time only one member of his band suffered from tuberculosis, and he played the string bass (not a wind-instrument). Mr. Brooke, of the Chicago Marine Band, wrote me that, after thirty-eight years' active experience with wind-instrument players, he has never known one to die of tuberculosis "except where the cause was directly traceable to the excessive use of cigarettes." Mr. Clair, of Barnum and Bailey's circus, said that in thirteen years he had not known a man in his employ who was troubled with any disease of the lungs. Mr. Krehbiel, the eminent critic, writes that in an experience of some thirty years with such musicians, he can recall only one instance of death from lung disease among performers on wind-instruments.

Not all performers have been free from lung disease by any means, but the playing on the instrument has apparently had nothing to do with bringing on the disease. Quantz, the teacher of the flute to Frederick the Great, nearly two centuries ago wrote of the benefit of flute playing for those disposed to respiratory affections; and Sidney Lanier, probably the most brilliant flutist this country has produced, was enthusiastic over the exercise, not only as a means of keeping the lungs in good condition, but even for consumptives. He considered the exercise of flute playing, not carried to the point of fatigue, to be more beneficial in relieving the feeling of chest oppression and the hacking cough of the consumptive, "than all the drugs that can be administered." He adds that he "knows positively and personally of most signal benefit." Lanier was a consumptive, but his disease is attributed to exposure as a prisoner during the war. At any rate, he was well up to that time. His first hemorrhage came when he was twenty-four years of age, and he lived to be thirty-nine, continuing his flute playing until his last year.

All wind-instruments require deep breathing, but differ much as to the muscular effort required in producing tones. The flute needs very little effort, not so much as for vocal utterance, and for deep breathing it is the ideal instrument. Next in order of effort would come the oboe and bassoon, the soprano saxophone and

clarinet. The small brass instruments, the cornet and trumpet, require most effort in forcing the breath, though not much more than for loud and high-pitched vocal utterance. The larger brass instruments require a medium pressure but large volume of breath to set them vibrating. All instruments require much less exertion after one learns the knack of handling them; the effort is reduced to a minimum and the pleasure of the exercise is raised to a maximum by studying the instrument with a master.

small for the figures to be taken too seriously, but it is of interest that the average longevity for one hundred performers on wind-instruments was 63.5 years, while for as many players of stringed instruments, who certainly play under better hygienic conditions, it was only 62 years.

The deep breathing which accompanies the playing of wind-instruments is doubtless not more beneficial than that of deep respiration done without such means; but the former has the decided advantage of

A study of the statistics of the ages of distinguished performers on wind-instruments shows them to have been comparatively long-lived, and, strange to say, those who played the instruments requiring most effort lived the longest. The average longevity of trumpeters and cornetists is 69.1 years, of clarinetists 65.2, French hornists 64.4, bassoonists 63, oboists 63, and flutists 61.2 years. Doubtless the greater age of those exerting the stronger effort in playing, was due to the fact that they were naturally more robust; for only such could make a name for themselves as performers on an instrument requiring much bodily vigor. The number of persons considered is too

being pleasurable and easily kept up from week to week, while cut-and-dried breathing exercises often become a bore and are either forgotten or carried out occasionally as a disagreeable duty. There is pleasure in the individual playing upon an instrument, and there is an added thrill in playing with others. Indeed, the only danger, though a rare one, lies in the fact that those who are not strong may be carried away by this pleasure and become overfatigued. Another quite unnecessary danger, which might accompany any other exercise, is the bad ventilation and tobacco-laden air of rooms used for rehearsals by bands and orchestras, and the fact that the performers

often become heated from the exercise and the superheated atmosphere, and are apt to take cold upon going into the outer air.

While the breathing required for skilled playing upon wind-instruments is not different from that used in singing, it is not every one who has a good voice, and the lack of voice does not preclude a performer on an instrument from a skilful production of sweet sounds.

Of instruments for women, the flute and soprano saxophone are certainly the most attractive and fitting, and in every way as interesting as stringed instruments, without requiring such constant practise for proficiency. Of the instruments perhaps least to be recommended, either to men or women, for the benefits of deep breathing, are the oboe and the French horn, as in both of these the breath is held long and emitted slowly.

The wind-instruments have been, heretofore, too much slighted in this country, save in our bands; but, thanks to such agencies as the Philharmonic Orchestra and the Berrere Ensemble of New York, and the Longy Club of Boston (the two last-mentioned organizations composed wholly of wind-instruments), they are being given the place in our concert halls which they have long known in Europe, and which their great beauty and the lovely music composed for them by the greatest masters, deserve.

HEALTHFUL COOKERY

SOME SIMPLE FRUIT DESSERTS

George E. Cornforth

FRUITS are most beneficial to the system eaten raw, but I suppose few persons have become sufficiently converted to the "simple life" to be satisfied always to have simply fresh fruit for dessert. Many simple fruit desserts can be made, of which we give a few examples: —

Steamed Puddings

The common steamed puddings made with a soda or baking-powder biscuit dough are pasty and difficult of digestion, but wholesome and very palatable steamed puddings can be made by using cooked rice for the crust.

Wash one cup of rice by pouring hot water over it, whipping it with a batter whip and pouring off the water, then pouring on more hot water and whipping and draining it, repeating the operation till the water remains clear. Add three cups boiling water and three-fourths teaspoon salt, and cook in a double boiler one hour.

Line a pudding dish with a thin layer of this cooked rice. Fill the dish with sliced apples, pour over the apples sugar in the proportion of one-half cup sugar to one quart of sliced apples. Add a few grains salt and a little grated lemon rind if desired. Cover with a thin layer of rice. Put a cover on the dish, and steam the pudding two hours. Serve with —

Vanilla Sauce

1 tablespoon cooking oil
1½ round tablespoons flour
¼ cup brown sugar
1½ cups milk
1½ cups water
¾ teaspoon vanilla
A few grains salt

Heat the water and milk to boiling. Mix the oil, flour, and sugar. Stir the hot liquid into this mixture and stir till it boils. Boil two minutes. Add the vanilla and salt.

Instead of the apples, blueberries, raspberries, or blackberries may be used. When these are used, a little flour and the salt should be mixed with the sugar, and the sugar-and-flour mixture should be mixed with the berries. This is to thicken the juice.

I hope the reader will not think this is too simple to be good. If it is tried, it will be found to be excellent.

Orange Jelly

1 cup orange-juice
1 cup sugar
¾ cup water
¼ oz. vegetable gelatin cooked in
1 cup water

The vegetable gelatin is a seaweed called agar-agar. It should be possible to obtain it at drug stores.

The gelatin requires soaking in hot water and draining to remove its spongy taste and smell.

Put the one-fourth ounce of gelatin to soak in three quarts of hot, not boiling, water. After it has soaked three fourths of an hour, drain off the water by pouring the gelatin into a colander. Put the gelatin into fresh hot water, allow it to soak twenty minutes, then drain and put it into hot water again. After it has stood fifteen minutes, drain again; then put the drained gelatin to cook in the one cup of boiling water. When the gelatin is dissolved, which will be in a moment after it begins to boil, strain it into the remaining ingredients, which have been mixed together. Pour into molds wet with cold water, and set in a cool place. When cold, unmold, and serve with —

Coconut Sauce

1 pt. milk
½ cup shredded coconut
1½ tablespoons sugar
1 tablespoon corn-starch
A few grains salt

Save out a little of the milk with which to stir the corn-starch. To the remainder of the milk add the coconut and heat together in a double boiler for one-half hour. Strain out the coconut, pressing it well to get all the milk out of it. Put the milk back into the double boiler to reheat. Add the sugar. When boiling hot, thicken with the corn-starch stirred smooth with the milk saved out for that purpose. Add the salt.

This combination of orange jelly with coconut sauce makes a very pleasant blend of flavors, for the flavor of orange and coconut together is a most enjoyable one.

We might also add a fruit drink.

Currant and Raspberry Nectar

Juice of two lemons
¾ cup sugar
¾ cup currant-juice
1½ cups raspberry-juice
1 qt. water

To obtain the currant-juice and the raspberry-juice, cook the currants and the raspberries in sufficient water to cover them, then drain in a jelly-bag; or use the juice from canned raspberries and use currant jelly. If the jelly is used, less sugar will be required in the nectar. It may be necessary to vary the amount of sugar and lemon-juice to suit the taste, because lemons vary in size, and the fruit-juices may vary in acidity.

AMERICANIZED COFFEE CAKES—NO. 2

George E. Cornforth

IN a series of articles on cooking, written by a cooking-school teacher and published recently in one of the popular magazines, when the subject of baking-powder was discussed, the statement was made that the Rochelle salt left in the bread "is in the nature of an aperient and occurs in such small quantities that it is not likely to do *much* harm" (italics ours), admitting that it may do some harm. Now this is illustrative of the spirit of this age, the spirit of daring and willingness to run risks. If a thing is not immediately followed by results which are recognized as decidedly harmful, people are willing to risk it. If the eating of any food does not immediately give a person the stomach-ache, he is willing to risk eating it regardless of what its effects upon the system may be. Some time ago I heard a young woman say she thought it was all right to eat meat and drink tea and coffee if they did not hurt one, and she judged of whether they hurt her by whether they immediately gave her distress at her stomach. Few are cautious in this age, few take any appreciable care of their health and life. This is seen in the willingness to risk life in the development of the aeroplane. That may be justifiable because the aeroplane will be useful to mankind, but the same daring and disregard for consequences and results is seen in things that are not so justifiable. In the words of Scripture, "Because sentence against an evil work is not executed speedily, therefore the heart of the sons of men is fully set in them to do evil." Eccl. 8:11. So if the use of baking-powder "is not likely to do *much* harm," people are willing to risk it. True temperance, however, abstains from the use of anything that is harmful in any degree, and uses moderately things that are good; for good things, even "health foods," become bad when used immoderately.

The objection may be made that it is so much work to make cakes this way. But it is not really any more work. In the one case all the work is done at once, in the other, part of it is done at different times. But the whole process of putting a cake together takes practically no more work when yeast is used than when baking-powder is used.

German Potato Cake

In 1 cup lukewarm milk dissolve
1 cake compressed yeast. Add
2 cups sifted pastry flour
Set in a warm place to rise. When light add
¼ teaspoon salt
⅓ cup mashed potato
2 beaten egg whites
½ cup oil emulsified with
1 egg yolk
1 cup sugar
Grated rind of 2 lemons
⅓ cup chopped blanched almonds
⅓ cup raisins
2 cups sifted pastry flour
Mix thoroughly. Put into two pie tins. Brush the top with cream or a mixture of egg yolk and milk, then sprinkle over the top a mixture of
1 tablespoon sugar

1 tablespoon flour
1 teaspoon oil
A few grains salt
Then sprinkle on top of this
2 tablespoons finely sliced blanched almonds
Let rise, then bake three-fourths to one hour.

Superfine Coffee Cake

In 1 cup lukewarm milk dissolve
1 cake compressed yeast. Add
2 cups sifted pastry flour
Set in a warm place to rise. While this sponge is rising, beat together
1 cup sugar and
½ cup oil, then beat into this
1 beaten egg
1 teaspoon vanilla
Steam some figs and cut into small pieces enough to make
1 cup figs
Dredge the figs with flour. Cut into small pieces enough citron to make
1 cup citron
Chop filberts to make
1 cup chopped filberts
When the sponge is light, add to it the sugar, oil, and egg mixture, the figs, citron, filberts, and
1½ cups sifted pastry flower
Mix well together. Let rise slightly, and bake in a very moderate oven one and one-half hours.

"Straussel" Cake

In 1 cup milk dissolve
1 cake compressed yeast. Add
2 cups sifted pastry flour
Set in a warm place to rise. While the sponge is rising, gradually beat
½ cup oil into
1 egg, then beat in
1¼ cups sugar
When the sponge is light, beat this mixture into it and add
¼ teaspoon salt
Grated rind ½ orange
½ teaspoon ground coriander seed
2¼ cups sifted pastry flour
Mix thoroughly. Spread in a pan in which it will be one inch thick. Sprinkle with crumbs made by rubbing together with the hands till crumbly.
½ cup flour
½ cup sugar
2 teaspoons oil
A few grains salt
Allow to rise one-fourth inch. Bake slowly till just done, not long enough to make it dry.

Boston Coffee Cake

In 1 cup lukewarm milk dissolve
1 cake compressed yeast. Add
1 cup sifted bread flour
1 cup zwieback-crumbs
Set in warm place to rise. When light, add
⅔ cup oil with which
1½ cups maple-sirup have been beaten. Then beat in
2 eggs, one at a time
¼ teaspoon salt
1 teaspoon vanilla
1 cup currants, boiled till plump, drained and cooled
⅔ cup citron cut fine
1½ cups sifted bread flour
1½ cups zwieback-crumbs
Mix thoroughly. Put into two oiled bread tins, let rise one-half inch, bake in a moderate oven one hour and fifteen minutes.

The following coffee cake is the most difficult of all of them to make successfully, but perhaps some would like to try it. When properly made, it is a very good cake: —

Coffee Cake

In 1 cup lukewarm water dissolve
2 cakes compressed yeast. Add
2 cups sifted pastry flour. When light, add
1 cup sifted pastry flour.
Allow it to be rising again while you prepare the remaining ingredients. Cut up enough seeded dates to make
½ cup dates
Into the yolks of
3 eggs beat
1 cup oil as in making mayonnaise
Boil ½ cup raisins till plump, drain. Dredge the raisins and dates with flour. Beat the whites of the eggs. Add them to the dough. Then add
2 cups brown sugar, then add the oil and egg mixture, then
¼ teaspoon salt
The raisins and dates
2 cups sifted pastry flour
Mix well. Put into two pans. Let rise one-fourth inch. Bake in a moderate oven.

EDITORIAL

TREATMENT OF DIGESTIVE DISORDERS

WHAT can be the good of such a continued series of articles on the disorders of digestion as we have been giving for some months in LIFE AND HEALTH? If no other good is accomplished than to help some to realize the importance of not waiting till the stomach registers a "kick" before giving it a fair show, our work will not have been in vain; for doubtless a very large proportion of man's chronic ills are digestive, and are as much preventable as are typhoid fever and the other acute germ-diseases. But the prevention must be begun in the period of sturdy health before the warnings of indigestion, headache, and the like call for a halt. The pity is that most do not stop even for these warnings, and some make the colossal mistake of taking some digestive aid to hide their troubles, and then go right ahead in spite of the warnings.

Our last article was devoted to the classification of digestive disorders, according to Herter, the indolic type, the most common type among children, the saccharobutyric type, very common among adults, and the combined type, usually more severe than either of the other types.

In the matter of treatment Herter warns that no two cases are exactly alike, and that it is impossible to predict the outcome of treatment in any case, and that treatment of this condition is largely in the experimental stage. From this it will be understood that home treatment does not promise the most brilliant results in advanced cases. While most cases yield readily to treatment, long-standing cases improve very slowly under the most favorable hygienic conditions. Relapses and discouragements are common. Often there may be real improvement in function without any observable improvement in symptoms to encourage the patient. It is here that home treatment, even if right, might be given up in disgust, even when the patient is making improvement that he is unable by his own feelings and symptoms to appreciate, and he takes to some "tonic" that will make him temporarily feel better, but to his permanent undoing.

In the treatment of these disorders, it is of prime importance to avoid contamination of the food by putrefactive germs. The greater the freedom of the food from putrefactive bacteria, the less will be the liability to putrefaction at lower levels of the intestine. This necessitates the avoidance of raw foods and of foods left over from a previous meal. Cheese, except that newly made from milk containing few putrefactive bacteria, contains enormous numbers of these germs which are so damaging in these cases. Uncooked fruits contain a large number of putrefactive bacteria on their skins, and raw vegetables, even after thorough washing, convey enormous numbers of harmful bacteria into the digestive tube. As a rule, milk is better raw than boiled, for the reason that boiling destroys the lactic acid producers which tend to restrain the putrefactive bacteria, while it does not destroy the spore forms of the putrefactive germs, and after the destruction of the lactic acid germs, the putrefactive germs increase

all the more rapidly. As we stated in a former issue, a piece of meat may be indefinitely prevented from spoiling by keeping it in sour milk; and even if the decomposition has started, the sour milk will arrest it.

Another very important measure is the proper cleansing of the mouth before meals, as there are nearly always large numbers of putrefactive germs in the mouth, especially in the case of neglected mouths with decayed or loose teeth. Of the first importance is careful attention to the teeth by a competent dentist, followed by regular and frequent mouth toilet.

If there is atony of the stomach, so that food remains in it an undue time, measures must be taken to secure a more rapid evacuation, and perhaps a greater interval between meals may be necessary in order that the remnants from one meal may not contaminate the next meal. In some cases, it may be necessary to wash out the stomach in order to get rid of a putrefying mass.

From what has been said in a former article, it will be understood that it is particularly important to secure prompt digestion and absorption in the small intestine. Everything that contributes to improve the secretions of the stomach and intestines will aid in this. The most important measure is *rest*, physical, mental, emotional, and sexual, in order to allow the energies of the body to be utilized in the digestive effort. As Herter says: —

> "The effect of mental, emotional, and sexual fatigue upon the digestive tract has not been so carefully studied as it deserves, but there is no doubt that in each case the expenditure of nervous energy may lead to very similar results as regards the digestive organs. Rest from work of a taxing character may be an extremely important factor in the restoration of normal gastro-enteric secretions. In many persons, emotional fatigue, such as often results from strenuous business activity or from some kind of recreation, has a distinctly harmful influence. Even the interest attendant on free and animated conversation may be injurious."

In some cases the use of hydrochloric acid is a benefit, but in other cases the stomach is so irritable that its use is followed by disturbance. Herter doubts that the enzyms are of benefit; however, if their use is followed by increased tolerance of carbohydrates as shown by decrease in flatulence, we may feel assured that they are accomplishing some good.

Careful mastication of the food is important, both for the insalivation of the carbohydrates and in order to secure the comminution of the proteins, and their early absorption. In some cases, especially where the teeth are bad, it may be profitable to divide the food finely before eating, so as to insure that none of it will pass into the stomach in lumps. Even where the food is finely divided outside of the body, careful mastication is an aid to digestion.

Among the articles to be avoided by patients with digestive disorders, are condiments, free acids, excess of salt, and foods that are apt to enter the digestive tract in lumps, such as raw apple, celery, and salads. In cases where the stomach is especially sensitive, it is advisable to take some demulcent, as flaxseed, before meals.

Herter found it an advantage to restrict the use of meats, and in some cases to eliminate, for a time at least, all meat from the dietary. He considered it bad practise to urge the use of large quantities of food at the beginning of a course of treatment. He would begin moderately, and increase gradually as

the patient shows that he is able to bear an increase of food without producing unfavorable symptoms. "Even under the most favorable conditions, the effect of the diet must be carefully watched."

He found that intestinal antiseptics do very little if any good, and laxatives must be used with discrimination and great caution. Regarding cathartics he says: —

> "The long-continued and frequent use of cathartic remedies has in my experience nearly always resulted badly. I think laxatives should be employed mainly for the control of disturbances of a subacute or acute nature rising in the course of chronic derangements rather than for the treatment of the chronic conditions themselves. If it is possible to use food containing an abundance of cellulose, this may have a beneficial effect in the direction of preventing constipation, but it frequently happens that patients who suffer from constipation are also excessively sensitive to those foods containing much cellulose, and show gastric disturbances from their use."

It is here that the suggestions by others for the use of agar-agar or of vaseline as a laxative are valuable. Regarding the use of fermented milk and "antagonistic organisms," such as the Bulgarian bacillus, he says that the subject is "very far from resting on a scientific basis, and a large amount of most careful research is necessary to establish the exact position of this principle of treatment."

The editor, however, is certain, from observations he has made, that even when taken without soured milk or any milk, the Bulgarian bacilli have a distinct restraining influence on the putrefactive organisms, or at least on the putrefactive processes. In one case where the use of one or two apples was apt to be followed by a ballooning of the abdomen by gas, the eating of several apples, followed by a tablet of the Bulgarian bacilli, was followed by no bad effects. This observation was made repeatedly, and the editor is convinced that, in certain cases at least, the cultures of Bacillus bulgaricus has a decidedly restraining effect upon the processes of putrefaction in the intestine.

Herter also placed much dependence on high intestinal lavage, especially in cases of chronic saccharobutyric putrefaction, and in some extreme cases of the combined type. If one observes caution not to use an excess of fluid, this measure may be used two or three times a week for a considerable period with great benefit.

These articles have not been written for the purpose of suggesting self-treatment to a chronic dyspeptic, for probably no one is so illy prepared to treat himself as a confirmed dyspeptic. It is hoped that the perusal of these articles will cause many to realize the seriousness of "stomach trouble" and the importance of giving early and proper attention to digestive disorders, for when they have progressed to a chronic stage, there is little that can be done that will permanently benefit the patient. All rational treatment is followed by very slow improvement and many setbacks, and the patient, in discouragement, is likely to fall into the serious error of attempting to regain health by the use of "tonics," "pick-me-ups," and other "get-well-quick" schemes, to find when it is hopelessly too late that he has made a fatal mistake.

An article will follow on the teaching of Dr. Plönies, of Germany, who differs quite materially from some of the physicians whose work we have been studying.

Tobacco and Inebriety

AN article on "The Treatment of Narcotic Addiction," in the *Journal A. M. A.*, June 21, 1913, has a significant statement regarding the relationship of tobacco and inebriety, which is worth repeating: —

"Many patients who come under the class of periodic inebriates and whose periodicity seems to occur with no known cause or reason, are sufferers from chronic tobacco poisoning which in reality is the cause of their periodic alcohol inebriety. This is especially true of the excessive cigarette smokers and the many others who inhale their cigar or pipe smoke. These patients smoke to excess, and becoming nervous, increase their smoking that their nerves may be quieted. Finally, they become so nervous through their tobacco that they must take some narcotic to quiet them, and turn to alcohol. They are exceedingly intolerant to alcohol, and after the first drink or so they are mentally not sober, and then go on to the full spree. The vicious circle can be broken only by cutting off their tobacco, and unless this is done, they will stop neither alcohol nor tobacco. They cannot stop the alcohol under these conditions, and their only chance is to stop the tobacco."

This, from a man who specializes in the treatment of inebriates, is worth consideration.

❧ ❧ ❧

Pure Food Well Cooked

CERTAINLY the great medical journals are doing a service to mankind when they attack the subject of food and dietetics; for few physicians have had any adequate instruction along these lines, and they as a body need to have brought to their memories from time to time the importance of the subject. Dietetics is a problem having to do not only with the feeding of the sick; it concerns the nutrition of every family. An editorial article in the *Journal A. M. A.*, June 14, contains some very excellent thoughts, and we cannot forbear quoting a few expressions: —

"There is some truth in the assertion that neither states' rights nor slavery, but the frying pan, brought on the civil war; for frying encapsulated the food in a layer of fat impervious to the digestive juices, and the resulting indigestion aroused the mutual enmities and the berserker rage of our fathers. America is preeminently the land of the deadly hot bread, the sinker, the flapjack, the Bingo Frankfurter, the quick lunch. . . . Not only are our meats badly cooked, but also vegetables are frequently boiled in a way which deprives them of their characteristic odor and toothsomeness."

This condition the *Journal* attributes rather to temperament than to ignorance.

"There would seem to be among our people, in larger measure than elsewhere in civilization, a contempt for the culinary art, as if it were beneath notice. . . . Yet what in life can be more essential than the right preparation of substances which are to keep the human machinery going, in order that the best may be got out of it with fewest slowings down and interruptions?"

In the Old World cooking is a noble art, and a real zest for the fragrance of food is considered vital. But we Americans live too fast to pay attention to really good cooking, and perhaps it is more than a mere coincidence that we are known as a nation of dyspeptics.

❧ ❧ ❧

Reducing the Meat Diet

THE *Ohio State Journal*, in its issue of July 3, 1912, had an editorial with the title we have chosen for this article, which is another evidence that thinking men are coming to the place where they realize that a heavy meat diet is not the ideal diet, from which we take the following quotation: —

"Now is a good time to reduce the meat diet and give to the cattle raisers and meat packers an opportunity to lay up a stock and prepare the conditions for lower prices. Now is the time, we say, when the vegetables and fruits are crowning the year, and a man may live in the kingdom of health and joy on the

fresh green things of the earth, to do away with the old passionate, rheumy, stolid meat diet and live in the sunshiny food that gives song to the birds and honey to the bees.

"Anyhow, if one does not care to go to the length of a total abstainer, let him have meat no more than once a day, at least while the sun is north of the equator. It is the meat that is at the bottom of half our wickedness. It makes us impatient, violent, passionate. It makes us want to dispute, to yell, to kick the cat, and read a dime novel. Our Catholic friends have a rule not to eat meat on Fridays. It is based on a wholesome idea. We propose to our Protestant friends that they make a rule to turn any one out of church who eats meat more than once a day."

In our opinion this lightened meat ration (the lighter the better) is not a bad program for the winter months as well.

* * *

Protein Restriction in Kidney Disease DR. HENRY W. GOODALL believes that chronic nephritis is favorably influenced by placing the patient for a time on a protein-free diet. He says in the Boston *Medical and Surgical Journal,* May 23, 1913:—

"There is evidence that the sudden withdrawal of all protein from the diet causes no particular disturbance, and that such a restriction can be maintained for from seven to ten days, and perhaps longer, without resulting harm."

He uses candies, sugars, fruits, vegetables, starches, fats, and relishes. With such restriction, the doctor states:—

"The accumulated end products of protein metabolism in the blood are promptly eliminated, the nitrogen content of the blood falls to normal, and the kidneys and heart are given an opportunity to rest. Such a restriction may be followed by a low protein diet for a considerable period of time, even in advanced cases, without a return of the disagreeable symptoms.

He advises the protein-free diet from five to ten days, followed by a diet containing not more than sixty grains daily of protein until the improvement in the patient permits an increase to ninety grains. The diet is controlled according to the amount of urinary nitrogen.

In view of the fact that there is a greatly increasing tendency to death in the prime of life from kidney disease, and in view of the fact that a prompt and sharp cutting down of the protein affords almost magic relief, and in view of the fact that we now know that such a low protein dietary is not harmful but rather the opposite, does it not seem the part of wisdom for every one, even though seemingly in the best of health, to cut down on the protein ration without waiting to get a sinister warning from the kidneys?

Say, you large-bodied, well-built men of affairs with splendid digestions and magnificent appetites, with seemingly enough health to last for another generation, why not think of this, and cut the meat orders? Ten or twenty years from now, when your kidneys are pretty well damaged, a change may do something toward conserving your health, but not so much as it would now.

* * *

The Cart Before the Horse PROF. G. T. W. PATRICK, of the State University of Iowa, in a carefully written article, "The New Optimism," in the May *Popular Science Monthly,* gives among other grounds for optimism a crusade against alcohol. One paragraph especially is well worth noting. Dr. Patrick says:—

"Still another optimistic feature of the present is the crusade against alcohol. This is a determined and persistent position, and in the end will eliminate its use. Hitherto, the position has been largely sentimental and has been directed not so much against alcohol as against drunkenness. Recent studies in the psychology and physiology of alcohol lead us to believe that it is a race poison. It is the most deadly form of the downward or recalcitrant action of matter. As far back as history goes, it has acted as one of the most serious impeding forces to the upward progress of the human spirit. It is in spite of alcohol that progress has continued from century to century. It is impossible to estimate the damage it has done to the human race. Its elimination will be a far more difficult problem than the elimination of war. The same psychological cause of the universal desire for alcohol lies deeper than has been supposed, and it is only when this cause is understood that successful headway will be made against it. But it is undoubtedly true that alcohol will have to go. The emergence of women into political and social affairs will add new vigor to the opposition to it, and the psychological, physiological, and sociological studies will solve the problem of method."

This remarkable statement could not have been made a generation ago, or perhaps I should have said it would not have been made a generation ago by a man of any standing in science. In fact, it is almost within the memory of men now living that alcohol was supposed to be an absolute necessity and a blessing to man, and those who took even less extreme views than the above were considered the wildest of fanatics.

Now such statements as the above obtain place in our most respected scientific journals, and I predict that in the same way we shall one day realize a similar revulsion in regard to the eating of flesh. At the present time it is supposed by almost all authorities on food that a high protein diet, or at least a diet containing a fair proportion of animal tissue, is necessary for the best development of man and of the nation. One argument frequently used is that those nations which are most aggressive and prosperous are those that are the heaviest flesh eaters. But is not this a confusion of cause and effect? Why not apply the same logic to alcohol? It is precisely the countries that are the most prosperous which use the most alcohol, and in seasons of business depression the consumption of alcohol measurably decreases. Any one with a particle of discrimination will perceive that it is the prosperity that gives the opportunity to consume more liquors, and it is prosperity that gives the opportunity to consume more flesh. The fact is, unless some religious consideration prevents the use of flesh, a people is very apt to use flesh in proportion to the length of their purse, and of course the prosperous people eat more flesh than those who are not so prosperous.

And here we have another argument used in favor of flesh, namely, that it is a universal instinct; but again, this argument would prove too much, for the hankering after alcohol seems to have been universal as far back as history goes. The fact that alcohol and other stimulants or narcotics are almost universally craved by man is no longer used as an argument that these things are good, and it certainly should not be an argument in the use of meat unless we have some better argument to go with it.

Just as in the case of alcohol one thing after another has come to disturb old ideas until we have completely turned around to realize that what was once supposed to be a benefit is an absolute race poison, so we are learning, a little at a time, that flesh-meat is not so essential to man as we once thought.

We have learned, in the first place, that a high protein diet is not at all essential, and there is even a question as to whether it is not injurious. We have learned that the body uses a surprisingly small quantity of protein in the repair of tissue; the rest of the protein, when a high protein diet is eaten, must be split up, the fuel part being used for the production of energy, and the nitrogenous part being eliminated largely as urea. We have not yet determined to what extent the elimination of this extra quantity of nitrogenous matter may overtax the eliminative organs and be responsible for diseases of the liver and kidney.

Another fact learned somewhat recently is that the body does not assimilate its protein as such, but breaks it up into its simple constituents. These simple constituents, the amids, are the same whether they come from vegetable or animal tissue. If the food contains the particular amids which the body requires, it matters not whether they were originally from animal or vegetable origin so far as their property of nourishing the body is concerned.

* * *

Diet and Arteriosclerosis

Dr. Louis Faugeres Bishop, a well-known authority on diseases of the heart and circulation, believes that alcohol and tobacco have received too much blame for the causation of arteriosclerosis. He says in the *Journal A. M. A.*, March 15:—

"Heart-disease and hardening of the arteries in nine times out of ten are, I believe, due

to disturbances of the chemistry of the body. The prevention of heart-disease and hardening of the arteries must be accomplished by a proper regulation of the chemistry of the body, particularly that pertaining to the intestines and the liver. This is accomplished through diet, rest, and exercise, through the administration of certain well-defined remedies, and the limitation of nervous strain, than which nothing is more important to upset the bodily chemistry."

But it is not to be settled by a few dietetic rules, for —

"the technical chemistry involved is difficult and complicated in the extreme, and entirely beyond the comprehension of those not specially trained in the chemistry of this particular branch of work."

It is particularly this class of diseases that carries men off in the prime of life, when they ought to be good for twenty, thirty, or forty years of solid work; and the unfortunate fact is that usually there is nothing to indicate to the victim the true condition of affairs until it is too late, unless he takes the precaution to secure skilled advice from time to time. For —

"by the time the heart itself shows poisoning, as appreciated by the sufferer because of palpitation, pain, or shortness of breath, irretrievable damage has been done, and the chemical vice has become so deeply seated that an extreme regimen is necessary, while in the early stages a slight modification of diet and hygiene can check the trouble."

Dr. Bishop regards the development of heart-disease as the manifestation on the part of the individual of a kind of idiosyncrasy to certain articles of food, and believes that if this condition is discovered in time these may be overcome. In his words,—

"Heart-disease seems to me often to develop as a result of damage done by some material derived from food to which the person is idiosyncratic. The damage also often comes about gradually without disagreeable symptoms. The substances at fault are in all probability the amino-acids derived from the breaking down in the intestinal tract of nitrogenous food derived from eggs, fish, meat, and soups. Which of these foods supply the amino-acids doing the damage, can be determined only by experiment with the individual under observation. We cannot lay down rules for every one. Thus I have observed examples in which almost fatal heart-disease developed from the excessive eating of fish, many others are damaged by an excessive use of eggs, and still a greater number by meat. When the process is started, even a very small quantity of the offending food can keep the damage going on."

Dr. Bishop follows Dr. Cornwall in the advocacy of a "few-protein diet," on the theory that the fewer kinds of protein one uses the less likely is he to get the particular amino-acids to which he has an idiosyncrasy. He also believes that every person past middle life, no matter how good his apparent health, should have periodical examinations in order to detect incipient disease. The Postal Life-Insurance Company (and possibly others) now provides for a yearly free medical examination of all their policy-holders who desire it,— an excellent practise, by the way.

Regarding the few-protein diet, the doctor has not seemed to realize that if one restricts himself to one form of protein — say meat — and that happens to contain the offending amino-acid, he is worse off than if he were eating a greater variety. It is notable that it is the animal proteins, in the doctor's experience, that cause heart trouble.

* * *

Eugenics and Diet

At a recent session of the French Eugenic Society, Frederic Houssay, a professor of the Faculty of Sciences, Paris, read a paper on the influence of diet on heredity, which recounts some remarkable experiments.

He kept, 1900-07, six generations of hens on a diet composed entirely of raw meat, obtained from animals such as are ordinarily used for food, and having no taint. The first effect of the diet seemed favorable, but later there appeared increasing toxic symptoms, fatigue, and arthritis deformans, which if allowed to take their course always resulted fatally, but if the fowls were placed on a vegetarian diet recovery was usual. Not only was the diet unfavorable to individuals, but it had an equally bad influence on the progeny. At first 100 per cent of the eggs hatched, but this fell off to 27, then 18, then 6. And during the same year, as a hen became more and more affected by the poisons generated by the meat, the proportion of eggs that would hatch de-

creased from month to month, reaching zero by the end of the season. And the chickens which hatched had less and less vitality as the time went on, there being more failure to reach maturity, and premature deaths coming earlier and earlier. At the end of six generations the race was extinct.

Houssay, on the basis of this work queries whether habitual laziness and overfeeding have not been the cause of the extinction of many human families. Most civilized persons eat too much, he thinks; and this fact is usually recognized late in life, when people diminish the amount of their eating, but not soon enough to avoid disaster; that is, it comes after the time of the rearing of children. Thus, he thinks each generation begins life under less favorable conditions than those that went before, and thus civilized families, one after another, suffer extinction. The elite are constantly becoming extinct, and must be replenished with accessions from the masses who live more frugally and more soberly.

It is questionable whether the learned scientist was justified in drawing all these conclusions from the observed facts. An exclusive diet of meat is unnatural for a fowl, and would probably end disastrously to men and women as well as to hens, particularly if the special feeding began early in life. In feeding meat, if the blood and bones were not included, the animal received an insufficiency of certain food elements, perhaps similar to what would have been the case had he fed on an exclusive diet of white bread. Carnivorous animals usually eat not only the lean meat, but the entire carcass, including blood, bones, skin, etc.

The experiments of Houssay at any rate confirm what Prof. E. Maurel, of Toulouse, formerly maintained; namely, that overfed individuals whose principal diet is meat, become sterile at the end of three or four generations.

⁂ ⁂ ⁂

New York Life Table

RECENTLY the New York City Department of Health has prepared a life table based on the mortality statistics of the three-year period, 1909-11, and has compared it with a similar life table prepared for the period 1879-81, thirty years before. The table shows a diminished duration of life after the age of forty, though the general average of life is increased by the saving of life in the earlier years, especially baby life.

In the *Monthly Bulletin* of the department of health, the cause of the diminished life after forty is discussed, for it is certainly disconcerting that notwithstanding our greater knowledge of such conditions as diseases of the heart and kidneys, they are becoming more formidable than ever. Is it because by our methods weaklings who otherwise would die young are permitted to reach the age of forty? The writer in the bulletin thinks that —

> "it seems rather far-fetched to trace the existence of such physical deterioration from infant life or early childhood to life at forty years of age or over. A far more plausible argument as to the increased mortality over forty years of age is as follows: Within the past twenty years there has been a considerable increase in the mortality from certain diseases that affect the vital organs of the body, such as the heart, kidneys, stomach, liver, and intestines. The death-rate from cancer, heart-diseases, and kidney diseases has increased considerably within a generation; accompanying this increased mortality has been an increase in the consumption of spirituous liquors and nitrogenous articles of food; in other words, *too much drink and too much meat* [italics ours]. The wear and tear of the strenuous life is also a factor in this increase of the death-rate. The introduction of easy, comfortable, and rapid means of transportation has seduced the average individual from his daily exercise in the open air. The heart that is kept going at a high rate almost continuously, must, of necessity, wear out sooner than it otherwise would; the kidneys compelled to work overtime will break down sooner or later, and more often sooner than later; the digestive organs with insufficient periods of repose will revolt and become the seat of cancerous growth."

In other words, it is whisky, too much meat, strenuous life, and lack of physical exercise; or, as was stated of Sodom, "pride, fulness of bread, and abundance of idleness." And doubtless the increased prevalence of venereal disease is a material help.

Early Diagnosis of Cancer

DR. PARKER SYMS recently read before the medical society of the State of New York an important paper on the prevention and cure of cancer. From the best knowledge at our command cancer seems to be on the increase, and it is certainly one of the most formidable diseases of mature man. When it has become firmly established, very little can be done but to watch the progress of the disease to its horrible termination. But if discovered in time, it often may be radically cured. The great trouble is that in the large proportion of cases the disease is not recognized until it is too late. The following are given by Dr. Syms as signs by which cancer may be recognized in its early stages when there is some hope of curing it: —

"Loss of appetite may be the only sign present to indicate an incipient cancer of the stomach. A newly acquired tendency to constipation may be the only symptom of a cancer beginning in the large intestine. Chronic jaundice should always make us suspicious. Loss of weight and loss of vigor not to be accounted for by fever or other apparent cause, should always make us apprehensive."

Many persons think of pain as an early symptom of cancer, and in the absence of pain they overlook other significant symptoms which otherwise might lead to early diagnosis and cure. As the doctor says: —

"Pain is usually present late. It is present as a rule during the late development of cancerous growths. Pain is not a characteristic sign of the early stage of cancer."

Regarding the importance of early diagnosis Dr. Syms says: —

"There is one thing that cannot be impressed too emphatically, and that is the necessity of early diagnosis. If there is any doubt as to whether a patient is or is not developing a cancer in its early stages, the patient should be given the benefit of that doubt. All suspicious tumors, no matter where situated, should be regarded as malignant until they have been proved to be innocent or non-malignant. Take, for instance, a lump or tumor of the breast. Nine tenths of tumors of the breast are malignant, or become so."

* * *

Physiology of the Open-Air Treatment

PROF. LEONARD HILL a few years ago startled the world by denying practically all the received notions regarding ventilation. He believes that ventilation is not a matter of securing more oxygen, or getting rid of carbon dioxid or body poisons, but that it is simply a matter of furnishing air that is in motion, and moderately cool and dry. He had by numerous experiments shown that one in an air-tight case, who has become exhausted and apparently suffocated by the lack of air, can be completely revived by means of an electric fan.

In close quarters, however, it is certainly true that there is much more infection through the spray discharged in coughing, sneezing, and even talking; and if the room is confined and crowded, the influence of this spray infection may be considerable.

In a recent lecture delivered at Brampton Hospital for consumption, Dr. Hill concluded as follows: —

"I am convinced that the whole effect of open-air treatment is due to the movement, temperature, and moisture of the air, and has nothing to do with its chemical properties. Conformity to a better mode of life will enormously increase the health and happiness of everybody. Modern life is tending to put people into confined places, heated by convectors, with perfectly made windows, no drafts, and that kind of thing, and it is diminishing the metabolism and vigor, health and happiness, of everybody, quite apart from causing consumption. . . . What we have got to do is to compromise and arrange matters so that we may get open-air exercise and exposure to wind and weather. Do not let us put up these great sky-scrapers, or have these artificial cellars for people to live in, but let us have facilities for open air, and playing-fields, and exercises for the body, and then we shall enormously increase the happiness of the people."

FRUITS

(*Concluded from page 454*)

fully ripe fig right from the tree can know the possibilities of this fruit.

But there are certain fruits that bear storing, such as apples and pears. Such fruit, if not actually in storage, should be in a clean, cool, airy cellar, preferably spread out on shelves, so as to facilitate occasional inspection, and to prevent contamination of one fruit from another; for as most persons know, rot is a contagious disease, and a rotten apple should be quarantined, just as we should quarantine a case of measles, else the disease will spread. It is proper to speak of rot as a contagious disease, for it is a condition caused by the invasion of germs into the tissues of the apple, just as our contagious diseases are the result of the invasion of disease germs into our tissues. But the germs that cause apple disease are incapable of causing disease in animals and man, except as they may cause putrefaction in the intestinal tract. In case fruit is kept in boxes or barrels, the danger of contagion may be greatly lessened by wrapping each fruit in tissue-paper.

From the accompanying table it will be seen that a diet entirely of fruits would be quite expensive and impracticable. We have not given any of the nuts in this connection, as we expect to take up the nuts in a later issue; but combined with the nuts (which in a botanical sense are fruits), a very practicable, healthful, and well-balanced diet can be arranged, though, as commonly used, such a dietary is rather expensive; but by a proper selection of fruits and nuts, a dietary could be arranged that would be nutritious, well-balanced, satisfying, and at moderate cost. This matter we may take up more in detail in the future.

Kind of food material	Price per pound	Cost per 75 grams protein	Cost per 2,700 calories energy	Calories for ten cents
Apples	1.5	.83	.18	1,467
Bananas	7	1.46	.63	429
Grapes	4	.67	.32	837
Oranges	6	1.67	.95	284
Peaches	4	1.33	.68	398
Pears	3	1.00	.31	866
Plums	3	.55	.22	1,232
Watermelons	1.5	1.25	.67	400
Blackberries	7	.90	.70	386
Currants	5	.55	.51	530
DRIED				
Apples	12	1.25	.24	1,121
Dates	10	.88	1.86	1,450
Figs	15	.58	.28	988
Prunes	10	.93	.22	1,190
Raisins	10	.73	1.86	1,445
MISCELLANEOUS				
Porterhouse steak	25	.22	.61	444
Whole milk	3.5	.18	.28	925
Skim-milk	2	.10	.32	850
White bread	5	.09	.11	2,430
Sugar	6	..	.09	3,106
Dried beans	5	.04	.08	3,210
Potatoes, 90c bu.	1.5	.14	.13	2,068

The tables have been figured on the basis of seventy-five grams protein and two thousand seven hundred calories, as that is approximately the amount of tissue-building material and of fuel material required by a person of ordinary size at the ordinary business and professional occupations that do not require heavy muscular work. So the tables indicate the cost of each of the different foods necessary to supply the amount of protein and the amount of fuel for one day for the ordinary person. The table has been based on the tables prepared by the United States Department of Agriculture. The prices given are those which were current at the time the table was prepared.

The Cotter's Saturday Night

New Version

THE labor of the week is o'er, the stress and toil titanic, and to his humble cottage door returns the tired mechanic. He hangs his weather-beaten tile and coat upon a rafter; the housewife greets him with a smile, the bairns with joyous laughter. The supper is a merry meal, and when they've had their vittles, the mother plies her spinning-wheel, while father smokes and whittles. But now the kids, a joyous crowd, must cease to romp and caper, for father starts to read aloud the helpful daily paper: —

"A cancer on the neck or knees once meant complete disaster; but Dr. Chowder guarantees to cure it with a plaster. He doesn't use an ax or spade, or blast it out with powder; don't let your coming be delayed — rely on Dr. Chowder!"

Outdoors there is a rising gale, a fitful rain is falling; they hear the east wind sadly wail like lonely phantoms calling. But all is peace and joy within, and eyes with gladness glisten, and father, with a happy grin, reads on, and bids them listen: —

"If you have pimples on your nose or bunions on your shoulder, if you have ringbones on your toes, ere you're a minute older call up the druggist on the phone and have him send a basket of Faker's Pills, for they alone will save you from a casket."

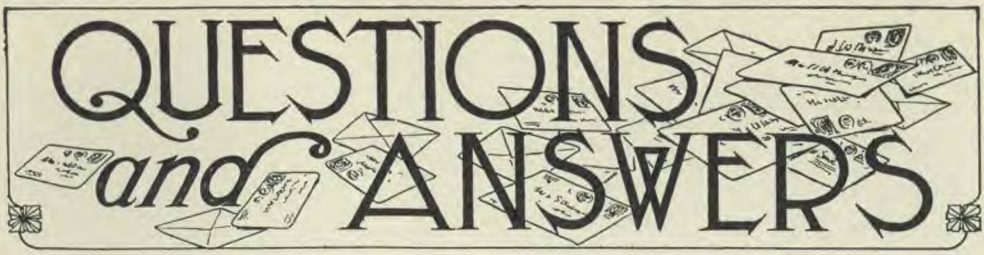
The clock ticks on the cottage wall, and marks the minutes' speeding; the firelight dances in the hall, on dad, where he sits reading. O, quiet, homely scene of bliss, the nation's pride and glory! And in a million homes like this, dad reads the precious story: —

"O, countless are the grievous ills, afflicting human critters! but we have always Bunkum's Pills and Skookum's Hogwash Bitters. Have you the symptoms of the gout along your muscles playing? And are your whiskers falling out, and are your teeth decaying? Have you no appetite for greens, and do you balk at fritters? We'll tell you, reader, what it means — you need some Hogwash Bitters!"

The children nod their drowsy heads, their toys around them lying. "I'll take them to their little beds," says mother, softly sighing. "It's time they were away from here — the evening is advancing; but ere they go, O husband dear, read one more tale entrancing." And father seeks that inside page where "Household Hints" are printed, where, for the good of youth and age, this "Household Hint" is hinted: —

"If they have maladies so rank they are too fierce to mention, just call on good old Dr. Crank; you'll find it his intention to cure you up where others fail, though t'others number twenty; but don't forget to bring the kale, and see that you have plenty."

— *Walt Mason, in Collier's.*



THE editor can not treat patients by mail. Those who are seriously ill need the services of a physician to make a personal examination and watch the progress of the case. But he will, in reply to questions sent in by subscribers, give promptly by mail brief general directions or state healthful principles on the following conditions: —

1. That questions are *written on a separate sheet* addressed to the editor, and not mixed in with business matters.

2. That they are *legible and to the point.*

3. That the request is *accompanied by return postage.*

In sending in questions, please state that you are a subscriber, or a regular purchaser from one of our agents; or if you are not, accompany your queries with the price of a subscription to LIFE AND HEALTH. This service is not extended to those who are not regular readers.

Such questions as are of general interest will, after being answered by mail, also be answered in this department.

Mineral Water.—"Enclosed I send you wrapper from a bottle of Veronica. Will you give us your opinion of it?"

I have had no experience with Veronica water. It may be a purgative, and it may have an alkali to relieve some acid conditions. Other than this its benefit is problematical.

The promoters of all waters make extravagant claims; all can show testimonials, and all have some persons who think they are benefited by drinking the water. But one can say the same thing of Peruna and a lot of other worthless patent medicines.

This is a commercial proposition. It is the business of the promoters to market as much as possible of the water. It costs them nothing, and the more they can market the more the profit. And so they use every means in their power to create a greater demand if possible, and everything they can say to create a demand is said, and all the resources of the advertising art are employed. The suggestibility of individuals who have been temporarily aided, also helps materially in making it popular.

Drinking at Meals.—"I recently read that it is good to drink plenty of water with the meal provided one does not wash down the food. I have always heard that it was not good to drink with meals, especially cold water. I should like to know your opinion."

Recent experiments performed by a number of careful observers seem to indicate that food is better digested when a certain amount of fluid is taken with the meal than when it is not. This has been tried by scores of individuals observing their ability to work, their symptoms and digestive powers, and everything of that kind, over quite long periods of time, and I think there was not an exception to the observation that the use of fluid with the meals seems to be beneficial.

Danger From Tuberculous Patient.—"I have a brother twenty-six years old, who has tuberculosis. He has been in bed since March 5, and is so weak he is scarcely able to stand. The slightest exertion leaves him almost without breath. We live in the country, twenty-eight miles from New York City, and he wants to come to live with us. The climate is very good, but we have two children, aged four and two years, and my husband fears they might contract the disease. Would you advise my taking care of him, or would he better stay at home with my mother and sister, where he is?"

If your brother is "educated" so that he is careful in his disposal of sputum, and considerate of the health of others, he need not be dangerous to your family, although for the sake of the children he should not habitually occupy the rooms in which the family congregate.

During the summer, when nearly every one lives outdoors, there is practically no danger if he is not spitting around and soiling everything within his reach.

It would be impossible for me to give you briefly such precautions as would be best in a case of this kind, and I suggest that if he comes to your place, you secure a copy of some work on tuberculosis, like the following: "Tuberculosis," by S. A. Knopf, M. D.; paper, twenty-five cents; cloth, fifty cents; published by the Survey, 105 East Twenty-second St., New York City; "Consumption: Its Prevention and Cure Without Medicine," published by E. B. Treat & Co., 241 West Twenty-third St., New York.

Now as to whether I should advise your taking him, that of course would depend entirely on circumstances and on how much you feel devoted to his interest. It will be a heavy burden on you, and if he is bedridden and you have to be with him constantly, there is the possibility that you may, even in spite of care, contract the disease.

It is just as possible for one to be cured in the city as in the country, provided arrangements can be made by which the patient can be outdoors practically all the time. There is a

book, "Fresh Air and How to Use It," by Thomas B. Cherrington, M. D., published by the Association for the Study and Prevention of Tuberculosis, 105 East Twenty-second St., New York, which you could obtain and get very careful and accurate directions for making a sleeping-porch, etc. There is also a *Journal of the Outdoor Life,* published at 289 Fourth Ave., New York, 10 cents a copy, $1 a year.

Neurasthenic Symptoms.—"For some time I have been troubled very much with a great many complications, and have consulted two doctors, but they have done nothing whatever to relieve me. Following is a list of symptoms: Throbbing of the flesh in different parts of the body; dull pains in the body; a strange sensation about the finger-nails and teeth, accompanied by cold hands; this same sensation when anything acid is eaten; a feeling of weariness; pernicious constipation; and bitterness in mouth all the time. Do Epsom salts injure the system?"

It is impossible to deal with a complicated case by mail. Your symptoms indicate neurasthenia. I do not know whether this is due to the climate [patient was in the tropics] or to some other trouble.

Epsom salts is a very poor substance for continuous use in case of habitual constipation; it only makes it more habitual, and the magnesium in your system is bound to do damage; in fact, it may have something to do with your symptoms. If it is necessary to use something of this kind, I should prefer cascara, but you are better off to regulate yourself by natural means.

If you could do a little gardening every day, standing and then bending at the hips until your hands reached the ground, going through this motion for one-half hour or an hour, it would have as much effect on your constipation as anything. Such exercises can be taken, of course, in your room, but they are not likely to be as beneficial. I suppose in your climate you do not exercise as much as you ought.

Treatment of Hookworm.—"Please explain how thymol is administered for hookworm."

The following method is recommended: "A dose of Epsom salts is administered in the evening of the first day, or one dose is given at 5 P. M., a light supper at 6 P. M., and another dose of Epsom salts at 8 P. M. On the second day one third of a dose of thymol is given at 6 A. M., one third at 7 A. M., and one third at 8 A. M. At 10 A. M. a dose of Epsom salts is given. This permits the withdrawal of the last one or two doses of the thymol if unfavorable symptoms supervene. The average dose is 30 grains. It is considered best in giving Epsom salts to dissolve a tablespoonful of the salts in a tablespoonful of water. Administer this, and then have the patient drink copiously of water. After the morning dose of salts following the thymol, water should not be given so freely. During the administration of the thymol, little if any water is allowed." It will be seen from this, and understood from the fact that thymol is not by any means a harmless drug and may prove dangerous, that the treatment should be in the hands of a competent physician.

Pure Lemon-Juice.—"I cut lemons in two, swallow the juice from both halves, and then drink plenty of water. Is the clear juice of the lemon too strong when taken in this way?"

It probably is not for you; it might be for some persons with sensitive throats or with acid stomachs.

Detritus in Tonsils.—"What do you recommend to prevent the frequent formation of what seems to be hardened pus in the crypts of the tonsils?"

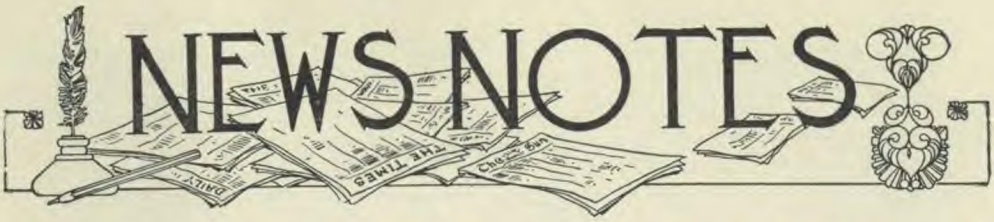
The hardened matter you find in the crypts of the tonsils is probably not hardened pus, but a bacterial growth. The bacteria grow and possibly food collects, and I know of nothing that will relieve this unless it is the removal of the tonsils, or possibly it may be relieved by cauterizing the crypts. The patient probably has very large crypts which are in somewhat unhealthy condition, favoring the growth of germs.

Dyspepsia.—"I have run down in the last year from 190 pounds to 150 pounds. I am nineteen years old, and do not use alcohol or tobacco. I have very slow digestion. I eat two meals a day, and sometimes a few apples in the evening. My stomach turns sour almost every day about four hours after I eat. It does not seem to make much difference what varieties I eat. I am not sick especially, but feel tired much of the time. What should you advise in my case? Would ——— [a patent medicine] be harmful?"

It is impossible from a written description to determine with accuracy regarding the condition of a patient. Doctors are not magicians, and it requires very careful personal examination and questioning, possibly two or even three visits, in order to be certain in some cases what the matter is. I can only make suggestions.

I should say, cut out the mushes. Take your cereal food either in the form of corn flakes or shredded wheat, or bread dried in the oven so it is crisp but not brown, using with it milk, or preferably cream. Use as many eggs as you can easily, and all the milk you can drink. You ought to be able to use considerable fat,—butter, olive-oil, or even one of the vegetable cooking oils. I have heard peanut-oil very highly recommended for adding flesh, but I cannot say as to this. I do know that olive-oil, properly used, may do very much toward increasing the body weight; and it will lessen the tendency to acidity, which I believe is one of your troubles.

The patent medicine you mention I have no use for. It is simply a shotgun prescription of a lot of substances, each one intended to relieve some particular trouble of the stomach. There is no doubt that it does relieve symptoms temporarily, but I do not believe that there has ever been a case that was permanently helped by it. It simply puts off the evil day, and when it does come it comes all the worse.



Illiterate Native Americans.— There are seven States in which more than ten per cent of the native white voters cannot read their ballots. These voters were in the factories when they should have been in school.

A "Typhoid Mary" in the German Army. — In the kaiser's army there was an epidemic involving more than one hundred cases of typhoid fever with twenty-three deaths, traced to a cook, who was shown to be a typhoid carrier, and had probably been a carrier for years.

Canneries and Children.— Because of their exemption from the action of child labor laws, canneries employed more children under the age of fourteen than any other industry in New York State, up to last year. Now the law in that State forbids the employment of children under fourteen in the canneries.

Pennsylvania Passes Eugenic Bill.— Both houses of the Pennsylvania Legislature have passed a bill providing that no marriage license shall be issued when either party is epileptic, imbecile, or of unsound mind, nor to any man who is or has been within five years an inmate of any county asylum or home for indigent persons, unless the applicant can show that the cause of such condition has been removed, and that he is able to support a family. Applicants must sign a statement that they are free from transmissible disease.

The Cause of Hunger.— Observations (*American Journal Physiology*, 1913) upon a man with fistula have shown close correspondence between the time of contractions of the empty stomach and the sensations of hunger of the subject. And the stronger the contractions, the greater the hunger sensation. When the empty stomach was by artificial means made to contract, a sensation of hunger was produced. This seems to indicate that the sensation of hunger is caused by the contraction of the empty stomach.

Horse-Flesh for Food.— Horse-flesh is used for food in France (probably because of the price, 3½ cents a pound) much more generally than we realize. There are in France seven hundred horse slaughter-houses, and in Paris, in 1911, sixty thousand horses were consumed. Doubtless they are poor, old, worn-out, and sick animals, which, having served man faithfully during their lives, must thus serve him in death. It is that carnivorous beast-instinct in man that will accept such food in preference to the pulses and other more wholesome, or at least less repugnant, sources of protein.

Pellagra.— Lavinder in the *Southern Medical Journal* says: "When consideration is given to the character of the disease; its continuous and rapid spread; its chronicity; its frequent distressing and painful manifestations; its termination at times in insanity; its grave form and high mortality; to the class of people most affected; to the absence of any definite knowledge of its real nature and cause; to the fact that such knowledge as we do possess casts at least grave suspicion on a valuable food product in general use; to the absence of any trustworthy prophylactic [preventive]; to the inefficiency of therapy [treatment] . . . this question rises to the dignity of a national problem demanding the most serious attention."

The Antifly Campaign.— Mr. Edward Hatch, Jr., 156 Fifth Ave., New York City, the world's first and greatest fly fighter, has furnished interested parties with full particulars about how to conduct a local clean-up, antifly campaign. His program was based on many years of experience in the antifly movement, and includes his own devices for interesting men, women, and children in the danger of the murderous house-fly. Mr. Hatch also furnished local newspapers with scientific and interesting data, which was published with a view to enlisting the active efforts of entire communities against the fly pestilence. One of his devices is a magic post-card, which, when rubbed with a pencil, tells some very interesting things about the fly, and why and how it should be destroyed.

Gliadin and Nutrition.— Osborne and his coworkers, as reported in the *Journal of Biological Chemistry* (September, 1912), have shown that animals can thrive on a diet in which the nitrogen is furnished in a single protein (gliadin) differing materially in its make-up from the proteins of animal tissue. Full-grown rats fed on this diet for three hundred days showed no ill effect. Young rats on this diet failed to grow; but when the gliadin was replaced by other protein they resumed growth, even in some cases, at a period beyond the normal growth period of rats. Two rats fed on gliadin for five months were paired. The offspring, which were healthy, were satisfactorily nourished by the mother for a month, she being on the gliadin diet. At the end of this time three of the young rats, given a normal diet, developed normally, and one given the gliadin diet failed to grow. Evidently the mother was capable of furnishing to her offspring both before and after birth the components missing in the gliadin diet. In other words, there was a synthesis of protein.

Modern Chivalry in the South.— One of the most barbarous practises recently chronicled is that said to be in vogue in North Carolina, where it seems that, at least in two mills, the women and children go to work at six in the morning and the men at seven. They all quit at the same time, the men working ten hours, the women and children eleven hours. This, if true, is race suicide with a vengeance. Will the people of North Carolina stand for this?

Antifly Magic Post-Cards.— The Fly Fighting Committee has issued a series of post-cards, which, when rubbed with a pencil, develop, as if by magic, a series of strong arguments for the destruction of all flies. Those who would not pay attention to an ordinary handbill or post-card will take time to rub out one of these cards in order to see what it says, and the lesson will be lasting. These cards may be had in 1,000 lots at $5 per thousand f. o. b. Jersey City. Doubtless the Jersey City Printing Company will send samples to any one sending postage-stamp and address.

Horror of Hotel Kitchens.— According to a writer in the *International*, hotel kitchens in New York City, and doubtless elsewhere, are sadly in need of reform. "Some of the men," he says, "we found to have boils, eczema, and scalp diseases; the usual proportion suffered from venereal diseases with their concomitant skin manifestations. Many of the men working in overheated rooms are subject to colds in the head, and do not carry handkerchiefs. Tuberculosis is the special occupational disease of kitchen workers." Bad enough, but that is not all. Two towels a day are given the workers to mop their brows and wipe their hands, and these same towels are used for molding the food on the serving plates. And he tells much more in the same line, the which, if a small part of it is true, renders these places unfit for the preparation of human food. Probably no one who has visited one of these kitchens would care to eat in the spick-and-span marble dining-room above. "Whited sepulchers!"

Coca Under Surveillance.— On the basis of information furnished him by the Bureau of Chemistry, United States Department of Agriculture, the Secretary of the Treasury has declared that the importation of coca and its products for any other than medicinal purposes constitutes an illicit traffic under the Food and Drugs Act, which prohibits the importation of any drug (or its products) which is dangerous to the public health. Hereafter, every sale of coca-leaves or cocain, no matter how small, must be recorded, together with the use to which it is to be put. If it is true that from two hundred thousand to two hundred and fifty thousand persons are cocain addicts, it is time that something drastic was done to put a stop to the evil, which has spread partly because of the tendency of unstable individuals to look for artificial stimulation, but principally because of the cupidity of unscrupulous dealers in the drug, who have been doing all they can to make victims in order to have permanent customers.

Free Ferry Service.— Boston's mayor has ordered that on Sundays and on very hot days in summer the ferry-boats shall carry women and children without charge.

Colds.— In an article on "Common Colds," in the Boston *Medical and Surgical Journal*, June 5, 1913, is this summary: (1) Colds, so-called, are unquestionably due to infection by micro-organisms; (2) colds are contagious; (3) colds can be largely prevented by reasonable isolation of every case, and preventive inoculation; (4) colds can be aborted, or their course shortened, by vaccine treatment; (5) the treatment of acute and chronic inflammation of the respiratory tract by vaccines is specific; (6) a symptom complex resembling influenza may be due to other organisms.

The Cause of Pellagra.— Dr. Wm. H. Harris, of New Orleans, has succeeded in producing in rhesus monkeys what appears to be typical pellagra ("the animals develop all the essential clinical signs and symptoms together with the pathologic picture discerned in the disease in man") by injecting a filtrate of some of the autopsy material from patients who died of pellagra, with no intercurrent disease. The material was filtered through a Berkefeld filter letter N. The experimenter suggests, as a result of the experiment, that the cause of pellagra is a micro-organism capable of passing through the pores of certain Berkefeld filters.

The Value of Fresh Air.— Physiologists may have proved to their satisfaction that the proportion of oxygen and carbon dioxid in the air is not so very important, and that there is nothing so very injurious about second-hand air; but the experiment in Philadelphia in which the schoolchildren in two rooms were compared, the children being of the same grade and as near alike as possible in every way, with the exception that one room had ordinary ventilation and heating and the other had the windows wide open, and no artificial heat unless the temperature went below 45°, the children being protected by extra wraps, ought to be borne in mind by all persons to whom are committed the management of schools, whether public or private. The physician in charge of this experiment watched the two rooms carefully during the fall, winter, and spring, weighing the pupils, and noting their physical and mental condition. The pupils in the open-window room gained in weight on the average twice as much as the pupils in the other room, were wholly free from colds, were much more regular in attendance, more alert, quicker to learn, and better behaved than the others. As a result of the experiment, the school board has planned for the establishment of open-window schools in a number of the Philadelphia schools. Why not make them all open-window schools? Sickly pupils should not be compelled to attend any other schools, and healthy pupils do much better in such schools; so there is plainly no excuse for the old-style schoolroom with its defective ventilation. More fresh air means more vitality.

Victory Against Traffic in Narcotics.— Thirty-four nations were represented at the recent opium congress at The Hague, and an international agreement for the suppression of the sale of narcotics — that is, an agreement by each government not to permit the shipment of narcotics other than for medicinal purposes into countries prohibiting their use — was arranged and approved by the representatives of all but two of the governments,— Turkey and Peru,— Turkey because of its extensive opium industry, and Peru because of its coca industry. It is thought that because its opium is of a high grade, such as is required for medical purposes, Turkey may be persuaded to yield, but in the case of Peru, the outlook is not so hopeful. The United States has been practically the leader in securing this righteous agreement by the principal governments of the world, through the recognition of the principle that if one government is determined to protect its subjects against a narcotic or injurious drug, other governments should respect that purpose. Curiously enough, the United States has failed, until quite recently, to appreciate the justice of such a principle as applied to its constituent States; for until the passage of the Webb-Kenyon Act no prohibition laws were effective against shipments of liquors from other States; and the constitutionality of that act has yet to be decided.

Bar Friedmann Treatment.— The New York City Health Board has adopted a resolution which will prevent the giving of the Friedmann treatment in New York City. The resolution reads: "*Whereas,* Certain tests of the efficiency and safety of an alleged cure for tuberculosis now being made in this city are now being rendered unsatisfactory, unscientific, and practically futile through the insistence of the originator of the alleged remedy on conditions which involve inadequate observations, inaccurate methods of administration, and the insistence on secrecy regarding the substances employed in some phases of the treatment, and *Whereas,* Evidence is already at hand to show that the so-called remedy does not fulfil the promises of efficiency and safety under which its use was first permitted in this city, but on the contrary, during its administration many patients have suffered serious and unduly rapid progress of their disease, therefore be it *Resolved,* That the use of living bacterial organisms in the inoculation of human beings for the prevention or treatment of disease shall be and hereby is prohibited in New York City, until after complete data regarding the method of use, . . . shall have been submitted to the board of health, and until permission shall have been granted in writing for the use of the same."

The Friedmann Treatment.— In a letter to the *New York Medical Journal* of July 12, Dr. George Gibier Rambaud says that Friedmann's vaccine is "simply a homogeneous emulsion of live and virulent tubercle bacilli in plain sterile distilled water. The germ was isolated several years ago from a turtle, and the culture has been maintained since that time by transplantation on artificial culture media, according to the usual procedure." The doctor believes that the Friedmann vaccine has merit. If so, it was unfortunate that Friedmann should have been so utterly unmindful of all professional courtesy as to take the course he did here in America. His actions were such as to lead to the inevitable conclusion that his only object was to turn his discovery into as many American shekels as possible.

Sanitation of the Panama-Pacific Exposition.— Dr. R. E. Woodward and Dr. J. D. Long, both of San Francisco and both members of the United States Public Health Service, have been appointed by Surg.-Gen. Rupert Blue as government officials to care for the sanitation of the Panama-Pacific International Exposition which will be held in San Francisco in 1915. With two such eminent medical experts at the head of the direction of the sanitation of the world's fair, that part of exposition activities which deals with the care of the health of the millions of visitors will be an exhibit in itself. But it is hoped that the government will make a sanitation display in a specially reserved building. The offices of sanitary directors to the fair have been created by the government at the request of the exposition directors, whose object is that there shall be on the fair-grounds every facility for caring for the injured and for keeping the buildings and grounds in a perfect sanitary condition. Dr. Long will have charge of the sanitary work, and Dr. Woodward will be in charge of the emergency hospital.

Infantile Beriberi.— A remarkable report on beriberi is made by the Surgeon-General of the United States in the 1912 report. Among the sucking infants of the Philippines is a disease that seems to be beriberi. In all cases the mothers had beriberi, either in an incipient or a well-marked stage. Fifteen of the infants were treated with an extract of rice polishings, the result being very marked and almost immediate amelioration or cure of the symptoms. With one exception, the infants were under three months old. "The child who had not passed urine for several days urinates five or six times a day freely. The edema disappears in a few days. At the end of a week or in less time, the patients are completely cured," with the exception of loss of voice, due, probably, to degeneration of the pneumogastric nerve, which would take some time to regenerate. The conclusion arrived at was: "One can hardly fail to be convinced that beriberi is due to a deficiency of some as yet unknown substance in the food, and that beriberi is produced in those children who received milk from a mother suffering from such a deficiency." This seems to be the final link in the chain of evidence that highly milled rice is responsible for the development of beriberi.

You Can't Afford to Miss This

"MAKE AMERICA CATHOLIC"

Number of the "Protestant Magazine"

OCTOBER CONTENTS

Striking Double Frontispiece
The Land of Promise
The Growth of the Roman Catholic Church in America
The Papacy Foretold in Prophecy—No. 2
Greater Accuracy Needed
Catholicism and Americanism
The Pope in Politics
Vaticanism in Germany, and in the United States
The Bible and the Believer
A Present Christ
"Rank Heresy"
Proving a Roman Catholic Doctrine
Liberty of Conscience a Hoary Error
Vatican Finance
The Gentle Art of Deceiving
Roman Catholic Statistics
Seeking the Tracks of the Devil
And Many Other Articles You Will Want to Read

20 copies at one time, $1.00; 50 copies at one time, $2.00
WRITE FOR AGENCY TODAY!

$1.00 a Year **10 Cents a Copy**

Address

PROTESTANT MAGAZINE, Washington, D. C.

The Watchman

YOU NEED ITS ENCOURAGING GOSPEL MESSAGES
ITS CONTENTS WILL INTEREST YOU

Who Should Subscribe

Every earnest seeker after truth
Every one desiring to know Bible prophecy
Every one wishing a presentation of the Bible in its purity

Ten cents a copy
Sample free
One dollar a year

A monthly magazine considering present-day problems in the light of the prophetic Word.

Gives the Trumpet a Certain Sound

Send two dollars with the names of two friends and we will place your name upon our subscription list free for one year.

Order through your tract society or

Southern Publishing Association,
2123 24th Avenue N., Nashville, Tennessee

Southern California's **SANITARIA** Medical and Surgical

ETHICAL **SCIENTIFIC** **PROGRESSIVE**

COMPRISING the LOMA LINDA, GLENDALE, and PARADISE VALLEY SANITARIUMS, covering the entire field of **rational medicine** and **scientific surgery.** These up-to-date, homelike Institutions of Health have helped to make Southern California the great Mecca for the tourist and health seeker.

These Sanitariums have qualified regular Physicians, skilful Surgeons, trained Attendants, graduate Nurses, and thoroughly equipped Laboratories. Their institutional apartments are models of convenience for the scientific administration of every modern **Physiological Therapeutic** treatment. The **basic principle** of their system of treating disease has been in constant successful employment for more than thirty-five years, and includes every modern **curative measure known** to **medical** and **surgical research.**

The professional staff of each of these Institutions gives special attention to **classified dietetics,** and the bills of fare are based on a complete return to **nature's first principles,** and to her **food products,** which are largely produced on the institutional estates and by their own food factories.

Besides the complete acquired facilities of scientific medical and surgical research, these modern "Homes of Health" offer to the traveler seeking rest, recreation, and health, under new scenes, the attractions of a **matchless climate,** both summer and winter. It is never too hot nor too cold for outdoor exercise and enjoyment. The very words "Southern California" bring to mind a smiling summer-land rich with tropical vegetation and heavy with the perfume of flowers. The mountain air mingled with the salt-sea breezes forms a live, invigorating atmosphere for those seeking health restoration.

Each institution has its own peculiar points of excellence to offer its patients and guests.

Address for "Illustrated Prospectus"

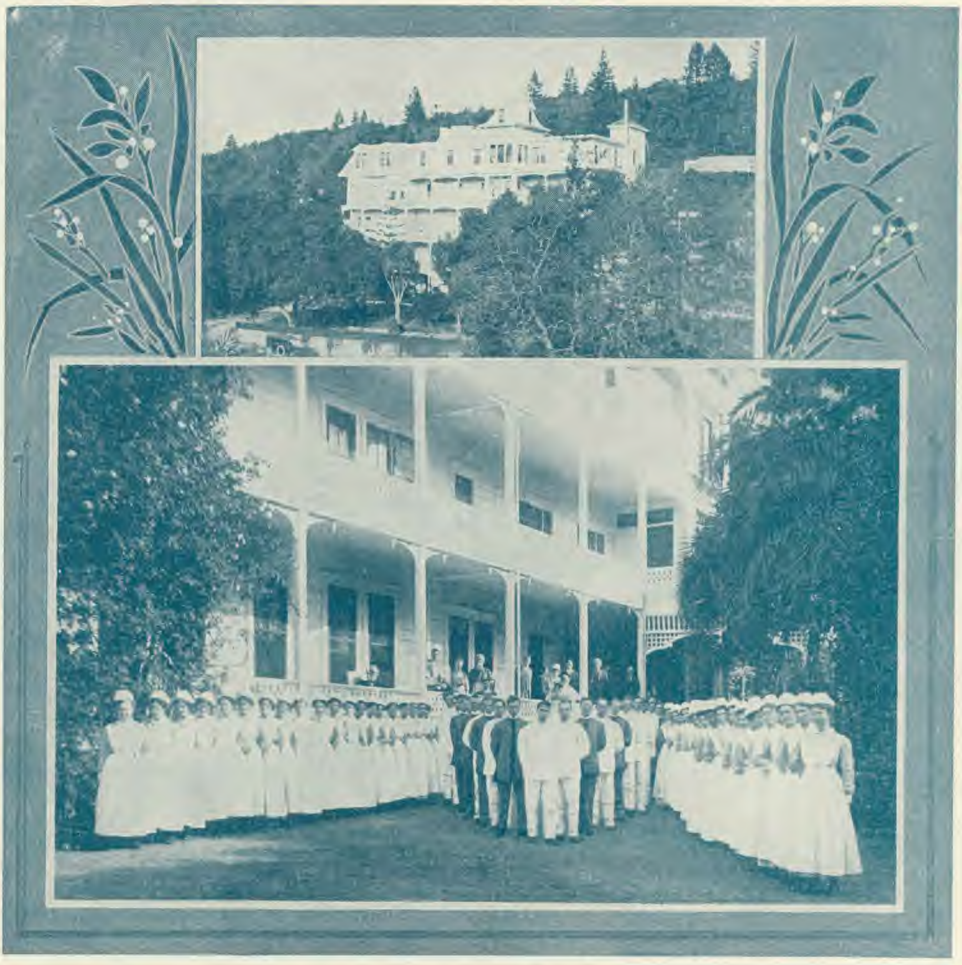
THE LOMA LINDA SANITARIUM - - - Loma Linda, California
THE GLENDALE SANITARIUM - - - - Glendale, California
THE PARADISE VALLEY SANITARIUM - - National City, California

Or the City office of these Institutions, 417 W. Fifth Street, Los Angeles, California

COME TO SANITARIUM

In California

WHERE HEALTH IS CONTAGIOUS



THE ST. HELENA SANITARIUM is one of the great institutions where all approved scientific therapeutic resources and agencies have been gathered together under one control.

Situated in a little hamlet bearing its name, this remarkable institution appeals to all, because of its accessibility, wealth of picturesque surroundings, magnificent and varied forest growth, extensive vistas of mountains and valleys, and sparkling mountain streams.

At this place is represented the maximum of organized medical efficiency. Here patients have the combined advantage to be derived from the favorable climatic conditions, close medical supervision, skilled attendants, pleasant, homelike accommodations, and appetite-creating foods.

HERE SICK PEOPLE GET WELL. They go away and tell others of what they have found. They return again and again to enjoy the unusual privileges afforded here.

We want to extend these benefits to you also. So come!

For further particulars and beautifully illustrated booklet " E," address—

ST. HELENA SANITARIUM :: :: Sanitarium, California