

MARCH 1948

Life & Health

63d YEAR OF
PUBLICATION

THE NATIONAL HEALTH JOURNAL



EF MUENCH

- ★ Maybe It's Your Kidneys
- ★ Temperature, Pulse, and Respiration
- ★ At Last You're Going to Build
- ★ Anxieties and Coronary Heart Disease
- ★ Spring Fashions in Vitamin-rich Recipes

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Coming NEXT MONTH

TOBACCO as a physician sees it. How to give up the habit. . . . A hospital staff member explains why meat is not served. . . . Practical advice on location of your postwar home. . . . Pain relieving light—infra-red. Benefits from and precautions about using these lamps. . . . X-rays and other things which help your doctor help you. . . . Headaches. Their significance. A discussion of this common ailment. . . . The best compensation.

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MARCH, 1948

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Sinking a long putt is a thrill—but there's many a slip between "the cup and the grip" if your hands are not steady.

Here are scientific facts you ought to know about the caffeine in both coffee and tea: Caffeine is a drug! It is a stimulant that acts on the brain and central nervous system. Also, in susceptible persons, caffeine tends to produce harmful stomach acidity. For some people drinking coffee or tea results in indigestion, nervous hypertension, and sleepless nights.*

*See "Caffeine and Peptic Ulcer"
by Drs. J. A. Roth, A. C. Ivy,
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PAGE 3

The Pulse of LIFE & HEALTH

► It probably is not work or fame or power that leads to coronary thrombosis, but it is more likely their misuse that brings on a chronic state of fear. The author gives you an insight into the intricate workings of the heart. Page 6.

► DIAGNOSING is like working a jigsaw puzzle. The more the doctor knows about your body symptoms the quicker he can arrive at a conclusion. Page 8.

► How can I raise oranges the size of grapefruit? Now your curiosity can be satisfied. Of course, there's work to it, but it's work that brings in dividends. The author lets you in on the secret of building a healthy soil. Page 10.

► Now's the time to bring your winter's recipe wardrobe in tune with spring. Until your garden brings forth fruit you'll have to dress up your menus with vitamin-rich foods. Page 13.

► ARE you planning to build a house soon? If so, you'll be interested in the series of articles beginning in this issue on "Building a Home." Page 14.

► TPR is common talk around a hospital. It can also be common in the home. Everyone should know how to take temperature, pulse, and respiration, and what their normal rates are. Page 16.

► HEATING compresses may sound old-fashioned, but they usually do the trick. Page 17.

► "Not my kidneys," is the usual response to the suggestion that kidneys might be causing distress in the stomach, head, or back. Because the kidneys eliminate waste products of the body, it is so important to keep them in good working order. Page 18.

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Some High Lights of Medical Advancement

THE strides made by medical science during and since the war have been truly remarkable. The whole new field of medicines called antibiotics was opened with the discovery and production of penicillin. This is a substance found in certain types of molds that is destructive to specific germs. In our fight against disease science is finding still other substances in soil and plant life that will destroy harmful bacteria and greatly aid us in the conquest of illness. Streptomycin—gramicidin—tyrothricin—and so the list grows, with new and better antibiotics on the horizon.

Streptomycin seems to have a definite place in the treatment of certain types of tuberculosis, a disease for which there has been no specific medicine up until now. It is found that penicillin can be used along with nose drops and inhalations in the treatment of nose, throat, and lung infections.

There have appeared some new and apparently helpful medicines for the asthmatic and for hay fever victims. We speak of benadryl and pyribenzamine. These medicines work by inhibiting the action of histamine, a harmful substance released by tissues in allergic reactions. As pointed out in a previous article, "Cures" for Asthma and Hay Fever, February, 1948, these are not cure-alls, but they are certainly helpful in controlling certain types of allergic illnesses.

In the field of vitamins it is interesting to note that many pharmaceutical houses are combining more and more vitamins, and now even minerals, in their vitamin products, in order to make up for what appears to be a prevalent lack in the American dietary. This leads us to wonder whether there are not real possibilities of obtaining all our vitamins and minerals out of our own home-grown gardens. Not that there are not times when vitamins are specifically indicated, but it looks as if we as a nation are being bottle fed from the cradle to the grave. It is our own personal belief that where the science of food and nutrition is understood and practiced we will see less evidence of borderline vitamin-deficiency cases. Then there will not have to be such reliance on synthetic preparations. In other words, you can get vitamin B out of a bottle, but how much better to get it from whole-grain foods, wheat germ, bran, and such like. We might say the same of any of the other vitamins and also the minerals.

In the realm of surgery one of the most practical developments has been a new type of sponge. Instead of having to stand by and watch the blood slowly ooze out and fill a wound, the surgeon can cut off just the right amount of this remarkable sponge, place it over the wound, and sew up the incision. This time neither he nor the patient need worry about a sponge's being sewed up in the abdomen, for this sponge is absorbable. Shock from loss of the vital life-giving fluid, blood, can now be combatted, thanks to the skill developed in producing, storing, and transporting blood plasma.

One of the most interesting and probably the most far-reaching of events in medical circles is the new emphasis being placed on the relation of the mind to the body, and in turn, the effect the body can have upon the mind. This field of medical study is given the name psychosomatic medicine. The term *psychosomatic* comes from two words, *psyche*, the mind, and *soma*, the body. The cause of many an illness is not primarily that one was born with poor arteries, defective kidneys, weak bones, or a stomach that just doesn't hold up. Rather, it is due to constant anxiety, worry, and fear. These wear down the life forces and invite high blood pressure, kidney disease, rheumatism, and ulcers. The com-

(Continued on page 32)

SMALL DOSES

► **HEARING** aids are used by some 600,000 people in the United States, and are needed by approximately 3,000,000 to 6,000,000 more.

► **ACCIDENTS** are almost three times as deadly as tuberculosis in the 15 to 19 age group alone, and nearly six times as deadly as heart disease, says the National Safety Council.

► **ANAGOLD** Old-Fashioned Lemonade is a handy drink to have around the house the year round. It is available in 46-ounce cans in ready-to-serve form. Ward off cold-weather ills with an extra supply of vitamin C.

► **ONE** cup of raw cabbage may well furnish nearly half of the day's vitamin C needs if the cabbage is prepared when fresh and served promptly. In addition, it adds to the day's supply of B vitamins, and the greener leaves offer vitamin A.

► **RESEARCH** is being carried on at the present time by medical schools of Harvard and Yale universities on behalf of the Eye-Bank for Sight Restoration, Inc., to discover a method to preserve corneal tissue for longer than 72 hours.

► **BAGASSOSIS**, a new rare disease of the lungs resembling acute bronchitis and pneumonia, is becoming a serious industrial hazard in sugar-producing areas, as reported in *Radiology*. The disease is caused by inhalation of dried bagasse dust.

► **PHYSICAL** medicine's exhibit at the A.M.A. convention in Atlantic City occupied approximately 4,000 square feet of space, and was divided into nine demonstration booths. It was organized by Frank H. Krusen, M.D., of the Mayo Clinic, assisted by 49 physicians and technical aides.

► **THE** earliest matches were made in Vienna in 1812, consisting of wooden splints topped with sulfur and tipped with a mixture of potassium chlorate and sugar. They were ignited by dipping into a vial containing shredded asbestos wet with sulfuric acid.

► **A** new selling point for milk is that because of its high calcium content it helps prevent tooth decay. Biochemists at the University of Wisconsin fed animals mineralized milk alone, and the animals developed excellent teeth. This diet was supplemented by heavy dosages of fermented sugar (a cavity-digger), and the teeth still remained healthy.

► **THERE** is still a long way to go toward keeping people alive and healthy, according to a study made by the Research Council for Economic Security, Chicago, which reveals these deficiencies. We need 60,000 more doctors than the 146,000 we now have. The number of nurses (of all types) is 317,800, and the number of dentists is 70,000. Both of these amounts should be doubled. There are now 674,930 beds in mental hospitals, 191,000 less than are required; 83,187 beds in tuberculosis hospitals, 44,000 to 75,000 less than are required; and 710,597 beds in general and all other hospitals, 195,000 less than are needed."

OUR COVER

Spring is here! The warm sun, gay flowers and singing birds all announce the advent of Spring. The invitation to the out-of-doors grows stronger, more compelling. Who can resist it? Joseph Muench has captured for our cover picture the colorful touch of Spring as seen in the Antelope Valley on the edge of the Mohave Desert in Southern California.



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"SCALLOPS"

(Vegetarian)

a brand NEW food for your menus -

a new meatlike food from BATTLE CREEK

"SCALLOPS" answer that craving for a food that's just a little different . . . for something new in the way of a taste treat . . . try them . . . you'll find their distinctive flavor matches that of the choicest sea foods.

Try "SCALLOPS" french fried to a golden brown and topped off with a touch of tartar sauce. They're delicious. Try "SCALLOPS", cooked with mushrooms or baked into a tender pie. They just seem to melt in your mouth. Here is a food that the whole family will enjoy. "SCALLOPS" make an ideal treat when neighbors drop in or for that little snack or luncheon.



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IT'S ECONOMICAL



You get a full-sized can of "SCALLOPS", along with two other famous Battle Creek products—PROTOSE + A Vegetable + A Savita. SAVITA—A vegetable, meatlike flavoring for Soups, Gravies and Sandwiches. Generous 2½ oz. jar. It's concentrated.

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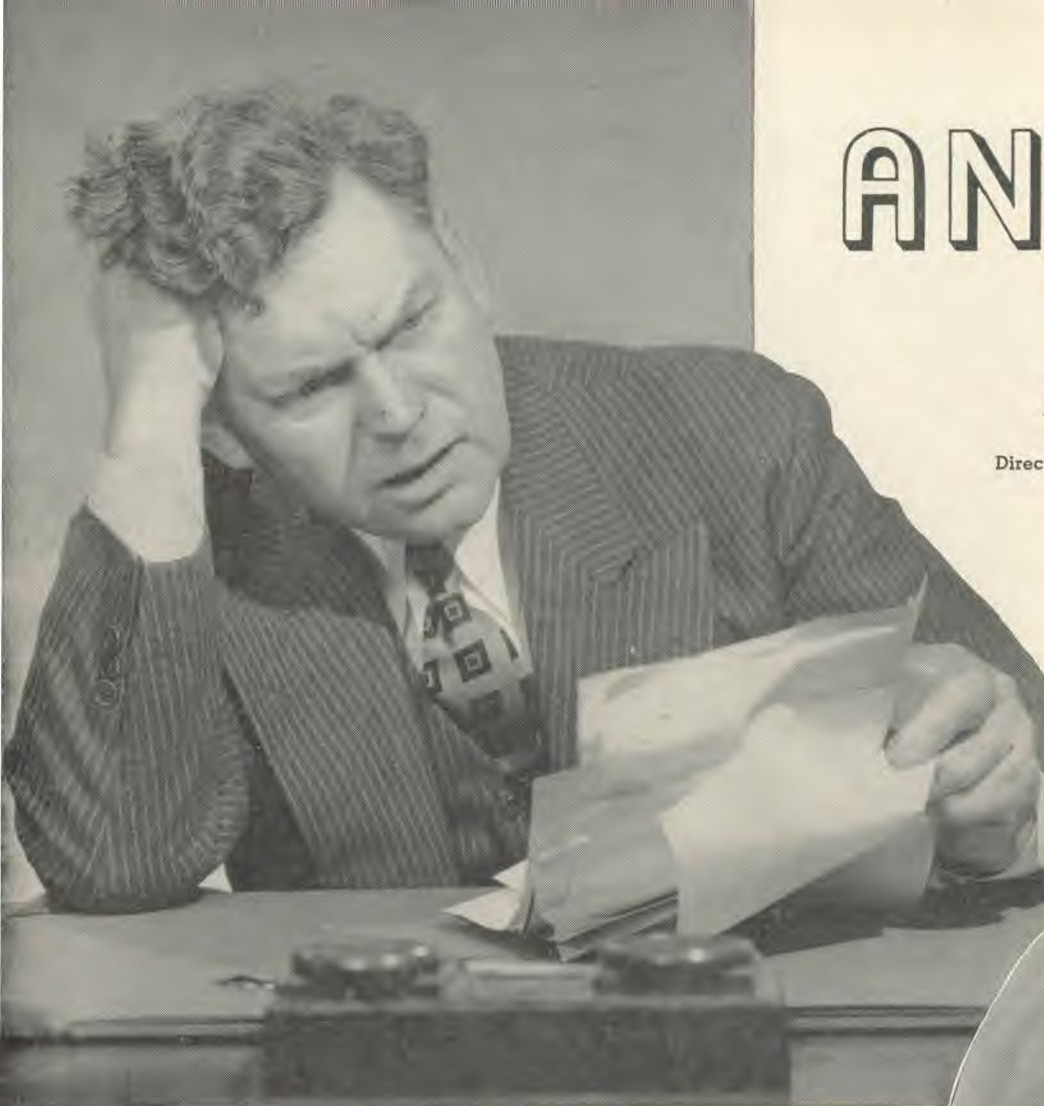
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Here is my dollar. Please send me, prepaid, my package of "Scallops" along with Protose and Savita.

ANXIETIES

 **W. W. BAUER, M.D.**

Director, Bureau of Health Education, American Medical Association



EWING GALLOWAY

In These Times One Realizes the Tremendous Importance of Worry, Insecurity, Impatience, and Impulsiveness as Causes for Diseased Organs. To Take No Thought for the Morrow Was Intended as Advice Against Worry, a Reassurance Against Insecurity, and Counsel Against Impatience and Impulsiveness

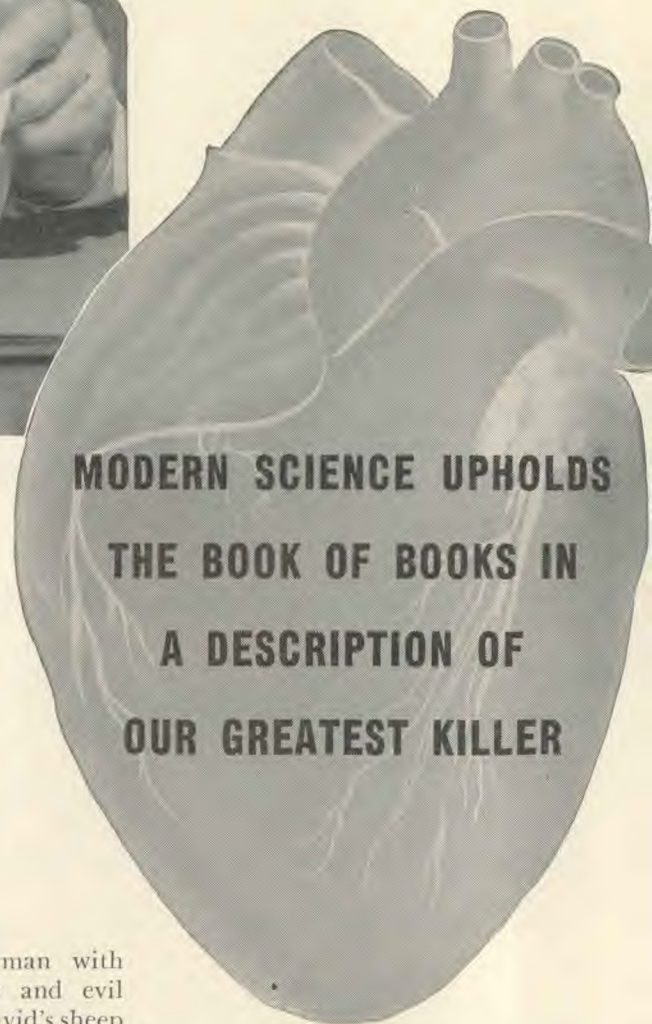
IN THE twenty-fifth chapter of the first book of Samuel it is written: "And Abigail came to Nabal: and, behold, he held a feast in his house, like the feast of a king; and Nabal's heart was merry within him, for he was very drunken: wherefore she told him nothing, less or more, until the morning light. But it came to pass in the morning, when the wine was gone out of Nabal, and his wife told him these things, that his heart died within him, and he became as a stone. And it came to pass about ten days *after*, that the Lord smote Nabal, that he died."

This, according to Dr. Don Carlos Peete, of the medical school of the University of Kansas at Kansas City, Kansas, is a true description of one of the most modern diseases of the heart, coronary thrombosis with angina pectoris. In a remarkable exhibit at the recent centennial meeting of the American Medical Association, Dr. Peete sets forth a series of facts, based on four Scriptural injunctions, which constitute a most amazing liason between the ancient Scriptures and mod-

ern psychosomatic (relationship of mental processes to functioning of the body) medicine. His arguments, presented here with his permission and verified by him, are as follows:

First, as to the disease which afflicted Nabal, we must go back into the earlier verses of the chapter from Samuel, to find that Nabal was a rich man with many sheep, but churlish and evil in his doings. He sheared David's sheep as well as his own, and when David sent young men to protest in a friendly way, he received the messengers of David with harsh words and rude rebuffs, and turned them away without the accustomed meed of hospitality so characteristic of the Orient. Even Nabal's young men, his retainers, referred to his treatment of David's messengers as that of a "son of Belial, that a man cannot speak to him." Nabal was afraid of the vengeance of David. He

lived in a state of insecurity and worry, exactly the frame of mind that underlies so many lives today, when perplexity and uncertainty cause men's hearts to fail "them for fear." Nabal sought refuge in drunkenness. Not wealth and social position as such, nor work, nor fame, nor power, lead to coronary thrombosis, but their misuse, leading to a chronic state of fear, Dr. Peete emphasizes,



**MODERN SCIENCE UPHOLDS
THE BOOK OF BOOKS IN
A DESCRIPTION OF
OUR GREATEST KILLER**

and Coronary Heart Disease

Like many another irascible old man, Nabal had a wife, Abigail, with more sense than he had, and she went out to meet David as he progressed with his troops to take vengeance upon Nabal—in fact, to wipe him out. She succeeded in diverting him from his vengeance, and then returned to find Nabal in a drunken stupor. What took place thereafter has already been told.

Nabal's "heart died within him." That is exactly what happens when coronary thrombosis takes place. A portion of the heart muscle, large or small, depending upon the size of the coronary artery branch involved, dies, because the plugging of the artery deprives it of food and oxygen. If this tissue death is small and not located in a vital area, it may not cause immediate trouble. But if it is large, or situated where it interferes with the automatic heart rhythm, or permits a rupture of the heart, then it may be fatal at once. The typical picture, known to every doctor, and all too familiar to the patient, is angina pectoris. Nabal "became as a stone." That is to say, when the pain at the heart clutched him, he was unable to move, frozen in terror, filled with the sense of impending dissolution.

But that is not all. Nabal was the kind of fellow who gets coronary sclerosis. He was rich and great, but he was churlish and mean, selfish and greedy, and people said the devil possessed him—he was a son of Belial. Also he was a heavy drinker, perhaps as a refuge from himself.

Coronary thrombosis often results in sudden death from an episode of fear. A modern instance is that of the former Congressman in California who died as a result of his anxiety over the loss of his grandchild in the mountains. The boy was found, safe, but the old man's heart would not endure the strain of his grief and worry.

It is written in the book of Proverbs, the ninth chapter and the tenth verse: "The fear of the Lord is the beginning of wisdom." For many years after the last of the Scriptures was written, there was little knowledge of the action of the heart or of any other part of the human body. Beliefs that seem strange to us were commonly held among in-

telligent persons, and, indeed, among the scientists of the centuries immediately preceding and following the advent of Christianity. Scientific fear of the Lord, according to Dr. Peete, consists in learning about natural phenomena as they are, not as someone has conjectured them to be.

The doctrines of the humors, "water, blood, yellow bile, and black bile," to which all disease was attributed, went hand in hand with scientific ignorance, which observed the bodies of pigs and how they were constructed, and reasoned forthwith that man's structure must be similar. It must be admitted that they may have had some reason for such conclusions,

but they were wrong. Galen, greatly revered authority whose errors blocked progress for almost twelve centuries, published a fantastic diagram showing where the blood went and how it got there. Others of the early writers whose scientific method consisted mainly of copying somebody else consequently made little progress. Only when scientific study began to be directed along the lines pioneered by Vesalius and the other anatomists who dissected human bodies even when they had to steal them, did progress really show signs of proceeding in the direction of the modern. Says Dr. Peete, "It is written, in the eighth

(Continued on page 28)

Philosophy of Life

A SONG IN THE NIGHT

By D. A. DELAFIELD



The quietness of the evening was broken by a sudden clap of thunder overhead. We were seated in the living room and quite unprepared for the change in weather. One deep-toned rumble was followed by another, while lightning flashed and heavy clouds sailed through the mad sky, driven by a thirty-mile wind. Then the clouds opened to pour their heavy load of rain upon the dark earth, and the elements struck up a symphony of sound that lasted for half an hour or more.

The din and confusion of the evening was unpleasant but one little incident I will never forget. A wood thrush sang for us in the trees near by, while the thunders pealed and the vivid lightning flashed and crackled above us. The elements held no terror for this happy bird. I can still hear the rich, clear, full, happy notes sounding in the confusion and blessing us with the ministry of peace. In the midst of the worst storm on the darkest night the wood thrush could sing its tuneful song.

We mortals—all of us—may learn to sing in the midst of trial and affliction if we are willing to learn the song of faith. And we may be sure that God will teach us this song even though we must learn it in the night. We can all learn better then. For all of us there are disappointments and heartaches. For some there is the bed of pain or the isolation of the shut-in. For others there are poverty and loneliness. We may be sure that whatever comes our way in the night is the voice of God teaching us life's sweetest melody. To the selfish ear it may sound like a series of discordant notes. But to the trained and sensitive ear of faith it is the music of heaven. Something good and permanent will come of all this disillusionment and fear. Something great and beautiful will follow the agony and despair of those dark moments spent alone. But we must learn to trust and to believe that "all things work together for good."

Affliction will teach us this song or drive us to despair. We must each decide what shall happen when and if we must enter the night. There is something better beyond for which the discipline of life prepares us, but it will be too late to learn to sing our song over there, for all will be day in that distant land.

Here and now in this practical, workaday life we are to catch the strains of heaven's song of faith and learn to sing with the great and the good of all ages. May we not fail of this lesson.

"In the full light of day, and in hearing of the music of other voices, the caged bird will not sing the song that his master seeks to teach him. He learns a snatch of this, a trill of that, but never a separate and entire melody. But the master covers the cage, and places it where the bird will listen to the one song he is to sing. In the dark, he tries and tries again to sing that song until it is learned, and he breaks forth in perfect melody. Then the bird is brought forth, and ever after he can sing that song in the light. Thus God deals with His children. He has a song to teach us, and when we have learned it amid the shadows of affliction, we can sing it ever afterward."

THE DOCTOR TURNS
DETECTIVE TO AR-
RIVE AT A DIAG-
NOSIS

ARTICLE
THREE



EWING GALLOWAY

*Everybody
Loves*

A MYSTERY, *but-* *Not When It's You and You're Sick*

PHILIP A. CARPENTER, M.D.

THE science of diagnosis holds the highest place in medicine, of which it is the most useful and most difficult part. The determination of the true character of each type and variety of disease is the foundation of curative treatment. Without an exact and precise diagnosis, theory is always deficient and practice uncertain."

Thus wrote a very learned member of the Royal Academy of Surgeons of France more than 150 years ago as an introduction to a profound treatise dealing with a difficult problem of surgery. And all physicians of merit from that time to this would agree that this statement is close to the very heart of good medical practice. Today much time is given in the training of physicians in emphasis of this most important phase of diagnosis.

What is the meaning of *diagnosis*? What part does this science play in the treatment of my condition?

This term may be defined as "the art of recognizing disease from the symptoms it produces." And it is obvious

that in order to treat intelligently any given disease, we must first recognize its exact nature.

It is this process of diagnosis of disease which is not always well understood by the patient, and almost invariably the individual afflicted with the disease wants to begin treatment at once, so he can be well. This is perfectly natural, for we are all anxious to be rid of our aches, pains, and discomforts as soon as possible. However, it is vitally important for the patient to recognize that it is of primary importance for the physician to be sure just what disease he is going to treat. Diagnosis takes time and thought, particularly in the more chronic diseases of the body. Therefore, do not demand undue speed in the matter of beginning treatment. True, a thoughtful physician will do all in his power to relieve distressing symptoms, provided such relief does not in itself obscure the true nature of the disease.

How does a doctor reach a correct diagnosis in a given case?

The steps in the process may vary from one case to another, but there are several fundamental principles in the matter of diagnosis. Usually the first step is to inquire of the patient (or of the parents in the case of a sick child) how the illness has manifested itself. What symptoms has it produced? How have you been feeling? Often these facts, clearly stated, are sufficient to make a diagnosis. In many of the difficult medical problems a careful history of the condition is of far greater value than the medical examination. Therefore, do not feel impatient when the physician begins to inquire into the various symptoms of which you complain. It is the first step in diagnosis. The patient can do much if he will try to recall with exactness how the various symptoms began and in what order. He should try to recollect how they have progressed or changed in their character. The doctor will be helped to know what you have found to make the condition better or worse. Ofttimes just simple facts are helpful.

The next step involves a physical examination. This includes a careful scrutiny of the body surface and its openings. An examination is made of the internal organs, such as the heart, the lungs, the abdominal organs, and so forth. Some bodily changes may be evident to the doctor simply by careful inspection of the various parts of the body. He may also learn something by feeling (*palpation*, the doctor calls it) the skin or underlying parts. Appendicitis, for example, may be suspected by feeling the increased rigidity of the muscles of the abdominal wall, which are trying to keep the diseased part quiet. Sometimes the physician is obliged to thump over (*percussion*, to the profession) a special region to see whether things sound as they should. This type of examination is particularly necessary in diseases of the heart and lungs. In pneumonia, for example, the lungs become consolidated with the disease, and the percussion note becomes dull in contrast to the normal resonance. This part of the examination requires much practice and experience to be used efficiently. Finally, the doctor may use a stethoscope to listen (*auscultation*) to the actions of the various organs. Again, it is in disease of the heart and lungs that this instrument is used to greatest advantage, although it may be utilized under other circumstances, such as the determination of the blood pressure. Taking the temperature and the rate of the pulse and respirations is also a part of the routine examination. Many other kinds of instruments may be used, particularly by specialists, in making a diagnosis.

After this the physician not infrequently wishes to secure the help of certain laboratory procedures. Sometimes he wishes to know whether there are any changes in the urine (signifying disease of the kidney or bladder), or whether there is an increase in the white cells of the blood (as in cases of certain types of infection). The presence of syphilis in the system may be determined by an examination of the blood, although blood may be taken (from a vein in the arm) for many other types of laboratory tests. A basal metabolic rate, an X-ray of various portions of the body, or perhaps some more complicated examination, such as a tracing of the heart or of the brain waves may be necessary in making a correct diagnosis.

Sometimes, but less often than ordinary laboratory procedures, very tech-

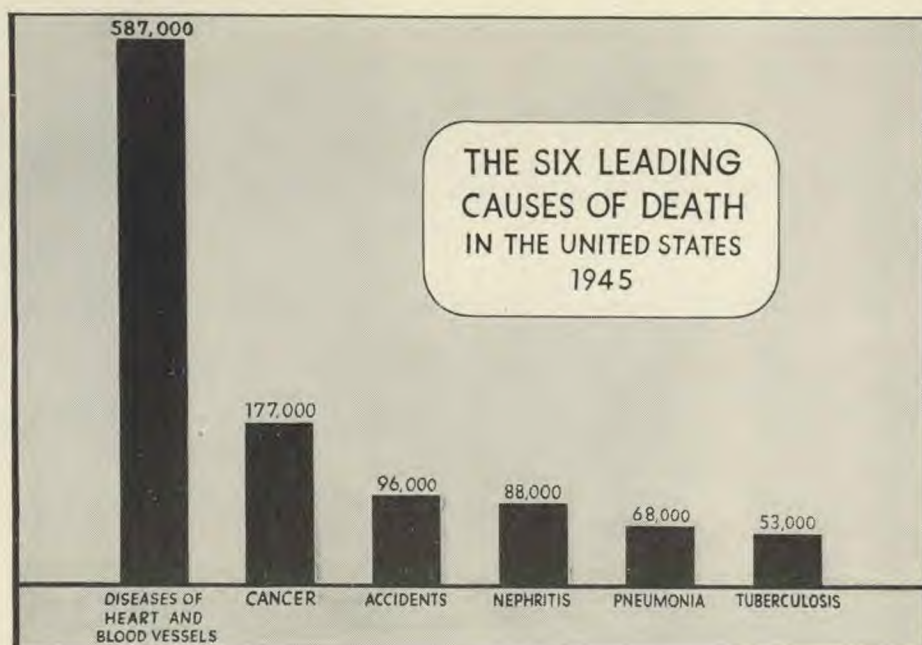
nical examination may be necessary to arrive at a correct conclusion in a given case. This is especially true in investigating the state of the internal organs of the body, like the stomach, bowel, kidneys, lungs, or brain. These procedures may have to be carried out in an operating room, so delicate and so technical are they. Such examinations, as a rule, require the attention of a specialist who is skilled in their practice, and who understands the underlying problem which needs to be solved.

This all goes to show that diagnosis is not always a simple matter. At times it takes days, or even weeks, to come to a correct conclusion as to the cause of the disturbing symptoms. And yet it is vital to the proper treatment of a given case that the physician know as nearly as is humanly possible just what it is he is trying to treat.

Sometimes this process of diagnosis may be very costly. Patients are often inclined to complain that they are called to spend so much money on diagnostic procedures. Yet it may be the shortest and cheapest way out of their particular trouble. The writer has been consulted in many cases in which the patient had spent literally hundreds and thousands of dollars in treatment with no definite effort having been made to reach a correct diagnosis. Often when the correct diagnosis was finally established, the solution was simple. Remember, the money spent on treatment before a diagnosis is reached may be completely wasted. The motto should be, "Sure diagnosis first, even though it sometimes may be arrived at slowly."

Perhaps the hardest part of diagnosis, as far as the patient is concerned, is the period of observation which is sometimes necessary before a complete diagnosis can be reached. And sometimes there is just no other way. It may be necessary to let the disease develop itself more fully in order to be sure of its nature. This waiting process is not used whenever such waiting endangers the life or well-being of the patient. It is under these circumstances that an operation for direct observation sometimes is advisable. It is safer to perform an operation than to wait too long for diagnosis of a serious disease. A competent physician and his consultants are to be heeded when even such strenuous measures are advocated, for they are considering primarily the welfare of the patient. So if this is necessary, co-operate fully with the physician in reporting the character of any previous symptoms and the appearance of any new ones. These facts may be the clue to the entire problem.

In view of all this, do not be impatient when treatment is not immediately forthcoming. Diagnosis must precede any curative type of treatment. The process of arriving at a diagnosis is like solving a jigsaw puzzle. The physician may not need all the parts to see quite clearly the picture of the disease, but the more of them he has available, by whatever method they may be obtained, the better he will be able to understand what is going on in the body of the patient. By the same token the more exact will be his application of treatment, and the sooner he will be on the road to health.



Our HOBBY SECTION Presents

HOW can I raise oranges the size of grapefruit—oranges that contain from five to seven times as much juice as their average California or Florida prototypes?" And what is still more important, "How can I raise oranges of superior flavor and keeping quality, like yours?"

These are some of the questions that have been pouring onto the desk of the "Hobbies" editor of LIFE AND HEALTH ever since the picture of that giant orange appeared last September.

Our good editor was overwhelmed with all these letters and questions about growing big oranges. She appealed to the chief, and he in turn has written me a letter, requesting a story. "Herbert," he says, "tell us how you did it." So now I can "let the cat out of the bag" for the benefit of posterity and reveal this secret (discovered some two years ago in my own little backyard garden and fruit orchard), the secret of building a living, healthy soil faster, perhaps, than ever before in the history of agriculture. "Biological soil building," I call it. But what has all this got to do with health? After all, LIFE AND HEALTH is a medical journal, and what possible connection can there be between this thing called biological soil building and healthy people?

On this point it is interesting to note

Biological Soil Building



The Story of an Orange—How It Grew

By HERBERT CLARENCE WHITE

Director of Agricultural Research, Feather River Sanitarium and Hospital

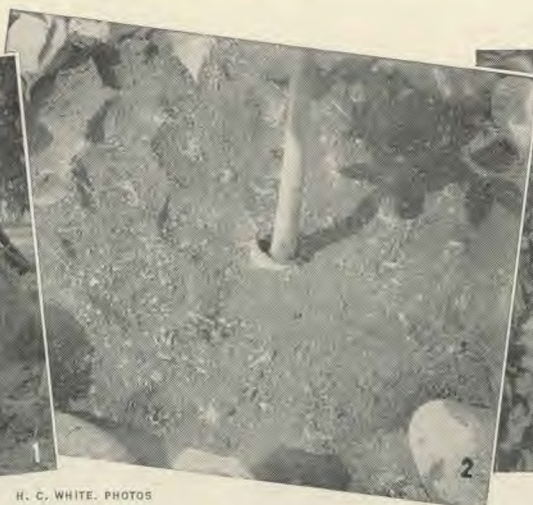
that there is a growing conviction on the part of many of our most respected physicians and surgeons, that soil fertility and human health have a very close and intimate relationship. Increasing medical testimony indicates that soil health and physical, mental, and even spiritual health are closely related. Just how close this interrelationship between healthy soil, healthy plants, healthy animals, and healthy men and women is, will be the object of study, experimentation, and research of the medical and agricultural staff of the Feather River Sanitarium

and Hospital of California, and the newly created Soil and Health Foundation in Pennsylvania. These men of science have dedicated their lives and the facilities of their respective institutions to the task of conducting a scientific, painstaking study of this vital and all-important subject.

But to get back to the subject of oranges. It is interesting to observe that in many groves the size and color of our oranges during the past decade or two have been steadily declining. It has come to the place where the multi-million-dollar citrus industry now ad-



Constructing a Compost Heap of Alternate Layers of Vegetable Wastes, Wild Oat Hay, Spoiled Alfalfa Hay, and Animal Manures. This Heap Will Make About Eight Tons of Rich, Black Loam



Removal of Rock Mulch Reveals Almost Total Disappearance of Heavy Three-Inch Leaf Mulch. The Tin Can Keeps Earthworm Castings and Leaf Mulch From Contacting Tree Trunk Above Graft



It Takes Only Three Minutes to Replace a Three-Inch Leaf Mulch After Removing the Rocks. Live Oak Leaves Were Used for This Summer Mulch. Leaf Mulch Does Not Contact Tree Trunk

vertises the benefits to be derived from small oranges rather than to boast of the superior size, color, and quality of their fruit. "How are the mighty fallen!" And what has brought about this change in the size, color, and keeping quality of our citrus fruits?

This question can be answered in just two little words—*sick soils!* Faulty agricultural practices—the use of a substitute for soil fertility, and the resulting necessity of employing all manner of lethal weapons to fight so-called pests—all these have slowly but surely depreciated the power of our soils. In other words, our once mineral-rich soil has been mined. Robbed of its life-giving elements, the soil refuses to produce fruit of even normal size, color, or quality. Nature is striking back at this murder of our most precious possession—our living soil.

According to Dr. Ehrenfried Pfeiffer, famous Swiss agronomist, *humus* is the basis of soil fertility. A humus-filled soil is a living soil—teeming with microscopic life, beneficial bacteria, molds, algae, and most important of all, earthworms. One great scientist declared, "Earthworms are the *intestines* of the earth. No earthworms—no tillable, fertile soil!"

To restore fertility, then, we must restore the humus content of the soil, and put into operation nature's wheel of life. This we can do through some very simple procedures. First of all, there is that all-important compost heap. (See plate 1.) According to such an eminent agronomist as Sir Albert Howard, scientifically made compost humus is at once the very best type of complete fertilizer and soil conditioner. It not only provides much-

WHICH IS THE BETTER BUY?

Fresh oranges and grapefruit, or canned orange or grapefruit juice, or the blend of the two are excellent buys today. Look at the charts below to see how much better to buy a fresh orange or can of juice rather than orange pop or other soft drink.



—Maine "Health Notes," Mar., 1947.

needed plant nutrients but ensures ideal living conditions and an abundance of good food for the greatest friend of mankind, the lowly earthworm.

The second step for sick soils is the use of mulches. My dictionary defines a mulch as "a layer of dried leaves, straw, etc., used to protect the roots of trees and plants." Leaves especially, when used as a mulch, not only serve as a protection to the roots, but also provide one of our most valuable sources of minerals and other valuable plant food. (See plate 3.) The U.S. Department of Agriculture yearbook, called *Soils and Men*, on page 516 states, "Leaves alone, when dry, are about twice as rich per pound in plant food as barnyard manure." Other scientists tell us that up to one third the weight of many leaves is pure minerals in colloidal form.

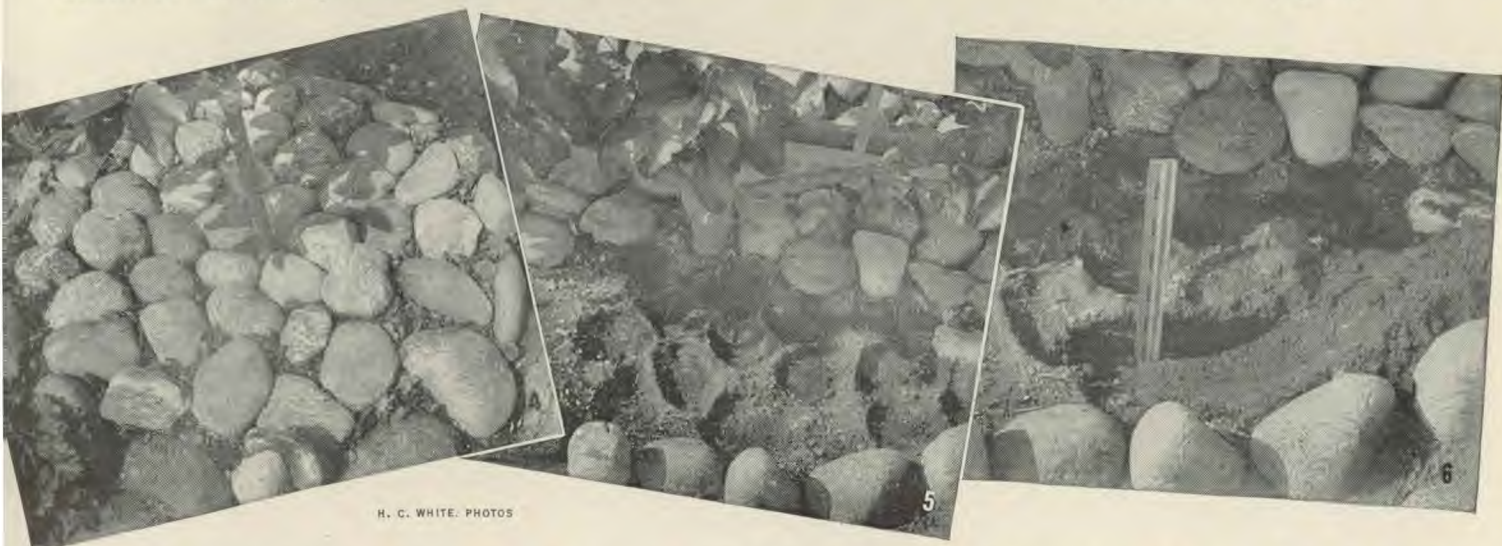
Another important supplementary measure in this interesting process of building life into our depleted, humus-starved soils, is that of sheet composting. Here no compost heap, with its alternate layers of plant wastes and animal manures, is used, but a cover crop is grown—preferably a legume—and then a large quantity of barnyard manure (up to forty tons per acre) is spread over the green cover crop, and the whole is disced into the upper six inches of topsoil.

The breakdown of these mixed animal and vegetable wastes, taking place in the warm, aerated, bacteria-filled upper zone of the soil is rapid, and within a few months all signs of both cover crop and barnyard have completely vanished. For large acreages this method of composting is by far the most popular and practical, and the cost is reduced to a minimum.

In the fruit orchard, however, we do not recommend cultivation of any kind. The life of any soil is in the upper four to six inches. Here the tiny hairlike feeder roots are working. Here is where they obtain their very best nourishment. One does not need to be an expert in agricultural science to understand that to disturb or destroy these tiny surface roots is like killing the goose that lays the golden egg.

In our little orchard we let the earthworms do this important work of cultivation for us. And what an efficient job they do, as they cultivate, aerate, and triturate our soil. In addition to all this they act as distributors of plant food, carrying "downstairs" those wonderful leaves, which under the action of the worm are converted almost over-

(Continued on page 30)



H. C. WHITE. PHOTOS

It Requires About Seven Minutes to Replace the Rock Mulch. Rocks Do Not Contact the Tree Trunk. Topsoil Is Not Disturbed, as Tender Feeder Rootlets Are Working in the Mineral-Rich Castings

Partial Removal of Rock Mulch Reveals No Leaves Under the Stones but Some Litter Between Them. Note How Earthworms Have Thrown Up Their Castings Between the Rocks

Three Inches of Castings in Four Months—a Near Miracle in Top-Soil Building! Note the Velvety-Black Castings Thrown Up on the Right of the Hole



The Dietitian Says...

Conducted by LUCILLE J. GOTHAM, Dietitian

This department serves as an aid to our readers in their dietetic problems. For information regarding some particular food or diet, address: The Dietitian, LIFE AND HEALTH, Takoma Park, Washington 12, D.C. Enclose stamped, addressed envelope for reply. This service is available only to subscribers.

Fruit Juices and Teeth

Is it possible fruit juice could injure the teeth?

Recently publicity has been given to research appearing to show that too much of a sour-tasting juice may tend to wear away the enamel of the teeth. Dr. Daniel Ziskin, of the Dental College at Columbia University, has drawn attention to lemon juice and grapefruit juice as possible destroyers of tooth enamel. He says, however, that he believes it is all right to take one glass a day of fruit juice.

The *Journal of the American Dental Association* has published an article with pictures showing injury to the teeth by taking hot water with lemon juice in it, by sucking lemons, and by using cola beverages. This article was submitted by Doctors Stafne and Lovstedt, of the Mayo Clinic. They mention that the teeth of some individuals are for some reason injured by the use of the acids and others are not. They draw attention to the fact that the damage is greater when the juice is taken between meals. Dental authorities have said it is all right to use orange juice freely, as it is less acid than the lemon or grapefruit juices. The wearing away of the teeth is greater when they are brushed with a stiff brush right after having been softened by taking the acid food. Diluting fruit juice with water, especially when tart, would seem wise. You can safely use the refreshing and nutritious lemon and grapefruit juice in making fruit punches and recipes where the acid juice is mixed with other foods. It is important to remember that hard candies and soft drinks can also injure the teeth.

Unfermented Bread

Kindly send me a recipe for 100 per cent whole-wheat bread. And are there recipes for bread which do not use yeast or baking powder? I mean a bread like the Europeans used to make when there was no aiding agent available.

The following recipe for 100 per cent whole-wheat bread is my favorite. It is very successful if you have high quality whole-wheat flour available. The best flour is stone ground and made of hard wheat. The recipe for salt-rising bread is just as it appears in an old cook book called

Hygienic Cook Book. This bread is made without adding yeast or leavening. It makes use of the yeast in the air (wild yeast). It is wholesome if well baked.

My Favorite Whole-Wheat Bread

Dissolve 1 cake yeast in $\frac{1}{4}$ cup of lukewarm water (preferably soft water), and add 2 tablespoonfuls of molasses, 3 cups warm water, 1 or 2 tablespoons of fat, 1 teaspoon of salt, 6 or 7 cups flour. Let rise, put in loaves, let rise. Bake 70 minutes. Have the oven at 425° for about 10 minutes and lower to 300° for an hour.

For a change, honey may replace molasses; and caraway seed, nuts, or dried fruit may be added occasionally.

Salt-rising Bread

1 cup white corn meal
 $\frac{3}{4}$ teaspoon salt
1 pint boiling water
1 pint lukewarm water
 $\frac{1}{2}$ tablespoons sugar

Put the corn meal in a stone jar, add sugar and salt, and scald with the boiling water; then add the lukewarm water and beat in gradually enough white flour (warm it first in the oven) to make a medium thick batter. The jar must be perfectly clean and sweet; before using, scald it for a few minutes on the stove with boiling water. Also scald the spoon or beater each time before using.

Set the jar in a vessel of water at 115° F. Do not make it hot enough to scald. Put a cover over the top of it and keep it at the same temperature, where no draft will reach it, for about four hours, or until the sponge begins to foam; then stir in enough warm flour to make a thick batter, and let rise three hours, or until it is full of air bubbles and has doubled its bulk. Beat it down two or three times, and watch it closely, as it will rise very suddenly.

Pour the sponge in a warm bread pan; stir in warm flour a little at a time and knead lightly into a soft dough. Make into loaves and place in oiled bread pans. Keep in a very warm place until very light, or about three times their original size (about one hour), then bake in a moderately hot oven one hour or longer, according to the size of the loaves.

Graham or whole-wheat flour can be used with the white flour, preferably one fourth of the coarse flour.

The secret of success with this bread is good flour and keeping it warm during the entire process. This bread does not spoil during the hottest weather, and the older it is the better it tastes.

We Apologize

On page 16 of the January issue the chart giving "Vitamin Content of Commercially Canned Foods," the first column should have read "C" and the second "A".

Suggestions for Specific Food Allergies

My brother has had arthritis for a number of years. He seems to be allergic to several foods, including wheat products, beef, and oats. His doctor is treating him very successfully for arthritis. He must keep his diet free of the things to which he is allergic. Could you please send some menus?

Wheat, oats, and beef are not essential foods; that is, they may be safely replaced. Rice, corn, and rye may replace wheat and oats; and soy and potato flours will be fine as a substitute for wheat flour in many recipes. The following menus are simple, but adequate, and the other members of the family may use the same foods:

Wheat-Free, Beef-Free and Oat-Free Menus

Breakfast—pineapple juice, rice flakes, milk or cream for flakes, and beverage.

Dinner—cottage cheese, baked potato, squash, sliced tomato, milk.

Supper—popcorn with milk and fruit sauce such as apple or apricot.

Breakfast—sliced peaches, corn flakes, milk or cream for flakes, and beverage.

Dinner—omelet, riced potato, stewed tomato, celery, rye krisp, milk.

Supper—bean soup, vegetable salad, rye krisp, melon, milk.

Breakfast—grapes, corn meal mush with raisins, milk.

Dinner—Spanish rice, creamed celery, grated carrot salad, milk.

Supper—potato and onion soup, popcorn for soup, fruit salad, milk.

Foods for Vitamin-B Complex

Is it the vitamin-B complex that one needs for nerves? If it is, will you please tell me which foods to eat to get these vitamins?

Steady nerves depend on vitamin B; that is certain. They also need plenty of all the nutrients and seem to be very dependent on calcium, lecithin, vitamin A, and iron. Many find that taking extra milk, greens, and brewers' yeast benefits the nerves. These three foods supply generous amounts of the most essential elements. The milk is rich in calcium, and provides some lecithin, vitamin B, and

(Continued on page 27)

WIND-SWEPT skies with drifting clouds and bobbing kites, robin redbreasts parading on the lawn, buttercups and jonquils blooming in the meadows—all proclaim that March has come and that the first day of spring will soon be here.

Although young spring is ready to dash into view, fresh fruits and vegetables from our gardens have not yet appeared to appease the lagging appetites that are longing for them. Surely there must be a solution for this awkward interlude. And there is! We have donned new spring outfits to herald the coming season. Let us now make over winter's recipe wardrobe so that it too will be in new garb. For a basic pattern include an abundance of thiamin-rich foods (vitamin B₁) to perk-up and ruffle that weary appetite. Remember, vitamin C also is likely to be low at this time of the year, and it should be fitted into the style of our meals.

What material will we have to work with in making over this recipe wardrobe? Thiamin will be found largely in yeast, nuts, legumes, whole grains, dried fruits, and wild greens such as the dandelion. If frozen foods or citrus fruits cannot be conveniently purchased, canned tomatoes, tomato juice, Irish potatoes, and raw cabbage will help supply vitamin C.

Let us weave some spring fashions in food into the thread of our menu planning, and try cooking a few.

Mock Chicken Soup

- 3 medium potatoes
- 1 medium onion
- 2 stalks celery
- $\frac{1}{2}$ No. 2 can asparagus
- 2 tablespoons glutenburger
- 2 tablespoons flour
- 2 tablespoons butter
- 1 quart rich milk
- Salt

Mince onion, chop celery, and dice potatoes small. Put in heavy kettle and just cover with water. Cook covered until almost tender. Cream butter and flour, add a little milk, and warm juice from vegetables. Stir until smooth. Add milk to soup, and heat. When hot, add butter and flour mixture, and stir while heating for two or three minutes. Add asparagus cut in small pieces, and glutenburger. Turn fire low and simmer for a few minutes. Serve.

Cress and Dandelion Salad

- 1 cup water cress
- $\frac{3}{4}$ cup young dandelion greens
- 8 thin slices raw, mild onion
- French dressing

Arrange dandelion greens in a salad bowl with the water cress. Salt if desired. Add the slices of onion, and pour the French dressing over all. Approximate yield: 4 salads.

Red Cabbage Salad

Shred red cabbage finely. Add whipped cream, lemon juice, and salt to taste.



Spring Fashions IN VITAMIN-RICH Recipes

By KATHERINE KESSEL, B.S., Dietitian

Potato Pancakes

- $\frac{1}{2}$ cup evaporated milk
- $\frac{1}{2}$ cup fine dry bread crumbs
- 1 egg, beaten
- 1 teaspoon minced onion
- 2 cups grated raw potato
- $1\frac{1}{2}$ teaspoons salt

Pour milk over bread crumbs. The crumbs should soak up all the milk. Stir in the egg, onion, potato, and salt. Drop from tablespoons on hot greased griddle. Press out rather thin and cook slowly until well browned. Turn and brown on other side. Approximate yield: 6 servings.

Toasted Carrots

- 8 cooked carrots
- 2 tablespoons butter
- $\frac{1}{2}$ teaspoon salt
- 2 cups corn flakes, crushed
- Dash of paprika
- Parsley garnish

Roll whole cooked carrots in melted vitaminized margarine, then in crushed corn flakes, seasoned with salt, and paprika. Place under broiler, moderately low, 358° F. for 10 minutes. Turn frequently. Insert a sprig of parsley in end to resemble original vegetable. Serves 4.

Rolled Oat Cookies

- $\frac{1}{2}$ cup sugar
- 5 tablespoons solid vegetable fat
- 2 teaspoons molasses
- $\frac{2}{3}$ cup seedless raisins
- 1 cup rolled oats
- $\frac{3}{4}$ cup flour
- 1 egg
- A few grains of salt

Add salt and molasses to fat, and work together in a bowl. Add sugar gradually, and cream the mixture until white and very light. Add the well-beaten egg, and mix. Add the raisins, then the oats, and lastly the flour. Mix lightly, and press off from the side of a tablespoon onto an oiled baking pan, leaving a little space between cookies, and bake in a medium slow oven to a delicate brown.

Brazil Nut Potato Patties

- $1\frac{1}{2}$ cups moist, mashed potatoes
- $\frac{1}{2}$ cup sliced Brazil nuts
- Butter
- 1 egg, beaten
- $\frac{1}{2}$ cup ground Brazil nuts

Add the sliced Brazil nuts to the mashed potatoes. Form into patties, dip in beaten egg, and roll in ground Brazil nuts. Dot with butter, and bake on a greased cooky sheet in moderately hot oven (375° F.) until brown. Yield: 4 to 6 patties.

Ribbon Bean Loaf

- 1 cup Lima beans
- 1 cup kidney beans
- 3 tablespoons rich cream
- 2 tablespoons browned flour
- Salt

Keep beans separate. Cook until well done but not soft. Drain well and mash through a colander, having the pulp as dry as possible. Add 1 tablespoon of the browned flour and $1\frac{1}{2}$ tablespoons of cream to each kind of beans, mixing well. Place in alternate layers in a brick-shaped tin, and bake in a moderate oven until heated through and a nice brown. Serve with cream tomato sauce, or gravy. Approximate yield: 6 servings.

Tomato Gravy

- 4 tablespoons vegetable oil
- 1 medium onion chopped fine
- 4 tablespoons flour
- 15 ounces tomato juice
- Water to right consistency
- Salt

Fry onion in oil until brown. Add flour and brown lightly. Then add tomato juice and water to give desired consistency. Season with salt and strain.

Baked Apples

* Core. Stuff centers of Rome Beauty apples with chopped walnuts and dried figs. Bake with brown sugar and top with whipped cream.

THROUGHOUT the years tradition, locale, and peoples have determined the type of dwellings in which men lived, but the straightforward use of natural materials has had the widest influence on the development of the home in America. With the new technological and scientific skills that developed during and since World War II we now have materials and methods of con-

AT LAST— *You*

Are Going to Build

EWING GALLOWAY

Young People Planning to Build Can Now Benefit By Methods of Construction and Materials Surpassing Any Heretofore

struction surpassing anything hitherto known. The period just before us may well produce the greatest advancement in home development in the history of the world.

Because the early settlers in this country had to avail themselves of the materials at hand for the construction of shelters, their developments were limited. These first structures were sod-covered dugouts built as temporary shelters. Some reflected the construction methods then used in England, and others copied the architecture of the Indians.

The Indian threat was directly responsible for the development of the garrison-type home, the first house typical of this country. This structure had small windows and an overhanging second floor for protection. This overhang permitted the pouring of hot lead on any person attempting illegal entry. This style, constructed in general of mortice and tenon frame plank, without the use of nails, was typical of all the early construction. As this garrison-style house developed, rooms were added on the first floor at the rear

of the structure, resulting in a low sweeping roof line from the ridge. From this development emerged our so-called salt-box house. (Fig. 1.)

The thrifty and ingenious Dutch used all the available materials, sometimes combining stone, brick, stucco, and frame into a harmonious structure. The stone was always used near the ground so that the mortar joints could be replaced during the long, hard winters. The break in the roof, called the gambrel, was introduced at the same time with the long sweeping eaves which, when extended, became the forerunner of our porch as we know it today. (Fig. 2.)

The Georgian period brought about quite a change. People became

more concerned with the finer things, whereas in the period just preceding, their chief interest was survival and existence. The unusual development and the subsequent refinement and embellishment of all buildings in this period were due primarily to the improvement of transportation facilities and the importation of materials, skilled labor, and ideas from the old world. (Fig. 3.)

This more permanent type of construction created homes which were more healthful and livable. The walls were tighter and drier, and more window area was provided, resulting in a much more desirable type of dwelling. While much material was imported, local conditions influenced the design

*This Article on the Development of the Home in America
Is the First of a Series of Six on "Building a Home"*

By RONALD S. SENSEMAN, A.I.A.

Architect



LESTER GAUDE, ARTIST

and the materials used. The plan and the ornament of the Georgian period, complex as they were, were the foundation of the fine residential construction of today.

Following this period, we have several significant periods, notably the Greek revival and the Spanish and Creole architectures. The Greek revival was an effort to reconstruct in wood, buildings with the exact proportions and details of the marble temples of the Greeks. (Fig. 4.)

The outstanding contribution of this period was the development of the balloon frame, which was the turning point in domestic architecture. The development of our West would have been impossible without this new type of construction, which eliminated all mortice and tenon and substituted the use of nails, which resulted in a saving of sixty per cent of the cost of construction.

Climatic conditions and locale were largely responsible for the development of the Spanish and Creole architecture. The overhanging balconies were ideal for outdoor living and acted as a sunshade for the windows below, and the French doors, giving access to the balconies, provided maximum ventilation. The Monterey style, with its charming simplicity, is outstanding for this period. (Fig. 5.)

The last half of the nineteenth century brought out nothing new in American architecture. The practice during this so-called Victorian period was the mimicking of the designs, filigrees, and whims of the third empire of France. Many of these buildings still blight the landscape, a challenge from a period of lethargy in American progress in architecture. (Fig. 6, p. 27.)

The beginning of the twentieth century brought little style or character, but in a revolt against the overdone structures of the Victorian era the buildings were so simplified that they became boxlike structures. (Fig. 7, p. 27.) With this period came the advent of the pipeless heater, which contributed notably toward a more comfortable and healthful dwelling place. The development of the bath-

(Continued on page 27)



CHARLES CAREY

*"I Can Take It or Leave It-
BUT CAN YOU?"*

W. H. ROBERTS, M.D.

NOT long ago two representatives of Alcoholics Anonymous addressed our local medical society. They made the rather disconcerting statement that "once an alcoholic, always an alcoholic." This was based on their own personal experience and on that of many others. However, they and others had remained sober for years after the realization was faced that in their particular cases they were unable to leave alcohol alone without divine aid. They also found it helpful to occupy roughly an amount of time equivalent to that which they had spent over the bottle, in helping unfortunates habituated to the same. When it has been estimated that nearly ten per cent of moderate drinkers tend to become alcoholics, the problem suddenly assumes significant proportions.

A newspaper editor who years ago had found that alcohol and tobacco were harder on him than alcohol alone, chose alcohol as being the lesser of the two evils, and got by for many years in quite good health. At last, however, the delirium tremens began to threaten. He was genuinely concerned when he began to hear voices behind him. The doctor at the military hospital was rather plain spoken and stated, "Well, next time you are admitted you will require shock therapy. If there is a third offence, it will mean the asylum." Since then, he states, he has been able to converse with his friends in the beer parlor evenings without the slightest temptation. Incidentally, he started by taking a nightcap for insomnia.

Experience in talking to tobacco smokers would almost lead one to believe that in many cases, "once a tobacco addict, always a tobacco addict." Perhaps *addict* is a strong word, but we will not alter it. There are individuals who do overcome in a number of unusual ways. Only recently I talked to a fisherman. He decided to use a little will power and quit smoking. He was scheduled for a fishing trip, so he conceived the bright idea of leaving his tobacco at home. One day out at sea was all he could take; he beat his way back to port to get some cigarettes. As his stomach ulcers were bothering him a little, he stopped in to see a doctor, who told him if he wanted his ulcers to heal, and didn't want to run the possibility of eventually getting cancer of the stomach, he would have to quit smoking. He promptly quit, and found it rather effortless. Just to spite himself he put some cigarettes aboard his boat and has not touched them since. A retired minister, a veteran smoker, more impressed with the inconsistencies of the medical profession than with the logic of one doctor who advised him to quit smoking, sat down one day to read the *Reader's Digest*. He stumbled across the article "Are You a Man or a Smokestack?" The resolve was promptly made and successfully kept thereafter.

Another man found that exercising will power in the usual way was a failure—at least, when it was exercised in trying to taper off. This tapering off, Dr. Alvarez, of the Mayo Clinic, says, never works, a fact which countless smokers will corroborate. He decided to fool himself, so the next morning at dawn, when he found himself fumbling for his tobacco, he said to himself, "I never did smoke, and I'm not going to start now." The inner man was quite satisfied with the statement, and everything was all right from that moment on. He had made the great discovery that the only way to stop this thing is abrupt withdrawal.

Then there was the case of the young morphine addict who came rather furtively one evening, hoping for a shot to enable him to get back to his home town. He candidly admitted that he had been in jail

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Temperature Pulse Respiration

Three Cardinal Body Functions and What One Should Know About Them

By **BERTHA A. BORGE, R.N.**

A. DEVANEY

IN THIS age of specialization it seems that few of us retain a family doctor as did our parents. The general practitioner is apparently outmoded. If we have a stomach disorder, we call on a stomach specialist; when or if our heart causes us discomfort, we visit a heart specialist. We go to an obstetrician to have our babies, and then to a pediatrician to care for the child. Each knows his field to perfection. But whom do we go to see when we are not sure where the trouble lies?

We find one day that we do not feel well. What is wrong? Well, we are not exactly sure, head aches, throat's a little sore, just feel "punk" all over. We call it general malaise (that sickish but I don't know where, feeling). We wonder whether we should call the doctor. Maybe so, but which one—there is where the problem lies. Perhaps if you could check up on yourself, you might be able to decide whether to call Dr. Jones, or Dr. Smith, or maybe you just need to rest for the day. Your answer is all in knowing the cardinal signs!

There are three cardinal functions with which you should be familiar.

They are: (1) your body temperature, (2) your pulse rate (the number of heart beats per minute), and (3) your respiratory rate.

We speak of a normal temperature, pulse, and respiration, because they are constant and conform with such great regularity to a standard of health. Each is controlled by a mechanism so delicate and precisely adjusted that it responds almost immediately to any abnormal condition in the body. Any departure from normal is considered a sign, or symptom, of disease!

Body Temperature

The body temperature is its degree of heat, and is the balance maintained between the amount of heat produced by the body and the amount lost. It is the result of the oxidation or combustion of food—chiefly fats and carbohydrates (starches and sugars), but also of proteins—in the body. The process is very much the same as that which occurs in your furnace when burning coal, oil, or gas. It produces

heat; so also the burning of fats, carbohydrates, and proteins produces heat in our bodies.

The normal body temperature is 98.6 degrees on a mouth thermometer. If taken in the axilla (under the arm), it is slightly lower; if taken by rectum, it will be one degree higher. Children's temperatures should always be taken by rectum. Your temperature is lowest between 2 A.M. and 6 A.M. (a critical hour for the sick, sometimes requiring them to have another blanket, hot drink, and so forth). It gradually rises during the day, because of the intake of food plus exercise, reaching the maximum between 5 P.M. and 7 P.M., and falls again during the night.

A slight departure from 98.6 is not considered abnormal. Any temperature from 97 degrees to 99 degrees is not usually significant. However, any departure below 97 or above 99 degrees, if accompanied by compatible pulse and respirations, indicates that something is wrong.

High temperatures persisting any

length of time are always serious. Recovery seldom occurs when a temperature reaches 107 degrees or over!

Pulse

The pulse is taken while the patient has the thermometer in his mouth. This is done by placing the forefinger and second finger of your left hand on the patient's wrist directly below his thumb. Do not use your thumb to take the pulse, for there is a pulse beat in your thumb, and you are likely to record your own pulse beat.

In the event it is not possible to take the pulse beat at the wrist, there are a number of other areas. These are at points where large arteries come near the surface, such as the temple, the side of the neck, the femoral artery (inside the thigh), or the dorsalis pedis artery (interior of the ankle).

For ordinary purposes you should note the rate and rhythm of the pulse. The normal pulse rate for an adult is seventy to eighty, but may range from fifty to ninety beats. The rate of the heartbeat varies with sex, size, and age. Man's average pulse is seventy; woman's is seventy-eight to eighty. Tall people have a slower pulse than short people of the same age. The pulse rate gradually diminishes from birth to old age, and begins to increase once more in extreme old age. Before birth the pulse beat of the unborn child is around 150 a minute.

The pulse is the distention of the arteries produced by the wave of blood forced through the artery by the contraction of the left side of the heart. This is the working period of the heart, and the contraction is called the heartbeat. Every beat of your heart forces approximately three ounces of blood into the large artery leaving the heart, which is called the aorta. After each heartbeat there is a resting period of the heart.

If anything interferes with the function of the heart, with the blood, or with the elasticity and contractibility of the blood vessels, there will be a change in the rate of your pulse. At one time, not more than seventy years ago, the pulse was the only means available to study the condition of the heart. Now the physician is able to take electrical tracings of the heart's action.

Respiration

The last cardinal function is the respiration, or the rate of the interchange of gases, the absorption of oxy-

(Continued on page 23)

Home Treatments



HYDROTHERAPY—HEATING COMPRESSES

By Stella C. Peterson, R.N.

BY APPLICATIONS of heat to the skin the blood vessels are dilated and blood is brought to the surface. Thereby congestion is relieved. When it is desirable to maintain such a derivative effect, a heating compress may be applied between treatments or overnight.

A heating compress is a cold compress applied to the part and covered with dry flannel to prevent circulation of air and cause an accumulation of body heat. The cold compress soon warms up and so has the effect of a mild application of heat. If the compress dries out before being removed, it has a mild derivative effect.

If the pack is also covered with oiled silk, drying is prevented, and local sweating will occur. This will also cause relaxation of muscles. When the compress is removed, the part should be rubbed with cold water.

Heating compresses may be used for the throat in cases of sore throat or tonsillitis, for the chest in colds, pneumonia, whooping cough, croup, and so forth. The heating compress may be applied to knee, ankle, foot, hand, or wrist in joint conditions, or to the abdomen in cases of constipation, certain types of indigestion and in cases of insomnia.

ARTICLES NECESSARY (For heating compress to the throat)

1. Old cotton cloth two thicknesses about three inches wide and long enough to wrap about the neck twice.
2. Piece of flannel (single or double, depending upon weight of material) about four inches wide and long enough to wrap about the neck twice.
3. Safety pins.
4. A piece of bandage (to put over top of head to hold compress up under lower part of ear).

PROCEDURE

1. Wring cotton cloth from cold water and apply around the neck.
2. Cover well with flannel, fit snugly but not tight enough to be uncomfortable.
3. Pin securely—use bandage over head, from ear to ear, to hold compress in place in cases of tonsillitis.
4. Rub the neck with cold water immediately after removing the compress in the morning.

PRECAUTIONS

Considerable water may be left in the throat compress when it is first applied, but it should not drip, and it should be dry by morning.

INDICATIONS

1. Pharyngitis.
2. Acute laryngitis.
3. Tonsillitis and quinsy.
4. Inflammation of eustachian tubes (the tubes leading from the throat to the middle ear).

ARTICLES NECESSARY (For moist abdominal binder)

1. Old cotton cloth two thicknesses about eight or nine inches wide and long enough to wrap one and one-half times about the body.
2. Piece of flannel about twelve inches wide and of same length as cotton material.
3. Safety pins.
4. Piece of oiled silk if desired.

(Continued on page 30)

THE pain in my side and the nausea which I have surely could not be due to my kidneys!" The patient was a woman who was very definite in her opinions, and she could not understand why her family doctor had sent her to a kidney and bladder specialist because her stomach was upset and she had pain in her side. "My kidneys work normally—I do not have to get up at night to pass the urine, and I do not have any aching in the lower part of my back," she explained. "I have been having attacks of flu during the past year or more, and I am sure that the chills and fever which usually occur when my stomach is bad are due to intestinal influenza." Her family physician had, however, found pus, bacteria, and albumin in the urine, and had sent her to a urologist (kidney specialist) for study. After the interior of the bladder had been examined with an instrument equipped with a light and lense system (cystoscope)—a small tube passed into each kidney to

kidney. The stone could have been removed and the kidney saved. It was well for this patient, however, that her other kidney was good—in fact, it had already taken on most of the work of the diseased kidney. She will be able to live a normal life unless the remaining kidney becomes diseased.

It is fortunate that there are two kidneys in the human body, for sometimes only one may be affected by disease. There are, however, a number of conditions which damage both kidneys equally.

A routine urinalysis should be done once a year. This is comparatively simple and inexpensive and will usually show some abnormality if there is kidney or bladder disease. Such an analysis may also show indications of diseases which are not primary in the kidneys or bladder. Whenever a person is ill, a urinalysis is one of the first tests which should be made, for maybe it's your kidneys.

Infection and stone formation are



MAYBE It's You

H. A. ROBERTS

obtain a specimen of urine from each side—and X-rays taken, it was found that one kidney contained a stone, was badly infected, and almost functionless.

The chills and fever had been caused by the kidney infection, the pain in the side was from the stone in the kidney, and the upset stomach was due to reflex intestinal spasm from the kidney colic. The kidney was damaged to such an extent that it was necessary to remove it. There was no possibility of its regaining its function after removal of the stone and the giving of treatments, for most of the kidney tissue had been destroyed by the stone and resulting infection. A urinalysis done at the time the patient first noticed symptoms would have shown abnormalities; and a thorough examination, including X-rays, at that time would have disclosed the stone before irreparable damage had been done to the

two of the many diseases which may occur in the kidneys. Some of these diseases require surgical treatment, but the majority are treated medically. They cannot all be diagnosed in the very earliest stages by an analysis of the urine, but a sufficient number can be detected in this way to make urinalysis well worth while as a routine yearly procedure and a *must* whenever a person is not feeling well.

"An ounce of prevention is worth a pound of cure" can truly be applied to kidney disease. Healthful living will go far toward keeping the kidneys fit, and on the other hand disregarding the laws of health may initiate trouble that leads to disaster.

Prolonged fatigue, both mental and physical, is one of the most common causes of high blood pressure. This in turn produces hardening of the arteries in the kidneys, so that these organs do not function as they should. The

*These Organs May Be a
Dizziness, and Stomach
Suggestion*

ROGER

final outcome of this train of events may not be evident for several years, but when a man or woman continually works beyond his strength, either mentally or physically, a breakdown is sure to follow. Damage to the kidneys is a comparatively late result of high blood pressure, and the symptoms of headache, dizziness, sleeplessness, and extreme irritability are a warning that should be heeded.

Because it is the *continued* fatigue that is harmful, it is very important for the person who is under stress and strain to know how to relax. When you arrive at home at night, even though it



tirely relaxed and already half asleep. Such a sleep will be restful.

The kidneys eliminate many of the waste products from the body. When the blood passes through the tiny vessels in the kidney, the living cells that line these vessels select from the blood the material that is not necessary for the proper functioning of the body. These waste products, together with the proper amount of water, pass through the cells into the minute tubes of the kidney and are eliminated in the urine. This selective action is a very remarkable phenomenon, and cannot be explained by any physical laws that are known. About sixty per cent of the fluid taken into the body is eliminated through the kidneys, and the remainder through the skin, lungs, and intestinal tract. The quantity of water excreted by the kidneys is about the same as the quantity of fluid taken into the body. The amount lost through the skin, lungs, and intestinal tract is practically the same as the

one quart of water or other liquids, in addition to those obtained in the food, is sufficient. When he takes less, the urine remains too highly concentrated, and the tubes inside the kidneys become irritated. If this condition is allowed to go on over a long period of time, it may lead to a breakdown of the kidneys, to kidney stones, and to infection in the kidneys. On the other hand, it is not wise to drink an excessive amount of water, for in some diseases, such as heart trouble, the body, including the kidneys, may not be able to properly handle the increased fluid intake.

Frequency of urination is sometimes due to excessive fluid intake. It is abnormal for a person to pass the urine more than twice during the night. When the arteries of the kidneys become somewhat hardened, there is a tendency for the urine excretion to be more profuse at night, resulting in excessive frequency of urination. This can be remedied in some cases by re-

our KIDNEYS

*or in Backache, Headache,
Stress. Some Practical
Their Care*

BARNES, M.D.

is late, you must train yourself to untie each muscle of the body and to clear your mind of daytime problems and anxieties. When you get into bed, concentrate on relaxing, and see how it helps you to forget the things that have been nagging you all day. First, relax the muscles on the top of your head, then those of the forehead, then of the eyes, the cheeks, the mouth, and continue thinking about relaxing each muscle all the way down through the body. When you have reached the toes, start at the head again and repeat the process. After you have done this several times, you will probably be en-

amount of liquid contained in the food eaten. If the kidneys do not receive enough fluid, their efficiency is reduced, and the waste products remain in the body, causing uremic poisoning.

To keep the kidneys in good working order, it is important to drink a certain amount of water each day—the amount varying considerably in different persons and different climates and with different activities. Infants need more fluid than old people, for the latter do not eliminate as much through the skin and lungs as do infants and young people. A person who is doing hard work on a hot day needs a large quantity of fluids—even as much as ten quarts a day in rare instances. If he is perspiring a great deal, a little salt added to the water will make up for the loss of salt through the skin. During cold weather, and especially if the individual is not active,

ducing the fluid intake after 4 P.M.

Frequent urination accompanied by a burning sensation when the urine is passed, is usually due to an inflammation in the bladder. Infection in the bladder or kidneys, stone or tumor in the bladder, or ulceration may cause the inflammation. Sometimes insufficient fluid intake, holding the urine too long after the desire to void occurs, or becoming chilled, will cause inflammation and result in frequency and burning on urination. A urine which is too acid or too alkaline is irritating to the mucous membrane lining of the bladder, and sometimes causes burning and frequency. It is a common belief that the most frequent cause of burning on urination is a too acid system. This is not true, for there are many other causes for this symptom, and, in fact, a hyperalkaline condition of the urine may cause burning as

(Continued on page 32)

The Housewife's Corner

Conducted by CAROLINE EELLS KEELER

Homemaking—A Career Packed Full of Adventure, Love, and Work

Please enclose a stamped addressed envelope when writing to this Department. Address Housewife's Corner, LIFE AND HEALTH, Takoma Park, Washington 12, D.C.

SPRING—The crows have long heralded the coming of spring. We and the crows both like March. The days just march right along into spring. We watch the ice go from off the lake; the air gets balmy now and then, but we don't make a move toward our gardens, for we well remember that sometimes the worst snowstorm of the year comes in March. We get out the seed packages that we have ordered and received, and read the directions, and our fingers just itch to start digging in the good earth.

JUICER—Have you seen the new Kwicky Juicer? A light aluminum juicer with a strainer that gets all the juice and strains out coarse pulp and seeds. This juicer has a rubber pivot base that holds it firmly to the table. You press the half orange with your left hand on the juicer and then turn the handle with your right hand two or three turns. You don't twist the orange, just give two or three quick turns with the handle. Then you shake out the pulp and rinse, and that's all there is to it. The manufacturers will mail you one postpaid for one dollar. They do not ship C.O.D. Send your orders to The Quam-Nichols Company, 33d Place and Cottage Grove Avenue, Chicago 16, Illinois.

A MOP that I must tell you about is my new Minute Mop. A drainer comes with the mop, and this fits on the mop bucket. The mop head is of du Pont cellulose sponge and absorbs twenty times its own weight in water. It just sucks up dirt, and when you want to squeeze out the water, simply rest the mop head on the drainer, press lightly on the handle, and the water drains into the bucket. It's really a marvelous aid to the housewife. The minute I received my Minute Mop I thought, "Here is something with which I can wash those windows I can't reach from the outside." You can squeeze the water out of your mop quite thoroughly and use it as a squeegee.

The mop must always be clean when put away. Rinse it in clean warm water and then squeeze out all the surplus. It must be hung in a well-ventilated place to dry. Never store the mop with the sponge head resting on the floor. Be sure

to follow manufacturer's directions for using the mop in connection with bleaching solutions and cleaning powders or synthetic detergents.

Refills are obtainable. You'll be happy to know that you may obtain a junior model of the Minute Mop for your young daughter to use. It is obtainable at hardware and department stores for about two dollars. You may write to Minute Mop Company, 17 E. 23d Street, Chicago 16, Illinois. There is also a dish mop of this cellulose sponge which does not get that rancid odor associated with cotton mops. Retail at thirty-nine cents.

PRESSURE QUICK SAUCEPAN, a new pressure cooker, built by General Mills on an entirely new principle, makes pressure cooking easier than ever before. The Pressure Quick Saucepan makes cooking much simpler because it does more things automatically. It even seals itself.

Big clear figures on the Cookminder dial tell you the pounds of pressure at a glance.

Time and energy need not be wasted lugging a pan to the sink for water cooling. With most recipes the Pressure Quick Slide Release lets you reduce pressure right at the range.

A gentle squeeze easily releases the feathertouch safety lock—but *only* when pressure has been reduced.

RECIPE OF THE MONTH

Penuche Fudge

- 1½ cups light brown or maple sugar
- 1 cup granulated sugar
- 1½ cups milk
- 1 teaspoon vanilla
- 2 tablespoons real butter
- ½ teaspoon salt

Mix the milk and sugars thoroughly, add the butter, and cook with little stirring until the mixture forms a soft ball in cold water. Add the salt and vanilla, and set aside to cool for 20 minutes. Then beat to a creamy stage, and add 1 cupful of walnut meats (pecans or other nuts). Cut or mold in shape as desired.

—From Hazel Hartwell Simon, Mountain View, California.

FOLEY CHOPPER—I hope you can get one of the Foley choppers. Chopping is no chore when you use this chopper. It has three stainless steel blades that are sharp as knives and spring action. It simply bounces as you chop, and the ends of the blades are curved to fit the chopping bowl. It is obtainable in most department and hardware stores for seventy-nine cents, but cannot be ordered directly from manufacturers.

SPRING CLEANING—March means spring and balmy days in many localities, but winter is loath to leave, and we have wintry days in March. We yearn to start our spring cleaning and get it over with, but there's one cleaning job that's always with us and that's dusty radiators. To clean them, place a moistened newspaper behind and below each radiator, the blower tool on your vacuum cleaner will do the rest. The paper catches the dust.

Another thing we can always be doing, at least now and then, is washing those washable rag rugs that we have in bathrooms or bedrooms. We become annoyed at times, because the ends curl up a little. It looks anything but neat when they do this. The home economists advise dipping these rugs in a weak starch solution when you launder them. This helps keep them flat, and lessens the danger of tripping over them.

We all do it at times when we know we shouldn't—leave our kitchen knives in the dishwasher. This loosens the wooden handles, and you can be cut when fishing around in the dishwasher for them.

ONION DISHES—This is the "slim pickings" time of year in some localities where a good market is not just around the corner. We get tired when we think of potatoes and beans and canned tomatoes. But there is still the good old onion. If you cut a cross on the top of onions with a very sharp knife—not too deep a cut—you will find that when you cook the onions, the centers will not pop out. You can cream boiled onion. Onions call for melted butter, and a dash of paprika gives them a good color. Scalloped onions, using cracker crumbs in between layers of onions, are delicious. Onions stuffed with baked beans are good too.

NEW RECIPE—Alfaretta Sherman Paulsen of Iron River, Michigan, sends us this recipe she says she "invented."

- 1 cup mashed potatoes
- 1 cup bread crumbs
- 2 tablespoons fat
- 1½ cups potato water
- 1 teaspoon Vegex
- ½ cup mashed soybeans
- 1 tablespoon cornstarch
- ¾ cup uncooked rolled oats
- ½ teaspoon liquid smoke
- Salt, onion, herbs to taste.

Mrs. Paulsen says she varies the herbs, sometimes using thyme, or savory, marjoram, sage, origanum, or other herbs.

"Mix everything together, and put it in tin cans and cook in the pressure cooker fifteen or twenty minutes. A double boiler works all right too," adds Mrs. Paulsen.

CHAIR repairing—"Don't nail fiber or cardboard seats to your chairs simply because the cane part has worn out," says Ruth Peck, home furnishings specialist at Michigan State College. "Nor should you throw the chair away because the cane, which originally came from the Orient, is not at present available." Miss Peck believes a little effort can be put forth to weave strips of cloth to fill the gap once occupied by the cane. The seat can then be padded and a slip cover put over the entire seat.

"All the old cane should first be removed and the substitute webbing made from old ticking, burlap, or feed sacks. Strips should be made about twelve inches wide and as long as possible. They should be sewed to measure five or six yards in length. Then fold the strips lengthwise so that raw edges meet in the center; fold again in the center and press with an iron, making a strong web strap about three inches wide.

"With the chair facing you, pass one end of the webbing around the front of the seat frame on your left; sew firmly by hand. Weave the free end back and forth, over and under the seat frame, making figure eights until the opening has been filled. Pass the end of the webbing around the frame and sew tightly.

"To pad the chair seat, spread several thicknesses of cotton padding or an old quilt evenly over the entire chair seat. Cover this with a feed sack or other firm material. Fold this cover neatly under the chair seat at the four corners and sew or tack firmly.

"The last operation is to make a seat slip cover. This cover should fit well. It may have a plain banding or a short tailored, box-pleated flounce to cover the tops of the legs. The seat cover is held behind each leg with a tape—the same way card-table covers are fastened.

"The chair or stool will now give 'sitting comfort'; yet the padded seat can be easily removed when cane is once again available."

WET SHOES are common things at this time of year. We must take good care of wet shoes, and if you are thinking of rubbing oil into wet shoes, be sure it's castor oil you use. You can polish shoes that have been rubbed with this oil. The shoes don't mind castor oil at all.

BATHROOM ETIQUETTE—Another reader writes me: "Do you ever mention that family 'institution'—the bathroom—in your homey page? If so, kindly insert a suggestion about the guest towel. Now, I grew up in a family of rollicking boys. We shared the kitchen towel and the wash basin. It was my job to keep it scrubbed shining clean. I still enjoy visiting my brother's farm home and sharing that big threshing-crew-size roller towel, put up clean once or twice a day. But they're my kin, and if anybody has an itchy spot or an infection, he is isolated from the family towel for both his own and everybody else's protection. When it comes to the twice or thrice family-shared bathroom, I am a firm believer in a personal, private towel. But the 'thoughtful' guest frequently refuses to let it remain personal.

"'Oh, no! I don't want to soil your towel,' I overheard a lady say to my landlady not long ago. 'I'll just use a bit of paper,' and she locked the door in the face of the proffered bit of guest towel. I thought nothing special about it until I chanced to go into the bathroom moments later. There hung my towel askew—unmistakably having had recent use. My first thought was one of chagrin because it was a soiled towel—more soiled than I usually leave up. That was its last day on the rod, so it was an easy matter to drop it in to the clothes hamper right then. But my next reaction was an inborn nausea that anybody would want to use someone's soiled towel—even to dry her hands. Hands are used for everything. Why subject them to dirty towels that other people have used for days?

"What do we often see in a shared bathroom? The bowl is often unsanitary, toothpaste and dirty water decorating the bowl for the next comer, water splashed on the floor for the next person to step in. I chanced to know some who had to share, and now I understood their predicament. Why should anybody fail to rinse out the bowl before leaving the bathroom and do some of the little things that would enable the next comer to enjoy the bathroom. Of all places in the house, it seems to me, we should be careful to leave no trace of ourselves in the bathroom. But perhaps that's where human nature shows!

"Now that these paper towel racks are back on the market, I am putting up one in our bathroom where the guest can have access to paper towels at all times. Perhaps that's a good solution—for both the guest and the laundry."

What is your pet peeve about the bath-



We win the Oscar!

Sani-Flush and I take the prize. We're a pair of pretty smooth actors. I sprinkle Sani-Flush into the toilet bowl—and Sani-Flush does the rest to perfection. Cleans away stains and film . . . disinfects thoroughly! What remains is sparkling cleanliness—odorless freshness. No rub or scrub. And that's for me.

Safe in all toilet systems. Good in hard or soft water. Every grocer has it. Two sizes. The Hygienic Products Co., Canton 2, Ohio.

Sani-Flush

QUICK
EASY
SANITARY



room and its care? I could mention leaving hair in the lavatory. Some folks just will comb their hair in the bathroom and the next comer has to clean up the hairs before he can wash. This towel business makes me think of a neighbor we once had. She came up to our house once when my mother was hanging up our washing, and, noticing all the towels on the line, she said, "How do you have so many towels in the wash, Mrs. Eells? Why, I have only one or two in the wash, and they aren't very dirty!" There were easily seven in the family, and two of them big care-less boys.

This also recalls an episode at boarding school. We waxed quite wrathful about a certain girl who always left a ring around the tub when she left the bathroom, so we got after her about it. She only said, "That ring was there when I got in the tub!"



We do not diagnose or treat disease by mail. Enclose stamped, addressed reply envelope. Replies made only to letters from bona fide subscribers. Address Family Physician, LIFE AND HEALTH, Takoma Park, Washington 12, D.C.

Hardening of Arteries

I wish to know the cause of hardening of the arteries.

You are asking a question that thousands of others have asked, and as yet no simple short answer can be given. Hardening of the arteries in a large degree is probably the change that accompanies age and maturity. As the tissues of early life are soft and pliable, they form vessels that are supple and flexible. As age comes on, fibrous cells are laid down among other cells and the tissues are not as flexible as in youth. Blood vessels participate in this change and often become quite firm and almost leathery in consistency.

Frequently there are other processes that lead to decomposition of the calcium in the walls of the vessels, making them hard and brittle; or cholesterol is often deposited there, making plaques along the walls of the vessels that are at times brittle and at other times spongy and porous. Continued nervous strain and tension undoubtedly may be a factor, perhaps indirectly, in influencing metabolic processes within the body.

Menopause

Would you please give me the symptoms during the menopause? I have dizzy spells and rapid heartbeat at times. Do these come during this change? Also, can one be in the change and menstruate each month?

The term *menopause* is used to designate a period that may extend over several years in a woman's life. It is commonly considered to cover that period when the menstrual flow begins to lessen until the time that it ceases. This interval, however, may be much shorter than the true menopause period.

The menopause is often accompanied by "flashes," or "flushes." These are variations in temperature. A woman may feel cold one minute, and then without apparent cause be extremely warm and perspiring a few minutes later. Her face may actually be wet with perspiration. There is often an instability of nervous feeling. One is much more prone to emotional upset. There is commonly a feeling of marked tiredness out of proportion to exercise that one may be doing. Frequently there is a lessening of sexual

impulses, although this is not a constant symptom. The hair of the body often loses its luster, and there is a tendency to add weight. This change in the luster of the hair may be accompanied by a thinning of the hair on the scalp, as well as in other areas. In the broader sense the change may be present actually several years before menstruation ceases.

Anemia, Primary and Secondary

I would like you to explain the difference between a primary anemia and a secondary anemia. Are they not both a pernicious anemia? Or is the primary anemia the worst form? I take liver shots every week (15 units), and liver extract and vitamin B₁ by mouth every day. I also take an acid with my meals. Could you suggest a good diet for this kind of anemia? And do you think that after the change of life I will still have to have the injections every week?

Pernicious anemia is a primary anemia, one which affects the blood-making organs of the body. A secondary anemia is a type of anemia which follows because of some diseased condition. For example, if a man should sever an artery in his arm and lose a lot of blood, he would then have a secondary anemia.

Where the blood-making organs of the body do not make enough cells, or do not make enough of the right kind of cells, we have a primary anemia, or one which is fundamentally due to a failure in blood formation.

Just what effect the passing through of the change of life would have upon your anemia can be answered only in the light of experience.

Pernicious anemia is usually regarded as an incurable disease, but one which we are able to regulate by the use of liver extracts, liberal portions of vitamins, and a suitable dietary choice. The diet can be quite general. We recommend including with it citrus juices. In some instances lemon juice, as much as two ounces a meal, has served as a favorable adjunct.

If you have a pernicious anemia it is quite likely that you may have to take liver injections over a long period of time. Just how much you will have to take, and for how long a period, will have to be answered as tests are made of your blood.

Low Blood Pressure

My blood pressure is 110, which I understand is below normal. Can you give me a diet and other directions for low blood pressure? Thank you.

A blood pressure of 110 is slightly below the average, it is true, but we would not look upon it as being abnormally low. In most instances we would regard such a reading as normal and give no particular attention to it from the point of view of prescribing treatment.

There is very little that can be done medically for low blood pressure. Every means at hand should be done to increase general body tone and vigor. The use of alternate hot and cold baths, a suitable amount of protein in the diet, adequate rest, and the supplying of a suitable vitamin intake are important provisions. These would be good practices in the life of anyone. If you are markedly underweight, endeavor to bring up your weight to approximately the average recognized for your height. In some glandular irregularities injections of extracts are helpful.

Excess Feeding of Vitamins

Do you think mothers of today give their children too many vitamins? Are too many harmful?

The present-day popular feeding of vitamins is probably unnecessary to a large degree. If people would live a more simple life, including in their dietary program an abundance of simple foods prepared in ways that do not destroy the natural minerals and vitamins, there would be very little call for the artificial serving of vitamins. At the present time their use has become almost a fad in the minds of many people. Most vitamins are harmless if taken in excessive quantities. They are simply excreted by the body as so much waste. It is rather an expensive form of waste, in view of the high cost of most vitamin preparations. There seems to be some evidence that the excessive use of vitamin D may be injurious. We think that a limited use of this vitamin, with suitable exposure of the body to natural sunlight, meets all the actual needs of the body and is safer than indulging in unlimited quantities of the prepared article.

Soothing Relief for Arthritic Rheumatic Sufferers

Battle Creek
THERMOPHORE

EFFECTIVE HELP FOR NEURITIS, COLDS, FLU

WITH MOIST HEAT

HOT APPLICATIONS

SIMPLE—FAST—EASY TO USE
Relax with relief from pain and soreness under quick, electric, moist-heat "hot applications" (fomentations). Ready at the snap of a switch, the Battle Creek THERMOPHORE gives you convenient, pain-soothing heat; no wet towels; replaces messy old-style "hot packs."

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A professional appliance, yet safely, easily used at home—wherever moist heat will help. User says: "It certainly does relax people—gives immediate relief."

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Large unit is 27" x 13"
... uses AC or DC
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able covers, safety
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Temperature, Pulse, and Respiration

(Continued from page 17)

gen, and the elimination of carbon dioxide. In all living things life depends upon these chemical changes in one form or another. The body can survive for a considerable length of time without food, but not even for a few moments without oxygen.

By means of the respiratory system, oxygen is absorbed into the blood and the carbon dioxide is eliminated from the body. Normal breathing consists of a rhythmical rising and falling of the abdomen and chest walls. Usually in the adult it is carried on unconsciously eighteen times a minute. A child twenty to twenty-five times a minute, an infant thirty to forty times a minute. We have found it best to take the respiratory count at the same time that we appear to be taking the pulse. This is done because people have a tendency, when aware that you are counting their respirations, to quicken them a little; this will give you a false count.

An individual's emotions have a decided effect on their respirations, and these may increase to sixty or more a minute if one is nervous or excited.

Elevated temperatures will cause the respirations to increase. Pneumonia and inflammatory diseases of the lungs affect the circulation, which in turn will increase the rate of respiration. Conditions which reduce the amount of oxygen, such as high altitudes, or increase the demand for oxygen will cause an increased respiratory rate. Obstruction of the air passage by a foreign body or by increased secretions will also change the rate. The respiratory rate will decrease or become irregular if there is an increase in pressure about the brain. Drugs such as opium will slow down the breathing. Diabetic coma will cause a person to have slow and irregular respirations, so will uremic poisoning, which follows kidney failure. These conditions seem to produce exhaustion, and finally failure of the respiratory center located in the brain.

These then are your three cardinal functions, which are vital to health! Know them and know what is the normal body temperature, pulse beat, and respiratory rate. If someone in the household is not feeling well, place a thermometer under his tongue, take his pulse and respiration, and if they are abnormal, you should seek the help of a physician.

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The Mother's Counselor

Conducted by BELLE WOOD COMSTOCK, M.D.

Questions for this department should be addressed to the Mother's Counselor, LIFE AND HEALTH, Takoma Park, Washington 12, D.C. Always enclose stamped, addressed reply envelope.



Effects of Children Sleeping With Older People

Would you please tell me the bad effects (if any) of older people and children sleeping together? I have been told it is not healthy for the child. Is this true? I need proof for my stand on the subject.

The matter of elderly people and children sleeping together depends entirely upon the health of the older ones and the amount of fresh air in the room. Ideally it is better for children to sleep by themselves regardless of age. As to absolute proof that old people and children should not sleep together, I don't think there is any. As I have said, however, it is always better if possible for children to sleep by themselves.

Explaining to a Foster Child

I am the foster mother of a little girl eleven years of age. She is the only child of my husband's first marriage. The mother passed away when the little girl was just a little more than a year old. She was placed under my care for a time when she was about three years of age, but because of certain circumstances I had to give her up for a period of about a year. During the time she stayed with me she had begun to think of me as her mother. Later her father and I were married, and I have had full charge of her since. I have watched her grow from a wee girl to a girl of eleven, and she seems like my very own.

I have no children of my own. She has never been told that I am not her real mother, and now very soon I feel that she should be told otherwise. She is of a very sensitive nature, and very impressionable. She is also devoted to me in every way. I do not wish to lessen her regard for me, or to cause her to lose confidence in me, and above all, I do not wish her to lose faith in life. I feel this a matter of grave importance to both me and the little girl. Would you please advise me? I am at loss as to when to tell her and how to approach the subject.

I am very sympathetic with you in your problem but feel that the best thing for you to do is to have a talk with your little daughter and explain the real situation to her. Tell her that you have loved her as your own almost from the time that her first mother left her. Do not speak of her

first mother as her real mother, because the first mother is no more real than you are. The fact that she is your husband's child will also be helpful. Explain to her that there are many children who are transplanted from their first home to the home of those who finally become their real parents. Tell her it isn't the matter of being "born" that is so important, but it is important that the one who cares for a child learns to love her as her own. Explain to her that if a "born" child is immediately taken away from her first mother and brought up in another home, the first mother would not develop any particular love for her. It is the loving care that makes the tie between mother and child. I think you may ask divine guidance in this little talk that you will have with your daughter, that the Lord may help her to understand and feel toward you in just the way that you would want her to feel. He can guide you to bring about this conversation at just the right psychological moment so that it will come about naturally and not as though you had made a special point of it. You might tell her in connection with the news that some friend of yours has taken a little baby, if you happen to know of any such.



Discipline and Other Problems in Child Training

Should children be forced to say they are sorry for things they have done when they really are not sorry, or forced to say their prayers? Doesn't it teach them to lie?

Why is it harmful to bathe children in either warm or cold water soon after meals?

How is a parent to teach its child not to hit back when it is being whipped or punished? Also, how can one keep a child from talking back when reproved?

Successful training of children is a matter of gently leading them in the right

direction. They learn by example and are prone to imitate habits, mannerisms, and attitudes of their elders.

We are told by prominent psychiatrists that more important than demonstration of affection toward the child by the parents is what the child sees in the way of affectionate demonstration by the parents toward each other. It is in the lives of father and mother that children receive their daily lessons in human relationships and ethics.

Forcing children rarely does any good. Children are emotional creatures, and appeal to them must be made through their emotions and not through their reasoning. Reason will come, however, as they grow older. Where situations such as you mention obtain in any home, there has been a serious fault in the attitude of the parents toward their children. Certainly the use of force in connection with an apology or the saying of a prayer is a serious travesty and can only do harm.

I am sure it is true that actions which do not have the right motives are seldom productive of good. What our children need is love, affection, and deep understanding. Those who have to do with boys and girls, large or small, should learn to see things from the young person's viewpoint. Only those who can do this will be successful in rearing an individual, properly adjusted from a social and ethical standpoint.

The training of children can never be simply a matter of military discipline, although there are times when firmness and even sternness are necessary. It would be difficult for me to answer your questions with the simple yes or no. I can only lay down principles and let you think the thing through yourself.

I think you have the right idea in regard to the affect of continually telling children that they are naughty. To do this is almost always a mistake. It is only when people are commended that they have the urge to merit further commendation.

As to bathing children after meals—that may not do a great deal of harm, although I believe in general it is better for the baths not to be given at that time. The reaction of the nervous and circulatory system to the bath may detract to some extent from the attention that the body should be giving to the digestive processes.



RUTH M. WHITE, R.N., B.S.

The person who can recognize the beginning symptoms of illness, and who calls the doctor early, can save himself and his family much unhappiness as well as financial loss. From the description of the symptoms, see whether you can identify a disease. Remember, early reporting of symptoms to your family doctor often saves a life. (Underline the condition which fits the symptoms. Answers on page 33.)

12-15 correct . . . you know enough to call the doctor.

8-12 correct . . . good, but remember close observance of symptoms is important

under 8 correct . . . poor—you might be dead by the time you thought enough of your symptoms to call the doctor.

1. Coughing, tired feeling, loss of weight:
(a) flu, (b) tuberculosis, (c) bronchitis.
2. Persistent headaches, face flushes quickly on exertion:
(a) eye trouble, (b) constipation, (c) high blood pressure.
3. Pain in stomach, sick at stomach, fever:
(a) appendicitis, (b) constipation, (c) liver upset.
4. Stuffy feeling in nose, dry throat, feeling poorly:
(a) cold, (b) tonsillitis, (c) strep throat.
5. Stuffy feeling in nose, dry cough, sore throat, glands in back of neck swollen:
(a) flu, (b) measles, (c) bronchitis.
6. Place pricked by a needle becomes red, swollen, painful, and hot:
(a) infection, (b) impetigo, (c) boil.
7. Hard lump in breast, increases in size:
(a) wen, (b) mole, (c) cancer.
8. Burning sensation in stomach before meals, pain relieved by food, indigestion:
(a) stomach ulcer, (b) heartburn, (c) dyspepsia.
9. Chilly feelings, pain under right ribs, heartburn, intolerance to fatty foods, sick at stomach, much belching:
(a) dyspepsia, (b) gall bladder trouble, (c) heart trouble.
10. Constipation, pain on moving bowels, bleeding from rectum:
(a) hemorrhoids (piles), (b) cancer, (c) rupture.
11. Loss of weight, increased appetite, increased thirst, loss of strength, increased urination:
(a) thyroid trouble, (b) diabetes, (c) kidney trouble.
12. Hoarseness for some time, feeling of swelling in throat:
(a) cancer of throat, (b) laryngitis, (c) polyps.
13. Growth in neck, nervousness, feeling of pressure in throat:
(a) goiter, (b) cancer of neck, (c) gland fever.
14. Fever, severe aching in joints, swelling of joints:
(a) flu, (b) "growing" fever, (c) rheumatic fever.
15. Become breathless on slight exertion, feet and hands chill easily, ankles and feet swell:
(a) kidney stones, (b) heart trouble, (c) varicose veins.

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I Can Take It or Leave It, But Can You?

(Continued from page 15)

once for two years, and had been completely deprived of the drug during that entire time. Within an hour of his release he had procured a further supply. There came to my mind the old saying, "Once a morphine addict, always a morphine addict."

In one State it was found that where attempts were made to cure addicts by gradual withdrawal only two per cent stayed away from the drug after discharge. When abrupt withdrawal was instituted, only the rare addict showed up for treatment, but about fifty per cent of these were cured.

Another case comes to my mind—that of an elderly lady who began taking phenobarbital for insomnia. Without the knowledge of her family she got by on an open prescription for seventeen years. When she required morphine for a fractured hip, she almost immediately became addicted. It was relatively easy in a sanitarium to break the habit, as far as outward appearances were concerned, by simply withholding the drug. However, she insisted from the very beginning that she be permitted to return to the nursing home in a near-by city so that she could be near

her relatives. Hardly had she left the sanitarium when she destroyed a summary of her progress, tried to bribe the ambulance driver to buy her gin, and sent a relative to collect sedatives from the fellow passengers on the boat on which she was making a short run, and was perfectly furious with her relatives because they would not sell all her earthly possessions to provide her with ready cash whereby obviously she might secure morphine from outside sources.

Such is the power of habit. To overcome, the essential ingredient seems to be a little will power. For those who feel the need of divine aid, and there are many, it takes but a little faith, "as a grain of mustard seed," and that which seemed a mountain is cast into the sea.

There are aids not to be despised, such as simple diet and abstinence with regard to tea, coffee, and spices. Steam baths and other forms of hydrotherapy are best administered in a sanitarium where smoking and the using of alcoholic beverages are prohibited. As a rule, it is advisable not to venture forth to face the usual temptations and scoffers for two or three weeks. Any further admonition would be that it is perfectly all right to fool oneself out of a wrong habit, but dangerous to fool oneself into believing that "I can take it, or leave it alone."



JUST FOR BOYS AND GIRLS

Conducted by VEDA S. MARSH, R.N.



The Health Quiz

MOTHER, mother," called the Little Jays as they came in from school one blustery day in March. They found Mother and Tommy in the front room, where a cheery fire was blazing in the fireplace.

After taking off their snow suits Joan and John curled up on the davenport beside Mother to tell her of the happenings at school.

"We had a quiz this afternoon."

"A quiz?" said Mother. "What did you have a quiz on?"

"Oh, it was not a hard one; at least we did not think it was hard. It was a health quiz—questions about health that really anyone ought to know. I brought mine home. I'll get it and show it to you."

"I have mine in my pocket," said John.

They produced their papers and began to tell Mother about them.

"The first question was sort of tricky," said Joan. "It had three correct answers. We had to check what we thought were the correct answers."

"1. Milk is a necessary food for growing children. Each day we should drink:

- a. One pint. — d. Four glasses.
- b. Two pints. — e. One quart."
- c. Three glasses.

"It was really a test of our arithmetic, for two pints, four glasses and one quart are all the same amount."

"2. Long hours of sleep are necessary for healthy growing boys and girls. At eight to twelve years of age we need each night the following amount of sleep:

- a. 10 hours. — c. 11 hours.
- b. 12 hours. — d. 9 hours."

"We have studied about sleep, but some could not remember how much we need. Eight o'clock seems so early for twelve-year-olds to go to bed."

"Yes, but that much is necessary when you are growing rapidly."

"3. Good posture includes the following:

- a. Chin in. — e. Abdomen relaxed.
- b. Chin out. — f. Shoulders back.
- c. Stand tall. — g. Chest up.
- d. Abdomen flat. — h. Toe out.
- i. Feet parallel, a few inches apart."

"Miss Brown says we do not need to push our shoulders back, for if we stand tall with chin in and chest held high, our shoulders will be in the correct position. If you push your shoulders back, it is such

a stiff position and not really good posture."

"4. It is important to have immunizations for the following diseases before entering school:

- a. Typhoid. — d. Smallpox.
- b. Chicken pox. — e. Measles.
- c. Diphtheria. — f. Mumps."

"Miss Brown said that it would be wonderful if people could be immunized against measles and colds," said John. "There are really many, many things for doctors to discover."

"5. When the air is colder outside than it is in the house, the best ventilation can be obtained with the following arrangement of windows:

- a. Two windows on same side of room open at bottom.
- b. Window open at bottom, and door across room open into hall.
- c. Window open both at top and at bottom.
- d. Windows on opposite sides of room open at bottom for cross ventilation."

"Our ventilation box taught us that the best way to ventilate a room is to have the window open at the top and at the bottom. Then the warm air leaves at the top, and the cold air enters at the bottom."

"6. When reading, it is best to have the light come from—

- a. Over the right shoulder.
- b. Over the left shoulder.
- c. The front."

"When one is reading," explained John, "it is all right to have the light shine over either shoulder. If a person who is right handed is writing, it is best for the light to come from the left, so the hand will not cast a shadow on the writing. The left-handed person could have the light come from the right."

"7. Good foods to produce sound teeth are—

- a. Green leafy vegetables.
- b. Cakes and puddings.
- c. Milk.
- d. Candy.
- e. Whole-wheat cereals."

"Milk is especially important," said Joan. "It takes calcium and phosphorus to build good teeth and bones."

"Another thing that is necessary is sunshine," said John, "and the sunshine vitamin, vitamin D."

"8. Dentists advocate brushing the teeth at least twice daily, preferably after breakfast and at bedtime, for the following reasons:

- a. It removes food particles from around and between the teeth, and these particles might cause decay.
- b. It massages the gums and helps keep their circulation normal.
- c. It helps keep the breath sweet.

"9. A child in good health has:

- a. A clean skin, free from pimples.
- b. Clear sparkling eyes.
- c. Dark circles under the eyes.
- d. Cheerful expression.
- e. Good appetite.
- f. Regular complete elimination of body wastes.
- g. Restless sleep."

"10. Select a well-balanced breakfast.

- a. Glass of milk. — d. Coffee.
- b. Bowl of cereal. — e. Dish of fruit.
- c. Fried potatoes. — f. Whole-wheat toast.
- g. Cake."

"Mother, we are to send our answers in to Aunt Sue. She would also like to have us answer the following:

- 1. We have a Junior Life and Health League.
- 2. We do not have a Junior Life and Health League.
- 3. We plan to start a Junior Life and Health League soon.
- 4. Some of the things we are doing in our Junior Life and Health League are as follows:
- a. _____
- b. _____
- c. _____

"That is a good idea. After supper we shall clear the table, and you can write your letters to Aunt Sue."

"May I write to Aunt Sue?" asked Tommy wistfully. "I can draw her a picture and color it, and I can print my name."

"I am sure she will be very happy to receive a letter from you, Tommy."

And she surely was. She would like to hear from you also.

In sending in your correct answers put number of question down and letters for correct statements as follows:

Question 9. a, b, c, e.

Question 10. b, d.

You may use the key on page 31 to correct your papers before you send them in. This will save time for Aunt Sue, but will let her see how many you had correct.

Suggestions to Teachers:

1. Have an oral health quiz. It could be conducted as a radio program if desired.
2. Have a written health quiz emphasizing the items stressed in classes.
3. Conduct a health question box. Some doctor or nurse might be asked in to conduct this.

Junior Life & Health League

Rules

1. I take two baths each week.
2. I brush my teeth twice daily.
3. I drink milk every day. (Preferably 1 qt. daily.)
4. I wash my hands before eating.
5. I eat daily: vegetables, fruits (fresh, canned, or dried), whole-wheat or enriched bread.
6. I play or work out of doors six days a week when weather permits.
7. I sleep 8 to 10 hours every night.
8. I try to be courteous and cheerful at all times, and do one good deed for someone each day.

Progressive Class Requirements

HABITEER: Observe the rules for two weeks, and continue to keep them.

CONQUEROR: Be a Habiteer for six months, and continue to observe the rules.

LEAGUER: Be a Conqueror for six months, and continue to observe the rules. Enlist one new member in the League. Send in one new subscription to LIFE AND HEALTH.

The Habiteer, the Conqueror, and the Leaguer receive membership cards, and in addition the Leaguer receives a button.

Pledge

I have read the rules of the Junior Life and Health League, and have been observing them for (two weeks), (six months), (one year). I shall continue to observe them, and will read the Boys' and Girls' page each month. Please enroll me as a (Habiteer), (Conqueror), (Leaguer).
of the Junior Life and Health League.

Name

Address

Age Grade

Directions

Copy the above pledge in your own handwriting, sign your name (very plainly), and give your age, and grade if in school. Then write your address and the name of your father or mother. Mail this to Aunt Sue, LIFE AND HEALTH, Takoma Park, Washington 12, D.C.

+ + +

The Dietitian Says

(Continued from page 12)

vitamin A. The greens are rich in iron and vitamin A. The brewers' yeast is exceedingly rich in the B-complex vitamins.

Vitamin-B complex is also found in large amounts in the germ or embryo of wheat and corn, and in the polishings of rice. It is found in lesser amounts in whole-grain foods. Research during the war showed that milk helps prevent nerve shock, and so if a person is finding it hard to sleep and keep calm because of severe nerve strain, it often helps to take as much as two glassfuls of milk at each meal.

Because the stomach and the central nervous system are very-sympathetic it is wise to prepare food in a simple manner, avoiding fried foods, as they are hard to digest, also spice, pickles, pastries, and all rich foods, such as high fat cheese and pork. Meat of all kinds may be avoided to advantage, because milk adequately replaces it. Try using milk to season potatoes and vegetables in place of butter and rich sauces. A simple supper or no supper may result in more refreshing sleep. The meals should be at regular hours and are best eaten slowly with thorough chewing of the food. Daily exercise in the open air and deep breathing exercises are often as important as proper food.

You Are Going to Build

(Continued from page 15)

room inside the structure and the installation of the commode, with chain and all, was a significant step toward the machine-age dwelling. Though this house was a more convenient place to live, no progress was made in the improvement of the general design,



and the stucco box with its ungainly porches and inherent poor taste was only briefly challenged by Frank Lloyd Wright in his attempt to break with the past and permit the free use of materials.

The entrance of the architectural profession into the low-price field in construction and the subsequent recognition of the home owner's need for good design brought about the change from the carpenter-designed structures of the early twentieth century.

The interest in the development of materials and equipment for the small house eventually brought the prefabricated building into its own. This



structure was one solution to the urgent problem of housing during the war emergency and seems destined to play an important role in the alleviation of the all-time shortage of moderately priced homes in the period now before us.

Mass production of building parts is one of the most important factors in the rapid accomplishment and reduction in cost of small house construction. The present shortage of labor and its high cost in the building trades make it necessary to take all available measures to fulfill the nation's need for adequate, low-cost homes for a greater number of people.

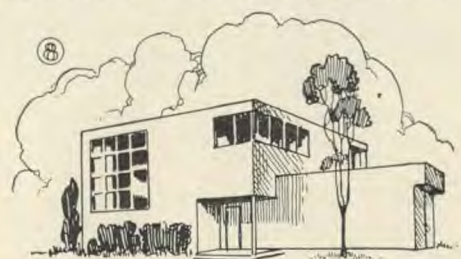
One of the questions asked about prefabricated homes is, "Will they all be alike?" Plans, as given by leading prefabricators, indicate that the majority of manufacturers will provide units which can be assembled according to the owner's wishes, or which can be selected from various groups of stock designs.

The home-design problem remains the most important architectural problem facing the largest number of people. Despite moves toward prefabricated mass production and standardization, the individually designed and built home will, for a good many years, be the object of the concentrated effort of the building industry.

This country is on the way to developing a better standard of residential design, but many of the overimaginative miracles of mechanical and electrical ingenuity described in popular articles, offering an effortless living at a cost within easy reach of all, are yet to be realized in the future. The development of this new type equipment, of course, requires much time and experiment before the new products become available on a large-scale basis. The cost of all this mechanical equipment will never be, as we would wish, within everyone's reach. The rising wage scale and the increased demand for all types of products will naturally force higher prices.

Thus, although many of our homes will be modern and progressive in style (Fig 8)—yes, even daring in design, showing great creative ability and fresh arrangement of space and new methods of construction—there will still be many who will feel that the traditional styles and building methods of long ago will meet and satisfy their immediate needs.

The desire of most of the forward-thinking architects today is to provide a direct, honest, and unpretentious residential architecture expressive of today's moods for a healthful place in which to live in these United States. Only when this goal is achieved will we be producing not a style, not a reproduction, not a prototype, but an architecture which is truly American.



Coronary Heart Disease

(Continued from page 7)

chapter of John the thirty-second verse: 'And ye shall know the truth, and the truth shall make you free.'

The discovery of the truth concerning the heart and the circulation takes in a tremendous number of medical names through the centuries.

The greatest step in ascertaining the truth about the heart was taken by William Harvey, whose classic experiments are known to practically everyone. Unlike Galen, he was not content merely to surmise and reason about how the body worked. He studied his own body and the bodies of his patients, and dissected the bodies of animals. From the hearts of sheep and other animals and from observation of the blood flow in his own veins he demonstrated the circulation of the blood, upsetting the old theories that the arteries were full of air. Harvey never exactly knew how the blood got from the arteries to the veins, but he surmised correctly the network of invisible vessels which Malpighi, who had the advantage of microscopes, later demonstrated.

The experimental method advocated in the eighteenth century by John Hunter, who discovered the placental circulation, which feeds the unborn child, is an important part of the truth-seeking process. It was William Hunter, John's younger brother, who responded to young Edward Jenner with his famous injunction, "Don't think, try. Be patient, be accurate." Young Jenner had come to Hunter with the well-conceived idea that smallpox and cowpox were one and the same infection. Jenner had observed that milkmaids with cowpox never thereafter got smallpox, and he came to Hunter with the suggestion for a process of vaccination by means of cowpox to prevent smallpox. In response to Hunter's injunction, Jenner worked for twenty years before he announced his classic discovery, vaccination, which stands pre-eminent as a preventive medical procedure and as a pattern for scientific investigation.

Later Jenner was to do his utmost to conceal from John Hunter the nature of Hunter's disease, which, according to Hunter's own words, caused him to freeze in stonelike immobility, and, as he observed himself in the mirror, to describe his appearance as that of a dead man. John Hunter had a difficult and insecure childhood and a poor education. As a result of his tre-

mendous drive to overcome these handicaps, he suffered from angina pectoris for twenty years, the result of coronary sclerosis. He observed, "My life is in the hands of any rascal who chooses to annoy and tease me." His death actually occurred in a heart attack which came on after a professional argument.

Among modern investigators who have contributed to the knowledge of the heart are the renowned Sir James MacKenzie, whose clinical descriptions of heart disease and its treatment are modern classics; and Doctors James B. Herrick and Ludvig Hektoen, who demonstrated clinically and pathologically the disease entity known as coronary thrombosis.



The fourth chapter of Matthew, the fourth verse, reads, "Man shall not live by bread alone, but by every word that proceedeth out of the mouth of God." "This is just another way of saying," Dr. Peete emphasizes, "that we should not try to overcome an insecure state of mind by material wealth alone. We need the spiritual, cultural, and other natural phenomena to furnish rest for the vascular system; and the physiological research contributed by Bernard, Pavlov, Cannon, and others has proved this to be a physiological fact."

Proceeding out of the mysterious unknown, through the efforts of scientific investigators, came such understanding of the heart and its function as was contributed by Claude Bernard. His great contribution to the understanding of circulation was the discovery of the nerves which control the contraction or dilation of the arteries, and his work served in part as a basis to that of Cannon, which came later. Claude Bernard expressed in his own words the attitude toward scientific in-

vestigation which makes for modern progress:

"Put off your imagination as you take off your overcoat when you enter the laboratory; but put it on again as you do your overcoat when you leave the laboratory. Before the experiment and between whiles, let your imagination wrap you round; put it right away from you during the experiment itself lest it hinder your observing power."

With such an approach his experimental work was factual and realistic.

The Russian investigator Pavlov, through his experiments on conditioned reflexes, also added to our knowledge of the heart action. The response of the circulation to emotional stimuli such as joy, fear, and anger was demonstrated from the physiological experiments of Walter B. Cannon, who showed how the adrenal glands pour secretion into the blood, mobilizing the resources of the organism for fight or flight. Cannon, in his book *The Wisdom of the Body*, also demonstrated the interrelationship and the finely balanced co-ordination of the body and its response to environment and mechanical or emotional stimuli. The more appreciation of physiological truth accumulated, the better the doctors understood the handling of heart disease.

In modern days it is written upon physiological records what the condition of the heart is, and the writing is done by the heart itself. The original investigators in making the heart write its own story worked on animals only, exposing the heart and enclosing it in a pressure chamber, through which the heart impulses were transmitted to a moving pen against a smoked paper on a revolving cylinder. Later, instruments were devised for transferring the tracing of the pulse at the wrist through an inked pen to a moving strip of paper, and so the heartbeat was captured for detailed study. A refinement on the pulse tracing is the electrocardiogram, based on the development by Einthoven of the string galvanometer, an instrument capable of recording infinitesimal electric currents such as are produced by the heart in its contractions. By recording the deviations of the string on a moving photographic paper, the modern electrocardiogram is produced.

Roentgen with his discovery of the X-ray added to the means by which the heart can be made to record its condition. By the X-ray plate or by observ-

ing heart action on the fluoroscopic screen, information is derived as to the size, position, and activity of the heart. It is written indeed, and the heart is doing its own writing.

Again, in the sixteenth chapter of Matthew, the twenty-fifth verse, it is written: "For whosoever will save his life shall lose it." Here is the key to the prevention and treatment of heart disease. There are many passages in the Gospels which could be added. Jesus pointed out to His disciples that they need take no thought for the morrow, what they should eat or what they should wear; and pointed to the lilies of the field, who neither toiled nor spun, yet outshone Solomon in all his glory. He pointed to God's knowledge of the fall of every sparrow, and assured the disciples that they were worth infinitely more than a sparrow.

In these modern days we are beginning to realize the tremendous importance of worry, insecurity, impatience, and impulsiveness as causes for diseased organs. To take no thought for the morrow was never intended to mean encouragement of laziness and shiftlessness; it *was* intended as advice against worry. It was a reassurance against insecurity. It was a counsel against restless, nagging impatience, and advice against the unstable, excitable impulsiveness which calls too often upon the physiological mechanisms demonstrated by Cannon.

In Dr. Peete's own words, read the summary of his enlightening exhibit:

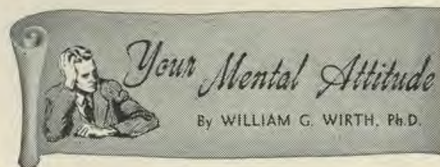
"The instinct of self-preservation causes distinct conditioned reflexes to be set up in early life. When the environment is insecure, as in loss of parents by divorce or death, financial struggle or illness in family, inadequate schooling and habits of worry, a state of anxiety may follow, manifested by emotions of fear, anger, rage, temper, jealousy.

"*Behavior.* Very practical—aggressive or timid (fight or flight). Works long hours, very little recreation. Serious minded, conscientious, worrier, impatient, selfish.

"*Recreation.* Emotional, stimulating movies, detective stories, prize fights, wrestling. Rarely goes to art galleries, musical shows, churches. Lack of interests other than work.

"The aggressive drive to overcome this insecurity is the main cause for overwork and worry that leads to arterial degeneration."

It is written: "He that hath eyes to see, let him see."



A Hobby—Helping the Other Fellow

THOSE who read the recent article in one of our popular magazines about Singing Sam, the New York City bus driver, received a great thrill and soul uplift in learning of the "personal service," the sincere and wholesome interest this lowly servant of transportation takes in his many passengers in this metropolis, said to be "notoriously the most impersonal city in the United States." Those who ride with Sam are not made to feel that they are just routine, run-of-the-mill customers. His ever cheerful attitude, his prompt solicitous attention to their convenience, his deep understanding of their needs, and his encouragement have had their effect. Many New Yorkers call him blessed. He has been offered better-paying jobs; but, no, he likes and prefers to ride along with the many who daily accompany him, since, as he expresses it, he sort of makes "a hobby of trying to make people feel happier. It's more fun than anything else, I think." What more satisfying hobby could one have than that, and one that would bring better returns! This is an avocation worth thinking about.

Life is hard these days, with its increased economic pressures and burdens, its anxious forebodings about an uncertain future; but we shall not make it easier by allowing ourselves to be completely absorbed in our own interests and so distressed by our own sorrows. Listen to our bus driver again about running his vehicle: "It's hard work, and I don't earn very much, but my day goes by like a breeze. We all have plenty of troubles, but they should be left where they belong." In commenting on this the writer of the magazine article adds, "Sam's trouble, for years, was a crippled wife whom he adores, bedridden until a recent cure. But no one, except a few close friends, ever knew about it."

We all want to be happy, particularly in these times when it is such a rare article

of human commerce. However, it is not to be found in the one-way traffic of self-interest. Lord Byron never wrote more truly than when he penned, "All who joy would win must share it, happiness was born a twin." Ponder this statement of Vash Young: "I make my living by selling life insurance; I make my happiness by trying to be worth something to others and to myself." The very order of words Young uses here emphasizes a salient truth. To be, first, worth something to others by being considerate, kind, understanding, opens the avenue to being worth something to oneself. It always works that way. What Sam, the New York City bus driver, finds today in the pronounced impersonal rush and throb of the human life of a great metropolis is but the persistent, if dimmer, reflection of what the Galilean found two thousand years ago. None can deny that it richly paid Him to take an interest in the lives of those about Him, that it gave Him the real fun, shall we pardonably say, of living. And it further cannot be denied that this divinely exalted altruism, this interest in others that made Him outstandingly the Son of *man*, has reacted, as it always does upon Himself in making Him abide and grow in the interest of his human fellows.

The quickest and surest way for a man to sink into oblivion is to live altogether for himself. Having left no impress upon others for good, how can memory's engravings remain for the reading of future generations? The only immortality any of us shall receive here—if we may so speak of the lingering remembrance any will leave when we shuffle off this mortal coil—is the blessing, the good, the helpfulness, we have deposited in the minds and souls of those who have come our way. The Great Emancipator was right. When we depart earth's battleground, people will not likely remember what we have said here; they will not, perhaps, recall our position, our station; but they will certainly remember what we have done here in making life easier and better and happier. It is a great thing to so live that we can forget ourselves into a future of abiding recollection by our earth travelers, to be a "Singing Sam" on the daily bus ride with our fellow passengers.

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Do you know how to relax? The series of articles by Clarence W. Dail, M.D. on "Relaxation" which appeared in LIFE AND HEALTH is now available in handy reprint form. This booklet tells you not only **why** you need to relax but exactly **how** it can be done.

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Biological Soil Building

(Continued from page 11)

night into mineral-rich, water-soluble plant food.

And what is more important still (if that were possible) is the near-miracle that is performed through the action of the earthworm, whereby the dead, inert minerals in the soil are re-created and transformed into available plant nutrients. Of their almost unbelievable contribution to soil fertility and agriculture in general, Dr. George Sheffield Oliver, in his book *Friend Earthworm*, reports: "Most soils are deficient in elements that are necessary for plant life, not because the elements are not present, but because they are unavailable to the plant roots. All the elements that are in the soil, but which are *hidden and unavailable to the plant roots, are broken down by the earthworm and made available*. Man has yet to invent, devise, or manufacture any machine, any solid or liquid fertilizer as efficient as the earthworm. In this invertebrate animal, nature has provided a *perpetual soil builder*." (Italics mine.)

Government experiment stations have discovered the marvelous extent of this program of soil building and fertilization in their testing laboratories. Here it has been determined that earthworm castings contain up to three hundred per cent more magnesium, five hundred per cent more nitrogen, seven hundred per cent more available phosphates, and, believe it or not, eleven hundred per cent more potassium than the soil from which they came. What a miracle indeed!

Authorities on the life and habits of this lowly little creature tell us that an earthworm will produce its body weight of mineral rich castings every twenty-four hours. Some have estimated that in an acre of rich, humus-filled soil, up to two and one-half million of these little earthworkers can be found. They will weigh in the neighborhood of fourteen hundred pounds. Multiply this by the number of days in the year, and you will agree (if you have not fainted) that no plan of man's devising could possibly equal such a magnificent program of building fertile soil.

Perhaps you can see now why biological soil building is no longer just a hobby with me. Perhaps you will understand why, in all my agricultural planning, *first consideration* is given to my earthworms. This little animal has top priority on my list, and all other considerations are of secondary importance. Whatever is good for the worm, whatever course of action will make him happy and contented, whatever program will increase his activity in my garden, receives the most careful attention and the most profound consideration. In other words, I agree with my friend Frank Hinckley when he said, "If you take care of the worm, the worm will take care of the tree, and the tree will take care of you!" It sounds like an easy philosophy, and his earthworms actually made Frank Hinckley a wealthy man.

Our readers can well imagine my delight when a little less than two years ago I discovered a simple plan of procedure that increased earthworm activity in my garden and under my fruit

trees more than five hundred per cent! To make a long story short, this innovation in orchard and garden practice consisted in applying leaf-and-rock mulches around the base of fruit trees, grape vines, berry bushes, and between rows of vegetables.

In reading *Trampling Out the Vintage*, by Joseph Cocannouer, I came across this interesting passage: "It was in Bavaria where I learned for the first time that stones spread over the ground between the rows of growing crops formed an excellent mulch for preserving the soil moisture." Later I read with growing enthusiasm Mr. J. I. Rodale's editorial in *Organic Gardening* entitled "Rock Mulches." Immediately I took all the rocks I had gathered during the previous two years for an outdoor fireplace, and placed them around my newly planted citrus trees. Within one year some interesting, if not startling, results were observed, especially with regard to the tremendous increase in the earthworm population and activity under the trees and vines where the rock mulches were applied over the heavy three-inch leaf mulches.

Not long after the application of the first rock mulches, I noted one interesting fact in addition to the fine appearance and rapid growth of the trees and vines. My three-inch leaf mulches were disappearing as if by magic! (See plate 2.) In my boysenberry patch (without rocks) it took from nine to ten months for the earthworms to devour a three-inch mulch and deposit it in the soil, whereas under the rock mulches the same amount of leaves vanished completely in only sixty days! (See plate 5.) This noteworthy fact indicated that conditions created by the presence of these stones stimulated earthworm activity five hundred fold! Confirmatory evidence of the phenomenal increase in earthworm activity was also demonstrated by the almost unbelievable amount of castings thrown up by the worms.

Scientists tell us that the average amount of castings thrown up by earthworms around the circle of the earth is one inch in five hundred years. A million of these little earthworkers in an acre of fertile soil will throw up one fifth of an inch of castings in the course of a year. With heavy leaf mulches in my berry patch this record was further stepped up to one and one-half inches in a single year. But with leaf-and-rock mulching I have discovered in some cases as much as three

Heating Compresses

(Continued from page 17)

PROCEDURE

1. Place dry flannel on bed with cotton cloth wrung nearly dry of cold water over it.
2. Let the patient lie back on bandage. Have lower edge below hip bones.
3. Pull each end of wet cotton cloth tightly over abdomen.
4. Cover quickly and snugly with both ends of flannel.
5. Pin darts at each side to make bandage fit.
6. If oiled silk is used, it should be placed inside of flannel.

PRECAUTIONS

1. Wash area with cold water on removing bandage.
2. When difficult for the patient to warm up the bandage, the wet cotton cloth may be placed over the abdomen only.
3. A hot water bottle may be used outside the flannel over stomach area.

INDICATIONS

1. Atonic digestion (slow digestion).
2. Constipation.
3. Insomnia.

inches of castings thrown up in only four months! (See plate 6.) As far as I know, this is an all-time championship record in biological soil building.

Results? Worm-free apples, peaches, pears, grapes; oranges fourteen inches around the middle; and lemons ten inches in circumference and four and one-half inches long, that yield a whole glassful of delectable juice; grapevines that produce up to two hundred bunches in a single season, and bear specimen bunches only five months after planting the little rooted canes! All this without the benefit (?) of so-called pest controls. For there is no spraying or dusting in my garden.

Oh, yes, I forgot to tell you that one

inch of compost humus is applied out to the drip line of the branches each year. It is placed under the leaf-and-rock mulches, but is not worked into the soil. My earthworms do that job for me without disturbing the tiniest tender rootlet. As we view the intricate, yet simple laws governing soil health and fertility, with Samuel Morse, inventor of the first telegraph, we are led to exclaim, "What hath God wrought!" Truly in nature we have a revelation and manifestation of Divine Providence throughout the universe, and woe to that man or combination of men who try to provide a "substitute" for these heaven-born laws governing natural soil fertility.



Spring Gardening

THERE has perhaps never been a time when it was more important for every American citizen to grow a garden, and a good one, than it is this year, with the government urging as many citizens as can do so to grow their own vegetables. Surely we who recognize that it was God's original plan for every man to work in his garden will not fall behind in this.

Those who grew a garden last year should do a better job this year, for if the soil was properly tilled it will be in much better condition for planting this year. But it should be refertilized this spring, unless this was done last fall.

Garden seeds are not too plentiful this year, so none of us should plant them in poor or ill-prepared soil. Because it is vitally important that real returns be secured from every seed planted, be sure all soil where you intend to plant a garden is thoroughly worked, fertilized, and all clods pulverized. For best results, make sure your soil is in perfect condition for a foot deep. When this is done, everything is ready for planting.



New Alldouble Petunia
Burpee Orchid

The following seeds should be planted just as soon as the soil can be properly worked: Onions, spinach, carrots, beets, radishes, lettuce, parsnips, and peas. All these seeds germinate better in cool or even cold weather, and the quickly maturing varieties will not really thrive after the weather gets hot.

Besides the above, there are several vegetable plants that should be set out at once, for they are lovers of cold weather but grow slowly enough that the seeds should be sown early and the plants set out as soon as really hard freezing weather is over. Some of these are cabbage, cauliflower, and broccoli.

Kohlrabi and salsify may be planted at the same time as the above list, or they may be planted a month later. Mustard (white seeded, Southern curled for boiled greens) may be planted at either time. Many do not know it, but there are few vegetables that contain so many vitamins and mineral salts as mustard, and all objectionable elements are lost in cooking. Mustard is more wholesome than spinach and thrives after the weather is too hot for spinach.

None of the seeds we recommend planting at this time, except peas, should be planted more than an inch deep, or thicker than one or two seeds to every inch, or even two, in the row.

Some may have very little room for their gardens. To such we would say that carrots and parsley have decidedly ornamental foliage, and if planted as a border around flower beds, they are as beautiful as any border plant that can be used. They will supply us with our vegetables, too.

Onion, carrot, salsify, and parsnip seeds are all rather slow in germinating. It is often desirable to cultivate these before they come up, in order to keep down early weeds. If, when planting, you drop radish seed every foot or two in the row of any of these plants, you can tell where the rows are, and so cultivate freely. Pull the radishes as soon as they get large enough to eat, and so grow your entire supply of

2 Bushels of Ripe TOMATOES from ONE VINE

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radishes without using extra space. Leaf lettuce may be used in the same way, as lettuce seed germinates as quickly as radish seed, and the plants grow equally as rapid.

If you take advantage of such economies of space as there are, you will be surprised how little space it will require to grow all the vegetables you can use, and how little time will be required to hoe them.

Last summer we saw something that was surprisingly attractive. We visited a home where there was a rather large porch on the south side of the house. Instead of planting morning glories or some similar vines for shade along this porch, strings had been stretched every six inches from the top of the porch to pegs driven in the ground. The soil had been worked up well, and pole Lima beans had been planted. The vines had been trained on these strings. We have seldom seen anything more beautiful for this purpose, and they produced all the green beans the family could use. Try it, and you will be surprised even at the beauty of these flowers as well as vines.

If you have a back-yard fence, this can well be covered with bean vines, and we are glad to say that the new pole bean, Decatur, produces enormous yields of stringless beans of unusual quality when cooked as snap beans, and has white seeds that are excellent as dry beans. This is an advantage, for pole beans bear many more beans than do the same number of bush beans, and they will bear when the weather is too hot for the bush varieties.

Those who grow their own roasting ears, and yet have a small garden, may not know that even bush beans will grow and produce a fair crop between the hills and rows of corn. They are the one important vegetable that thrives in partial shade.

Correct Answers to Junior "Life and Health League" Quiz on Page 26

- | | |
|-------------------|-------------------|
| 1. b, d, e. | 6. a, b. |
| 2. c. | 7. a, c, e. |
| 3. a, c, d, g, i. | 8. a, b, c. |
| 4. a, c, d. | 9. a, b, d, e, f. |
| 5. c. | 10. a, b, e, f. |

Some High Lights of Medical Advancement

(Continued from page 4)

plexity of life these days, with its tensions and uncertainties, has produced a state of nation-wide nerves. We may try to push these aside and out of our thinking, but they will take their toll of hundreds of lives as they wrangle away in the subconscious mind, making their appearance in mental quirks or numerous body aches and pains for which there can be found no germ and no specific medicine. LIFE AND HEALTH unhesitatingly recommends as the cure for man's emotional instability and fears a belief and trust in a power beyond human ken—some old-fashioned religion, if you please. Science has come face to face with the fact that it alone is not the complete answer to giving man a healthy body. He must also have a healthy mind and a clear conscience.

+ + +

Maybe It's Your Kidneys

(Continued from page 19)

often as too much acid. The urine is normally slightly acid, and a person's diet is the most important factor which controls the acid-alkaline balance of the urine. An over-alkaline system is helpful in certain kidney disturbances, but too much alkaline food in the diet, continued over a long period of time, is harmful and may cause kidney stones or urinary infection. The most highly alkaline foods are the citrus fruits. All fruits, with the exception of a few such as prunes and cranberries, are alkaline in reaction. Fruits are, of course, healthful foods and should not be discarded because they are alkaline; but on the other hand, they should not be taken in excess to the exclusion of the acid foods. A balanced diet is best for the proper functioning of the body as a whole, and especially of the kidneys.

It is thought by many persons that proteins are hard on the kidneys. This is true only if the proteins are taken in excess. In fact, too little of this basic food will result in swelling of the kidneys and poor function. Many men and women who were prisoners of war and in concentration camps during the past war were fed diets deficient in proteins. They lost all ambition and initiative, their legs and feet became swollen, and the mechanism of body resistance to disease became so im-

paired that many became ill and died. Even when the kidneys have been weakened by disease, proteins are called for, and diseases in which large amounts of proteins are eliminated in the urine sometimes demand more than the average amount of protein in the diet in order to replace loss through the kidneys.

The dietary faddist who excludes all proteins, such as milk, eggs, beans, and nut foods, from his diet is very likely to be in a partially starved state because of an insufficiency of proteins for proper functioning of the body. It is not always necessary to eat meat to supply enough protein, for there are vegetable proteins which are usually available and which are satisfactory. Remember that the moderate use of proteins in a normally proportioned meal is one way of preventing kidney disease.

A deficiency of vitamins in the diet is sometimes a factor in producing kidney disease, especially the formation of stones. It is well known that urinary stones occur more frequently in some parts of the world than others, notably in the northeastern part of India. In these places there is a lack of vitamin

Anger unrestrained is more hurtful to us than the injury which provokes it.—Seneca.

A in the food, the climate is warm, and there is considerable alkali in the water. A few of the foods which are rich in vitamin A are as follows: All the yellow vegetables, such as squash and carrots; the green leafy vegetables, such as lettuce, romaine, spinach, escarole, Brussels sprouts, and broccoli; tomatoes, apricots, butter, cream, milk, egg yolk, and cod liver oil. Although plenty of water and vitamin A are not certain insurance against stones, they are important items in the prevention of this trouble.

Deficiency of vitamin B may result in certain types of Bright's disease. This vitamin is found in wheat germ, dried yeast, whole cereals and breads, green leafy vegetables, avocado, and malted milk. The damage which a deficiency in vitamin B causes to the kidneys may be permanent, even though the prescribed amount of the vitamin is taken later. It is well, in planning the daily menu, to include generous amounts of foods containing these vitamins. Sufficient minerals are usually provided by these same foods.

A Pleasant Place IN WHICH TO GET WELL

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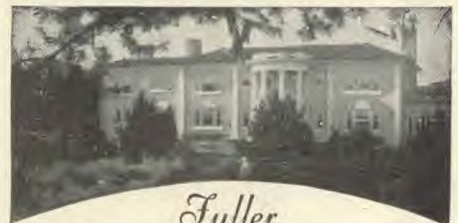
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Large quantities of alcoholic beverages taken into the system are sometimes a cause of kidney disease. This is no mere fancy. What happens is that the part of the kidney which attends to the work of eliminating the poisons becomes hardened, as a result of constant irritation, ceases to function, and in time may lead to uremic poisoning. Many persons working on a tension are inclined to buoy themselves up temporarily by drinking many cups of tea or coffee. These beverages have a stimulating effect on kidney secretion, and if drunk to excess when overwork



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Throughout the United States, and in many other countries, is found a distinctive chain of medical institutions known as Sanitariums. To the many thousands who have been guests of these unique health institutions, the name Sanitarium describes not merely a hospital, though the best of medical care is given; nor does it describe simply a rest home, though many come primarily for rest. Rather, it denotes a unique combination of both. The word Sanitarium also carries with it the idea of health education and disease prevention, for those who come to these health centers receive instruction in the principles of healthful living.

In addition to the Sanitariums whose announcements appear in this issue, the following belong to this distinctive chain of health institutions.

Boulder-Colorado Sanitarium, Boulder, Colorado
Florida Sanitarium, Orlando, Florida
Fuller Memorial Sanitarium, South Attleboro, Massachusetts
Georgia Sanitarium, Route 4, Box 240, Atlanta, Ga.
Glendale Sanitarium, Glendale, California
Loma Linda Sanitarium, Loma Linda, California
Madison Rural Sanitarium, Madison College, Tenn.
Mountain Sanitarium, Fletcher, North Carolina
Paradise Valley Sanitarium, National City, California
Pisgah Sanitarium, Box 1331, Asheville, North Carolina
Porter Sanitarium, 2525 S. Downing Street, Denver, Colorado
Portland Sanitarium, 932 S.E. 60th Avenue, Portland, Oregon
Resthaven Sanitarium, Sidney, British Columbia, Canada
St. Helena Sanitarium, Sanitarium, California
Walla Walla Sanitarium, Walla Walla, Washington
White Memorial Hospital, 312 N. Boyle Avenue, Los Angeles, California
Wytheville Hospital, Wytheville, Virginia

and overworry have already placed a strain on the kidneys, they may lead to eventual serious trouble. It is not unusual to see a man sit down at the table and, before he has even tasted his food, sprinkle it liberally with dashes of salt and pepper. Salt is normally present in body fluids, and a certain amount is required. Overdoses, however, cause swelling and other disturbances of the kidneys, and in some kidney diseases its use is markedly restricted. Pepper should be avoided, for it is a kidney irritant.

There is much to live for and to be well for. No one can enjoy life to the fullest without good health. It is worth while to have periodic examinations, to learn to relax, and to eat properly. Although disease cannot be entirely avoided by this program, it will help to keep you healthy.

+ + +

**ANSWERS TO "ARE YOU HEALTH WISE?"
ON PAGE 25**

- | | |
|--------|--------------------------|
| 1. (b) | 9. (b) |
| 2. (c) | 10. (a) and possibly (b) |
| 3. (a) | 11. (b) |
| 4. (a) | 12. (a) |
| 5. (b) | 13. (a) |
| 6. (a) | 14. (c) |
| 7. (c) | 15. (b) |
| 8. (a) | |

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Avoid harsh laxatives!

MILLIONS KEEP REGULAR WITH HEALTHFUL LEMON IN WATER



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IN A GLASS OF WATER



FIRST THING ON ARISING



Lemon in water—when taken first thing on arising—is all that many people need to insure prompt, *normal* elimination day after day.

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Generations of Americans have taken lemons for health—and generations of doctors have recommended them. They're among the richest sources of vitamin C; supply valuable amounts of B₁ and P. They alkalinize and aid digestion.

Not too sharp or sour, lemon in water has just enough tang to be refreshing; clears the mouth, wakes you up. Try it! Give it time to establish regularity for you.



Keep regular the healthful way!

LEMON in WATER
—first thing on arising



BY ALICE G. MARSH, M.S.

Fresh Yeast vs. Dried Yeast for B Complex.—Fresh yeast and also dry live yeast suitable for baking are not good sources of dietary thiamin. It is believed that the live yeast cells in the digestive tract compete with the host, not only for the thiamin present in the yeast but also the thiamin in the other ingested food. And it seems that the host comes out the loser! But when the yeast is killed by commercial drying process, or by treatment with boiling water, the thiamin is released for absorption, and there is no interference to the absorption of thiamin in other foods. It is likewise true that the yeast must be killed before the riboflavin is available for absorption. So although yeast is a good source of the B vitamins, the yeast plants themselves are going to make use of them in their own life processes (as well as B vitamins from other sources) if a person eats yeast in the living state.

Fracture and Calcium in the Aged.

It is believed by some investigators that falls of older people are caused by broken bones rather than broken bones being caused by a fall. The bone, weakened by poor nutrition, breaks and causes the person to fall. Studies at the Iowa Experiment Station have shown that many people of fifty years or older, especially women, show a demineralization of the skeleton, known as senile osteoporosis. This condition may come from too little calcium in the diet, and often leads to broken bones. Women over fifty usually drink only a cup of milk a day, whereas they need at least a pint of milk to furnish enough calcium, protein, and phosphorus for the proper upkeep of their bodies. Older people do not lose their ability to store calcium and other minerals, contrary to common belief.

Vitamin Need With Fatty Foods.—A high fat diet increases the need for riboflavin, a B-complex vitamin. Again it is interesting to note that milk, a high fat food, is one of the richest natural sources of riboflavin.

History and Diet.—A history of the people of the world in terms of diet would doubtless show that initiative, progress, success, and happiness go hand in hand with an abundance of food and a good diet.

Cookingware and Vitamin C.—Experiments conducted by the Department of Agriculture have shown that copper and brass utensils are particularly destructive of ascorbic acid (vitamin C), and warn against the use of copper or brass strainers in straining citrus juices or tomatoes. They also suggest that citrus juice not be strained at all, for considerable ascorbic acid remains in the pulp, which is discarded after straining.

Pellagra and Protein.—The cause and cure of pellagra amounts to a tangled knot, but now and then a strand is straightened out. A recent finding along this line revealed that although the vitamin nicotinic acid (niacin) is a specific treatment for the symptoms of pellagra, the symptoms also can disappear when tryptophan (one of the amino acids of protein) is given. The body itself is able to synthesize or make quantities of nicotinic acid when the tryptophan of the diet is increased.

Butter vs. Vegetable Fat.—From the controversy of recent years regarding the nutritional superiority of butter fat over certain vegetable fats, one recent report has emerged that there is a growth-promoting factor, vaccenic acid, present in summer butter. The evidence on rat growth offers the most evidence to date in support of the superiority of butter as a fat, but it remains to be seen whether this observation will be confirmed or lead to further controversy.

Sugar and Intestinal Bacteria.—The requirements for vitamins varies with the kind of carbohydrate used in the diet. In all studies where sucrose (cane sugar) was the carbohydrate given, the vitamin requirement was highest. Dextrin, starch, and lactose (milk sugar) are the carbohydrates that give the most favorable or sparing effect upon the vitamins. And here is the probable explanation of this nutritional oddity: Doubtless many of the vitamins can be synthesized or manufactured in the intestinal tract to a certain extent. But to accomplish this, a friendly bacterial condition must be present in the intestine for the growth of the bacteria which are responsible for the synthesis of the vitamins. But in turn the proper bacteria cannot thrive without certain carbohydrate products, and evidently these products result from carbohydrates such as starch that break down and absorb slowly. So, with apologies to "This Is the House That Jack Built," dextrin, starch, and lactose are the carbohydrates that give best food for the bacteria to live on, that give the best conditions for the vitamins to be made from, that are needed for man to live on.



QUESTION: *How can I make delightful Meatless Meals based on sound nutritional practice?*

ANSWER:

Follow the Basic 7 Plan of nutrition and use in the place of meat one or more of the 7 ready-made foods illustrated here.
*For BASIC 7 PLAN see below

MEATY CUTLETS



Made from wheat gluten and brewers' yeast extract. Dip in crumbs and broil or fry until brown. Low in starch, high in protein.

CUTLETBURGERS



Add one egg to two cups cutletburger, one tablespoonful potato meal or crumbs, and onion or celery to taste. Form into patties, broil or fry until brown. Serve with gravy or in hot bun. Low in starch, high in protein.



Ready-to-serve Chop Suey
A complete mix—heat and serve. Contains wheat gluten, soya sprouts, chopped vegetables, and seasonings. Low in starch, high in protein.



A new formula for Chili Con Carne without meat or pepper. Made of soya beans, wheat gluten, tomato purée, onions, and special seasonings. Low in starch, high in protein.

Vegetable Cheese Braised
—cut in one-inch cubes and brown in oiled pan, add browned onions, creole sauce, or tomato sauce. Low in starch, high in protein.



Giant Green SOYA BEANS



Ready to serve hot or cold, like peas, or mix with corn, or bake in casserole covered with tomato and sliced onion. Low in starch, high in protein.

Tender Edible SOYA BEANS In Tomato Sauce



Ready to serve hot or cold. For casserole beans add tomato, molasses, and onion to taste, and bake brown. Low in starch, high in protein.

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*This contains the Basic 7 Plan of nutrition.

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That was why there were no cases of blood poisoning or gangrene in Lister's ward at Glasgow hospital. Believing in Pasteur's germ theory of wine fermentation, Lister at once concluded there were germs in the air, and that the air around a wound needed purifying if the patient was to live. By painting the wound and using sterile dressings, Lister proved to hostile critics that absolute cleanliness was the secret of lifesaving. Mankind today benefits from the labors of pioneer medical researchers and by the steady improvement made in medical science.

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