60th ANNIVERSARY ISSUE
1885-1945

Life & Health

THE NATIONAL HEALTH JOURNAL

An Anniversary Greeting

from

THE AMERICAN INSTITUTE OF BAKING

(The scientific and educational organization of the baking industry)

TO *Life and Health* ON

SIXTY YEARS OF CONTRIBUTIONS TO THE LIFE AND HEALTH OF THE NATION

During these years too the baking industry has helped build an awareness of the necessity of better health through better foods.

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The Pulse of LIFE & HEALTH

▶ If one is to benefit from the advance of medicine today he must apply the knowledge he has gained from the health officer and the family physician. Page 6.

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The Editor's Comments

THE NATIONAL HEALTH JOURNAL
Founded 1885

Sixty Years of Health Education

SHORTLY after the French Revolution, which was distinguished by its violent attacks on the clergy, a priest was asked what he did during the Revolution. "I survived," he replied. His answer has become classic. There are times when it is a notable accomplishment simply to survive.

This might be said of Life and Health. Sixty years ago, as the historical sketch on page 47 reveals, this journal was founded. An onlooker would have forecast that its chances of survival were small. Some of the distinctive health principles which the journal was founded to promote ran counter to the generally accepted ideas and methods employed in 1885 in the treatment of disease. These health principles have been consistently advocated in these columns through all the sixty years. Yet in 1945 Life and Health finds itself being viewed, not as a faddist publication, but as a sane exponent of sound health instruction for the public.

Naturally we feel heartened by this. We have no desire to boast about the longevity of Life and Health or about the vindication of the principles for which it has stood. But we believe that in this anniversary issue it is not amiss to call attention to the basic ideas and procedures regarding the maintenance of health and the treatment of disease that have governed the journal through sixty years.

Underlying all else in the thinking of the founders of this journal was the firm belief that the individual himself plays a most important part in deciding the degree of health he is to enjoy. They based this belief on the conviction that certain simple rules of living, in regard to such matters, for example, as exercise, rest, cleanliness, and food, are primary factors in good health. Now the individual himself must give life to these rules, and he must be instructed as to the rules. Hence the need of a health journal for the layman. That idea was quite new in 1885. Today, it is essentially the basis on which rests much of the health instruction addressed to the general public by innumerable governmental and private health organizations.

As to the treatment of the bewildering assortment of maladies that afflict mankind, this journal has consistently placed a primary emphasis on three therapies:

1. Mental therapy. We have always believed and stressed the idea that man is one whole, that what affects the body reacts upon the mind and the spirit, and vice versa. Insomnia may be the result of a bad colon, and then again, it may be the result of a bad conscience. Peptic ulcers have a proved relationship to mental and emotional stress. Sixty years ago the interrelationships of mind and body were rarely viewed as significant. Today psychiatry, which is becoming a very important part in scientific medicine, gives much attention to such relationships.

2. Physical therapy. This journal, from its very beginning, has stressed the idea that the prime objective in treating the sick should be to assist nature in its fight against disease by stimulating the bodily functions, such as the circulation of the blood to affected parts. Hence we have stressed the value of water treatments, for example, and massage. Such therapies were considered a bit faddist in 1885, when blind drugging, "shotgun" prescriptions, and powerful cathartics for punishing colons were accepted procedures. Today physical therapy, under the title of physical medicine, holds a place of growing importance in the medical world.

3. Diet therapy. For sixty years we have forthrightly declared that what a man eats, as to both kind and amount, probably has more to do with his health than any other factor. That was considered definitely faddist in 1885, and for many years afterward. We need hardly remind the reader that today diet and the whole subject of nutrition are in the very forefront in all discussions of health, no matter whether those discussions are in scientific or in advertising circles.

To be specific: We have consistently decried the use of highly refined foods, declaring that vital ingredients of the whole-grain products were lost in the milling process. The present enrichment of flour, bread, and various cereals is based on the very premises we have used. Needless to say, we are enthusiastic about enrichment.

(Continued on page 50)

News in SMALL DOSES

▶ Do you specify "iodized" when buying salt? It is recommended, especially in those areas where goiter is prevalent.

▶ According to a Gallup Poll, children under ten have nearly twice as many colds as people in their twenties.

▶ It is estimated that the average person loses approximately half a teaspoonful of salt in a 24-hour period during warm weather. This loss of salt may give one a groggy feeling all day.

▶ During Foot Health Week—June 8-16—the public will be instructed regarding the primary rules of foot health.

▶ Well-designed clothes closets will doubtless be a built-in "must" in postwar homes. Flexible storage compartments will relieve the present inadequate storage space in many homes.

▶ If your dresses have that homemade look, drop a card to the Extension Service, University of Illinois College of Agriculture, Urbana, Illinois, and ask for a circular called "Making a Good-Looking Dress."

▶ Know the definition for evaporated milk? It is a good cow's milk with half the water content removed, packaged in convenient-sized cans, and sterilized for safety and safe-keeping.

▶ The amount of sugar allocated for home canning this year is the same as in 1944. But civilians are told that they cannot go over the quota by 700,000 tons as they did last year.

▶ Add one heaping tablespoon of Horlick's malted milk to a small glass of milk, and you practically double its energy value. It's good for both the preschool and the school child.

▶ Sound teeth and a healthy mouth are vital necessities for general good health and fitness. Four guideposts to dental health are: (1) Eat a balanced diet of the basic seven foods; (2) keep your mouth and teeth clean; (3) be sure your teeth get exercise; (4) see your dentist at least twice yearly for checkups.

▶ The American people like white bread. Over ninety per cent of the bread consumed in this country is white. That's why milling companies enrich white bread instead of producing only whole-wheat bread.

▶ To discover the best washing methods for rayons, the Kansas State College conducted tests on rayons and with results as follows: By gently stretching continuous filament rayon fabrics when ironing them, it is possible to bring these materials back to their original shape. With the spun rayons, however, this method is not practical. Allowance must be made for some shrinkage of spun rayons.

▶ The ear is faster than the eye, say the Sonotone Research Laboratories. Experiments in which persons were asked to press a telegraph key as soon as they heard a sound or saw a light, reacted on an average of about fifteen hundredths of a second when hearing sounds, but took an average of twenty hundredths of a second to respond to lights when flashed before them.

HEALTH for the

THE lifetime of LIFE AND HEALTH has witnessed many of the most spectacular advances in the whole history of medicine. Revolutionary changes which have taken place in the health and medical sciences over the past sixty years are well known to the readers of this magazine. Its pages have faithfully recounted dramatic stories of scientific accomplishments which have contributed immeasurably to human progress.

LIFE AND HEALTH informed its readers of the discovery of X rays and their use to diagnose obscure conditions and to cure cancer; of inoculations to prevent diphtheria. It told of the discovery of the cause and cure of syphilis, and of the sulfa drugs—safe, rapid treatment for pneumonia. For threescore years it has given its readers an accurate account of forward movements in the nation's health.

War has given new emphasis to the importance of national health. The demands of the past three years have demonstrated that the force of the nation rests ultimately in its man power—in the mental and physical vigor of its people. The health structure of this country has successfully withstood the mobilization of millions of men and women in the military forces and in the vastly expanded war industries. Despite serious depletions in our civilian health forces, the spadework of earlier years has borne fruit, and diseases for which we have positive controls have been held in check.

This creditable record is the result of years of progress in strengthening and expanding public health services throughout the country, and in the application of new knowledge to the control of certain diseases. Scientific discoveries have been a paramount influence on the development of public health practice. Thus, any consideration of what is being done and what can be done about our major health problems must begin with a review of the vast changes and improvements in medicine and public health, many of such recent date that we have not yet realized their full benefit.

When LIFE AND HEALTH was founded in 1885, smallpox was rampant in the United States. The typhoid bacillus had just been discovered, and the dangers of polluted water were first being realized. Loeffler had recently isolated the diphtheria bacillus; Walter Reed and his coworkers were yet to prove the mosquito transmission of yellow fever. The cause and cure of syphilis were unknown.

Today thousands of doctors have never seen a case of smallpox. Typhoid fever and diphtheria are approaching the vanishing point. Yellow fever has been eliminated from the United States, and we are well on the road to the conquest of venereal disease.

But, in reviewing our accomplishments, we dare not forget that there are many infectious diseases for which we have no positive controls. We must not take for granted the continuing work required to maintain elementary public health controls of environmental sanitation and immunization. Moreover, during the past quarter of a century a new concept of public health has emerged—a concept that includes personal services to the people as well as impersonal services for the control of diseases. As a result, there have been instituted prenatal and postnatal care of mothers and infants; health services for school children; a new approach to the control of tuberculosis through finding and treating of patients; and ways to stamp out venereal disease by the same approach—by finding and treating the infected individuals.

In measuring our national health we cannot confine ourselves to the health status of any one group. The health of the nation begins with the unborn baby and includes infancy, childhood, adolescence, maturity, and old age. By comparing the nation's health today with that of a generation ago, we can find out whether our chances of living to a ripe old age are greater or less; we can determine what changes have been made in loss of life from particular causes. We can estimate in general terms the amount of ill-health among important groups of the population. We can view the advances in scientific knowledge, in medical and public health practice, made during the past twenty-five years, and from these we can predict the possibilities for future betterment. Finally, we can balance our health assets against our liabilities.

The average length of life in the United States over the past quarter of a century has increased from fifty to sixty-five years. Most of this gain has been made by reducing deaths of infants and by stamping out certain communicable diseases. The practical interpretation of the increase in average length of life, therefore, is that a larger proportion of our population is living to adulthood and old age.

As more people live to be exposed to the hazards of later maturity and old age, however, the death rate from some causes has risen steadily. For example, the death rate from cancer in 1940 was more than ten times the rate in 1880. This is now the second most frequent cause of death in the United States. Diabetes now claims seven times as many lives in every thousand persons as it claimed in 1880.

For many years our accomplishment in saving lives at earlier ages was sufficient to more than balance the deaths of older people. Recently we have not been able to sustain the decline in the general death rate. While we do not anticipate a marked rise in the near future, it appears

HARRY ANDERSON, ARTIST

THE HEALERS

By BERTHA D. MARTIN

Over against the fires of hate,
Where hands are red with the blood of another;
And death and disease implacable wait;
And man forgets that man is his brother;
Lighting the darkness, and staying the curse,
Stand God, the doctor, and the nurse.

Side by side with a skill divine,
Working alike for foe and lover;
Watching white-faced the invisible line
Where man gives up and God takes over.
Unthanked and forgotten despite our demands,
Holding the hearts of the world in their hands.

Thomas Parran, M.D.

FUTURE

A Survey and Forecast by the Surgeon General of the United States Public Health Service

BY THOMAS PARRAN, M.D.

The New Concept of Public Health Includes Personal Services to the People and Impersonal Services for Disease Control

GALLOWAY

evident that maintenance of the current rate depends primarily on controlling the diseases of maturity.

But the concept of national health is not limited to the prevention of premature death. As deaths from certain causes have been averted, we have come to realize that sickness and disability are important elements in the picture. Our estimates show that some twenty-two million men and women in the most productive years of life are annually afflicted to a greater or less extent by serious disabilities or handicapping conditions. In fact, half a million of them are patients in hospitals for mental diseases or tuberculosis. An additional eight hundred thousand are permanently incapacitated by these and other causes.

Thus we see that millions of our responsible adult citizens are handicapped in their pursuit of life and happiness by illnesses or defects which vary in severity. We see, too, that despite our improved death record, despite the increased life expectancy of our children at birth, many of the great killers of a generation ago are still great killers.

Scientific advances over the past twenty-five years have occurred mainly in three fields—nutrition, psychiatry, and chemotherapy—and in the direct application of the newer knowledge in these and many other areas.

As a result of the development of scientific nutrition we are thinking today of what our knowledge of man and his nourishment may accomplish in building a nation of people more healthy, more vigorous, and more resistant to sickness. We know that many deadly and crippling diseases are the result of poor diet and can be wiped out by proper food. We know that malnutrition is one of the major causes of ill-health, poor growth, and poor development.

For some time we have realized that the provision of nutritional advice and service to the people is just as urgent a public health responsibility as keeping infections away from them. Some progress already has been made in this direction. In many State and local health departments nutritionists are working with public health nurses, dentists, pediatricians, and obstetricians to teach American families how to apply nutritional knowledge in their daily lives. Physicians, too, are better equipped to recognize the "hidden hungers," lacks in individual diets which either promote disease or restrain the patient from attaining good health. Much remains to be done, however, in more widespread application of our knowledge and in the use of new techniques for the detection of nutritional deficiencies.

Advances in chemotherapy have made it possible to cure many diseases for which we previously had no specific treatment. Discovery of the sulfa drugs has revolutionized the treatment of such infections as childbed fever, blood poisoning, scarlet fever, cerebrospinal fever, gonorrhea, and pneumonia. Within the war years another miracle drug—penicillin—has come to light. In the battle against disease its accomplishments already are spectacular and exceed even those of the sulfas. The future triumphs of chemotherapy cannot be predicted.

Modern psychiatry may truly be said to be a product of the past twenty-five years. Our knowledge of the causes of mental diseases and of treatment has been greatly enhanced. The newer knowledge is being more widely applied. Today psychiatry is better prepared than ever before to help our people build strong bulwarks of defense against the emotional strains of a war-torn world.

It is also better prepared to restore the health of those who break under strain. Intensive treatment, devised for men who break in battle, has met with signal success. An example of this accomplishment is to be found in the Fort Worth Hospital of the Public Health Service, where men of the Navy—psychiatric casualties of the Southwest Pacific—are under treatment. More than eighty per cent are being returned to useful civilian occupations within three to five months.

Malaria has always been a major public health problem in the Southern States. Through the co-ordination of medical, entomological, and engineering knowledge, we have been able in the past decade to reduce malaria in this country to an all-time low. The decline has greatly accelerated since 1942, when the Public Health Service established a program of malaria control in war areas. Up to the present more than two thousand military and industrial establishments in three hundred areas have been protected. In 1944 the

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The Health Score OF THREESCORE YEARS

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

THE days of our years are threescore years and ten; and if by reason of strength they be fourscore years, yet is their strength labor and sorrow; for it is soon cut off, and we fly away." Psalms 90:10.

In the threescore years which have passed since the founding of LIFE AND HEALTH, a pioneer among health journals for the lay reader, much has happened in the realm of medicine, much which goes far to promise extension of the Biblical life span, and to alleviate some of the sorrow and trouble, at least in so far as that is due to preventable illness. The story of medical progress is one story, but for reasons of space it has been thought best to divide it into three articles, of which this one, dealing with progress in the treatment of disease, is the first. Subsequent articles will deal with preventive medicine and with public health.

The story of illness and its treatment today is far different from what it was in 1885. At that time the science of bacteriology was in its infancy, and the causes of many of the communicable diseases were still unknown or had been announced so recently that general acceptance of the new discoveries had not yet affected treatment. The germs of typhoid, diphtheria, cholera, lockjaw, and many others, had been observed, and their connection with the diseases which they cause had been established. Much of this had taken place between 1865 and 1885, the two decades just before the sixty years we are considering. But the impact of these discoveries did not really begin to be felt in the early years of the era on which we focus special attention.

In 1882, Robert Koch announced the discovery of the germ causing tuberculosis, but even more important, he set forth his four criteria on which decision must be based to prove that a given germ is the cause of a given disease. Briefly, these are:

1. It must be found regularly in association with the disease.
2. It must be isolated from the patient in pure culture, that is, uncontaminated by, or mixed with, other germs.
3. It must be able to reproduce the disease artificially in susceptible animals.
4. It must be recovered and identified from the secondary infection.

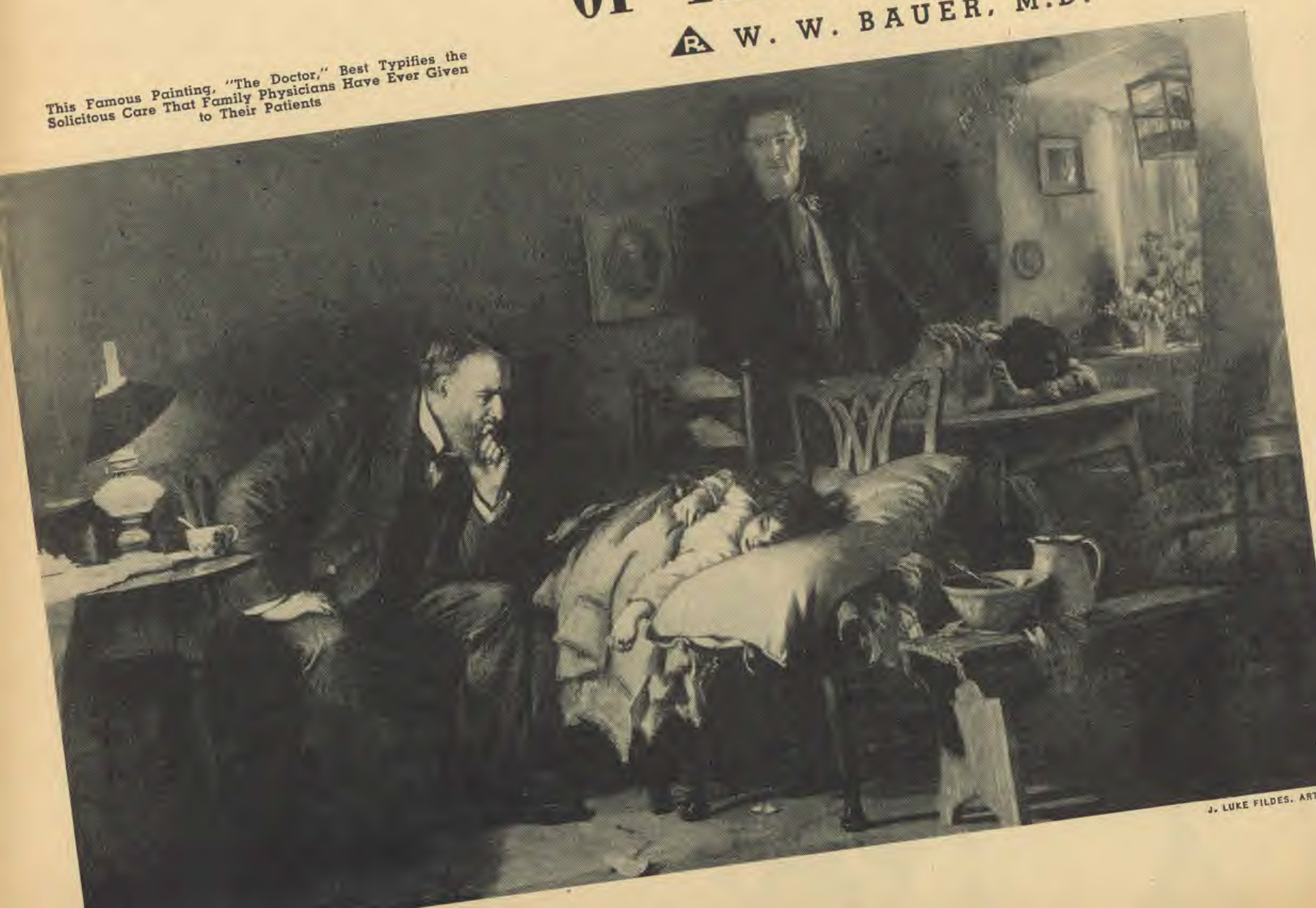
These standards, so simple and obvious, came into general use only gradually. They formed the basis for recognition of infectious disease and its cause, and sooner or later, for improved methods of treatment.

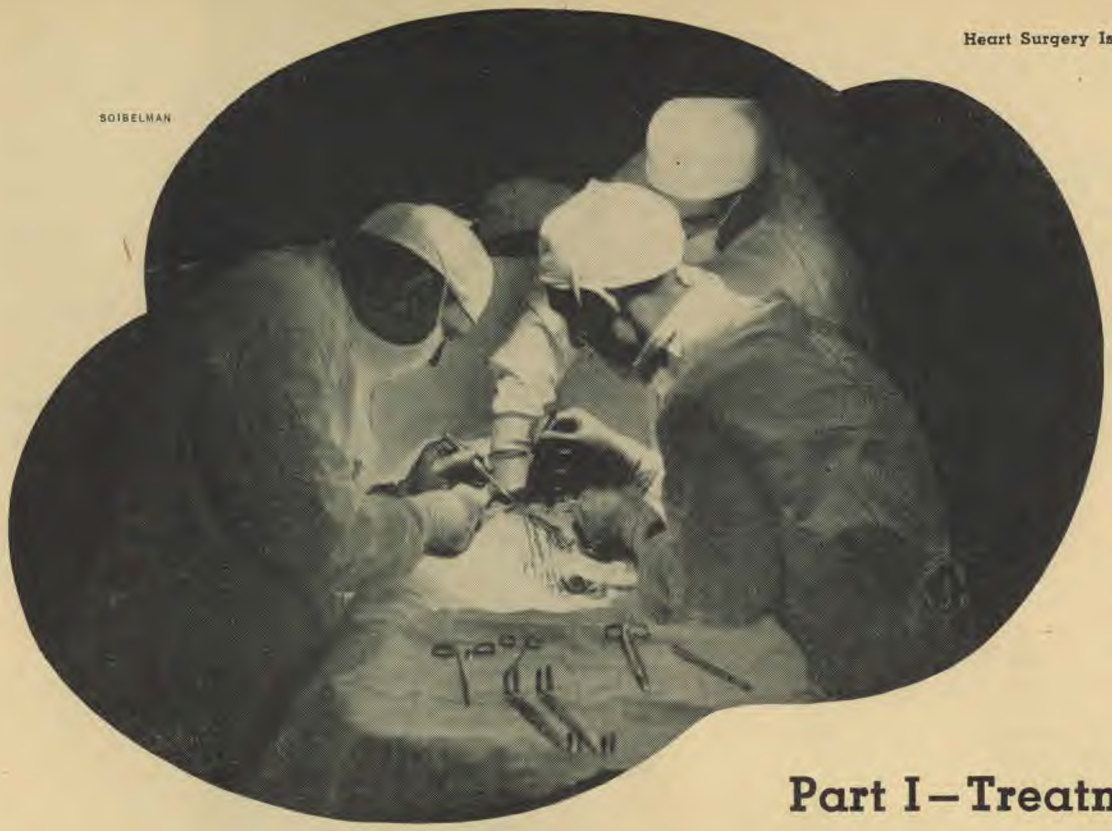
The outstanding advances in medical treatment in the past sixty years may be chronicled, as far as space permits, about as follows:

The discovery of the diphtheria bacillus in 1883 led to a study of its behavior in the animal body and in the test tube. It was soon apparent that the organism operates against the human body largely by reason of its production of a poison or toxin, given off from the organism and dissolved in the blood, which carries its noxious destructive effects to heart, brain,

* Director, Bureau of Health Education, American Medical Association.

This Famous Painting, "The Doctor," Best Typifies the Solicitous Care That Family Physicians Have Ever Given to Their Patients





SOIBELMAN

Heart Surgery Is One of the Late Developments in the Medical World

Part I—Treatment of Disease

and kidneys, even while the organism growing in the throat threatens the victim with suffocation.

Through a series of experiments too complicated to describe in detail here, the following observations have been made and verified: The organism produces a toxin (1885-90); some animals are more susceptible than others to the toxin (1885-90); small doses, repeated, will make susceptible animals immune; the blood of such immunized animals is beneficial to human victims of the disease (1885-95); from this blood a purified product, antitoxin (1894), can be made for use in treatment; the toxin, when well diluted, will make human beings immune when given in minute quantities (1910-15); the toxin can be modified to give greater safety without losing its immunizing properties, and is then known as toxoid (1925); toxoid, given routinely to all babies, is capable of practically eliminating diphtheria (1935-45).

This story of the fight against diphtheria is given in full and at length because it is a pattern story, which, if understood, clarifies the similar treatment of other infectious diseases.

In comparable manner, with specific variations for each disease, antitoxins or other serum products have been prepared to use against lockjaw, the food poisoning known as botulism, meningitis, scarlet fever, and pneumonia, to mention only the most important.

Another approach to the treatment problem has been the development of vaccines. Vaccines are, essentially, killed bacteria, as distinguished from blood serum or serum derivatives reacting to the bacteria. For treatment they have been relatively unsuccessful in many diseases, but they have been most useful for prevention and will be discussed under that heading.

So-called specific therapy, with the use of serum and antitoxin products, was most successful against diphtheria and lockjaw, less so against scarlet fever, meningitis, and other diseases. So the search for a better cure went on, until in the 1930's came the brilliant and dazzlingly swift development of chemotherapy, that is, treatment based on chemical compounds. The first of the so-called "miracle drugs" were mandelic acid and sulfanilamide. From the latter, or perhaps more accurately from the same base as the latter, has come the series of sulfonamides which has revolutionized the treatment of many diseases.

The "sulfa" drugs, so called for short to the chagrin of scientific purists, have been found most useful in infections due to the pus-producing organisms and their bacterial relatives. The streptococcus, long the unconquered wild man of the bacterial tribe, bowed to certain of the sulfonamides, while the staphylococcus, only slightly less dreaded, was overcome by others. Certain of the sulfa drugs proved so effective against pneumonia that the complicated process of typing and selecting the right serum to use against a given infection (if there was a right serum) has largely been superseded except in cases where both serum and drug treatment were needed. Meningitis serum has been almost completely replaced by sulfa-drug treatment, with brilliant results.

But the sulfa drugs are not effective against certain other infections, notably the virus diseases. Also, there were instances of infection with germs against which the sulfas were usually efficacious, in which they failed to work. Then came penicillin, which helps to fill in the gaps left by the sulfas, and in some instances replaces them. These drugs, though far from the miracles they have been considered to be, have improved the treatment of numerous infectious diseases and have changed some of them from almost certain killers to conditions which doctors can now treat with confidence.

But sulfa drugs and penicillin, prominent as they are in the news today, were not really the first of the specific drugs. Probably the first was quinine, used without knowledge of its identity or how it worked by primitive dwellers in fever zones. The isolation of the malaria parasite, and subsequent studies proving that quinine was specific against it, verified and rationalized the traditional use of this agent, and helped to provide a basis for correct dosage. The capture of the quinine sources by the Japanese for a while threatened disaster for our armed personnel in malarious regions, but American chemical ingenuity gave us atabrine, and now we can do quite well without quinine.

Another drug which was developed within our span of six decades was Paul Ehrlich's "magic bullet," the treatment which was visualized as so specific that, like a well-aimed rifle bullet, it would hit and destroy a "bull's-eye" and leave the rest of the "target" (the patient) undamaged. The famous "606," or salvarsan, an arsenic preparation, was less effective than had been hoped, but still sufficiently valuable so that, with its modifications, and some accessory drugs, it has made the definite cure of syphilis possible, given the co-operation of the patient through a long course of treatment. Now penicillin, when more generally available, promises to give us a swift and easy cure for this disease and for the other major venereal disease, gonorrhea, as well—a prospect which will open up new ethical problems.

However, not all, or even most, diseases are infectious. What has medical progress done for us in the realm of noninfec-

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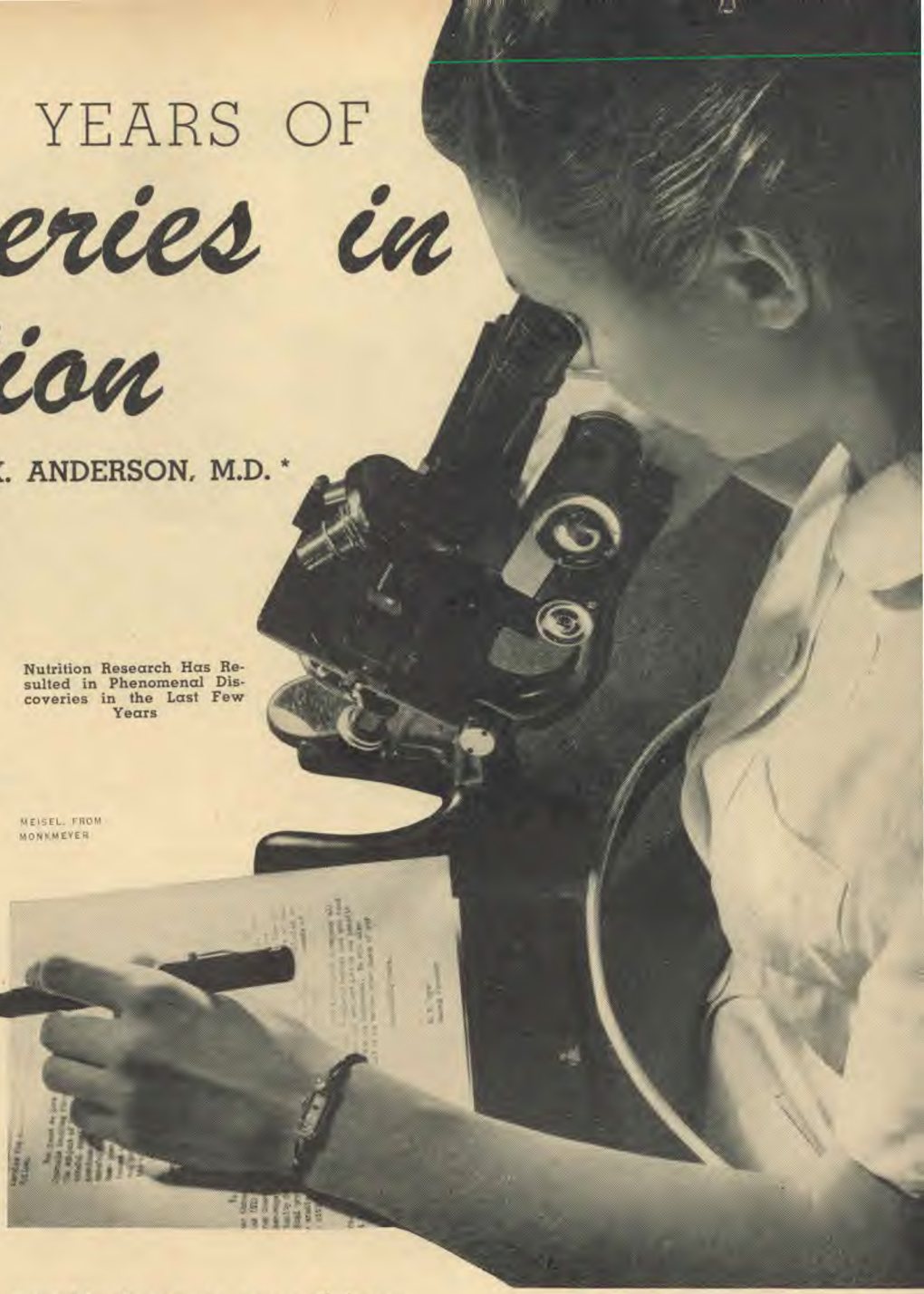
SIXTY YEARS OF *Discoveries in Nutrition*

GEORGE K. ANDERSON, M.D. *



Nutrition Research Has Resulted in Phenomenal Discoveries in the Last Few Years

MEISEL, FROM MONKMEYER

GONE are the days when we found ourselves eating just to fill our stomachs. Today one can scarcely help having some appreciation of the nutritional value of our commonly eaten foods. This in itself is a strong indication of the progress which has been made in the understanding of foods and nutrition. First the facts were ferreted out as a result of years of painstaking research and observation. Subsequently they have been applied to the everyday usage of food and made general knowledge so that all may benefit with greater health and happiness.

Sixty years ago when LIFE AND HEALTH was in its infancy only the simplest facts of nutrition, as we now know them, had been established. These were well founded, however, for many of them still stand unchanged. For many years it had been known that the three classes of foodstuffs—fat, protein, and carbohydrate—served as fuel in the body and that protein was the particular substance concerned with body building. The need for such minerals as calcium, phosphorus, iron, and salt was appreciated, but many of the finer details of their function remained to be worked out. The existence of those substances so much discussed today, vitamins, was unsuspected.

It was thought that any combination of foods supplying some of each of the food substances, which at the same time satisfied the appetite, would provide proper nourishment. Attention was generally focused upon the caloric values of foods, the energy needs of the body, and the details of protein metabolism. Then it became quite apparent that there were other substances in foods which had a profound influence upon the maintenance of health.

For centuries a relationship between disease conditions and lack of proper food had been suspected. In the case of scurvy this had actually been demonstrated in a crude way. The preventive and curative powers of fresh fruits and vegetables for scurvy were well known. Just why foods are effective in this manner was unknown. Soon after 1910 it was shown through the experimental use of diets containing only the known "purified" food components that there are factors other than those of antiscurvy in natural foods which are vital for growth and health. The term "vitamine" was suggested by Funk at this time to describe these mysterious substances whose existence was then only suspected. Thus we entered upon the vitamin era, which has been unrivaled in history for its succession of brilliant discoveries.

The first vitamin to be designated as such was called vitamin A. It was an unidentified substance found in many kinds of fats. Soon afterward there was proved the existence of another factor, different in that it was soluble in water, and intimately connected with the health of the nerves. This was named vitamin B. During the same period, 1910-20, the work of other nutritionists showed beyond doubt that there was something present in certain foods which prevented the development of scurvy while other foods did not have this power. To this third vitamin substance was given the letter C. These three were the charter members of the vitamin club. As more was learned of their identity, vitamins A and B were found to consist of more than one vitamin each. From the original vitamin A there was later separated vitamin D, which was found to be essential for proper utilization of calcium and phosphorus in bone and tooth growth.

Interest in the study of vitamins and of nutrition grew rapidly. With the improvement in chemical and other scientific methods of study, information was rapidly accumulated on the nature and

* Secretary, Council on Foods and Nutrition, American Medical Association.

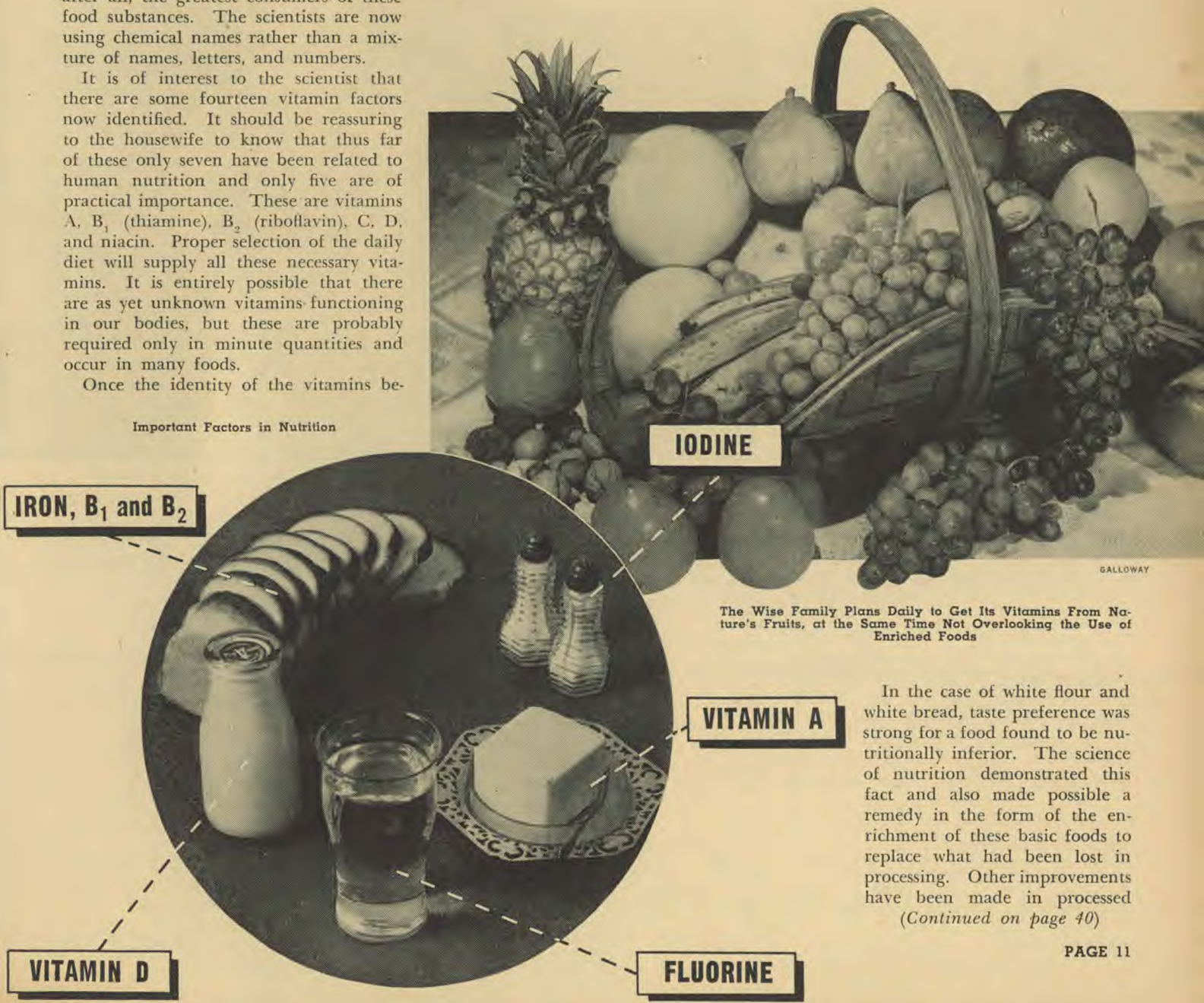
existence of these all-important vitamin substances. Foods were examined for their vitamin content by means of animal-feeding tests. Other efforts were directed at separating the substance exerting the vitamin action from the foods in order to permit its identification. It took a number of years to accomplish this, but in 1932 vitamin C was the first to yield its chemical identity. One year later this vitamin was prepared artificially in the laboratory. Vitamin B_1 was the next to have the secrets of its character successfully revealed. From then on the nature of several more of the vitamins has been brought to light, although even to the present time the chemical formula of some vitamins is not fully understood.

Since 1935 numerous new vitamins have been added to the growing list. At times it has been difficult even for the scientists to keep up with the latest additions. The imposing array of letters and names now associated with the vitamins can only be confusing to the housewife and the man in the street, who are, after all, the greatest consumers of these food substances. The scientists are now using chemical names rather than a mixture of names, letters, and numbers.

It is of interest to the scientist that there are some fourteen vitamin factors now identified. It should be reassuring to the housewife to know that thus far of these only seven have been related to human nutrition and only five are of practical importance. These are vitamins A, B_1 (thiamine), B_2 (riboflavin), C, D, and niacin. Proper selection of the daily diet will supply all these necessary vitamins. It is entirely possible that there are as yet unknown vitamins functioning in our bodies, but these are probably required only in minute quantities and occur in many foods.

Once the identity of the vitamins became known, rapid progress was made toward an understanding of the effects which they produce in the body as well as the results of their lack. How the vitamins work has been demonstrated for some, but we still do not know how others work. In general they have been shown to act as the catalysts, or spark plugs, for nutrition, causing the body to make proper use of its foods but not in themselves serving as a food. Scientists have attempted to determine just how much of each vitamin is required daily to take care of all needs. The exact amount has proved difficult to ascertain in most cases, but the tables of vitamin allowances prepared by the National Research Council have been of great help in setting reasonable goals at which we should aim. More and more the housewife should be thinking in terms of total nutrition, because these nutritional elements do not work alone, but are intimately related to one another, both in food supplies and in function within the body.

It is truly a great accomplishment to have gained all this wealth of information concerning vitamins and their functions in nutrition, but the task is not completed with the discoveries. It is necessary that we make use of what we know about foods if mankind is to reap all possible benefits. To a considerable extent this has been done by those concerned with supplying foods to the people. Attempts are made to take advantage of the latest research developments in the growing, processing, and marketing of foods, in order that the natural nutritional values will be retained in high degree. New, improved methods of food preservation have made possible a wider distribution of valuable foods. Methods of preservation found destructive to essential food substances have been discouraged. Waste products previously discarded have often been found to have considerable nutritional value and have been saved and used.



Important Factors in Nutrition

The Wise Family Plans Daily to Get Its Vitamins From Nature's Fruits, at the Same Time Not Overlooking the Use of Enriched Foods

In the case of white flour and white bread, taste preference was strong for a food found to be nutritionally inferior. The science of nutrition demonstrated this fact and also made possible a remedy in the form of the enrichment of these basic foods to replace what had been lost in processing. Other improvements have been made in processed

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The Attacks of Modern Science on an Age-Old Malady

THE PROBLEM OF CANCER

R. R. SPENCER, M.D. *

EVERY hour of every day eighteen people die of cancer in the United States alone. This is a casualty list we cannot ignore. Unquestionably cancer is one of our major public-health problems.

As a killer of mankind cancer is exceeded only by heart disease, and each year it takes a toll in deaths greater than the deaths of American soldiers in this war up to January, 1945.

From an economic standpoint cancer leads all other diseases in the cost of treatment and hospitalization. According to various surveys made by the U.S. Public Health Service, this cost was $342 per patient per year. No other disease hits the family pocketbook quite so hard.

Thirty years ago cancer stood seventh in the list of causes of death. Tuberculosis was first. Now cancer claims more than 163,000 lives annually in the United States alone, more than twice as many deaths as attributed to tuberculosis. No age is free from cancer, and few people realize that there are more deaths from cancer in children under twelve years of age than from infantile paralysis. It is principally, however, a disease of adult life and occurs more often between the ages of thirty-five and seventy. Cancer may effect any part of the body. Accurate information regarding the relative incidence of cancer among the different races does not exist. As qualified physicians make closer contact with the so-called "uncivilized" nations or tribes, it becomes increasingly apparent that no part of the earth's human population is exempt from cancer.

Undoubtedly cancer has been prevalent since the dawn of civilization. It is as old as the race. On good authority it has been stated that the disease has been found in Egyptian mummies, and the earliest historical reference to cancer may be found in the ancient Indian epic, the Ramayana, of about 500 B.C., and the Ebers papyrus (Egyptian), of about 1500 B.C. It is said that the Indians, Egyptians, and Arabians used arsenic and other chemicals in a paste for the treatment of skin cancer.

It seems that the earliest writers about cancer recognized the incurability of the advanced stages of the disease, and Hippocrates (born about 460 B.C.), the father of modern medicine, said, "It is better to give no treatment in cases of hidden cancer—to omit treatment is to prolong life." He introduced the word "carcinoma" for the malignant type of tumor and described cancer of the skin, breast, stomach, uterus, and rectum.

Celsus, a contemporary of Christ, showed remarkable insight regarding cancer. This great Roman writer and physician said that every cancer not only corrupts the part which it has seized, but spreads further. The most important generalization ever made about cancer, according to one of America's foremost medical scientists, Dr. Ludvig Hektoen, is the aphorism of Celsus that "only the beginning of cancer admits of cure; but when 'tis once settled and confirmed 'tis incurable, and the patient must die under a cold sweat." This saying remains today the very basis of all cancer education.

Filling Small Flasks With a Mixture of Chick Embryo Juice and Horse Serum in Which Cancer Cells Will Multiply Indefinitely

Because of our lack of a specific remedy for cancer it is still true that *when* a cancer is treated is more important than *how* it is treated. "Every cancer passes through a curable stage." Provided it is recognized and accessible, early cancer is curable!

Although the compound microscope was developed sometime during the sixteenth century, physicians failed to make use of it for many years. Therefore, it was not until the time of Johannes Müller in 1838 that cancer was recognized unmistakably as cellular and that its cellular structure always resembles that of the tissues from which the cancerous growth springs. Müller's discovery laid the basis for all modern classification, diagnosis, therapy, and research on the biology of cancer.

Although it had been known for a long time that cancer occurred in many species of animals, no one had succeeded in tak-

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ing a fragment of cancer tissue from one animal and making it grow in another. This was first accomplished by Arthur Hanau, of the University of Zurich, in 1889. He successfully transplanted a spontaneous cancer from one rat to two others. Later Jensen (1903) proved that the cancerous growth came wholly from the transplanted cells and did not affect the cells of the host. This seemed to be rather conclusive evidence that cancer was not an infectious disease.

Two Japanese investigators in 1916 appear to be the first who succeeded in producing cancers in animals by the use of external agents. With a great deal of patience they painted the ears of rabbits at intervals for more than a year and finally skin cancers appeared. Later, the English investigators Kenneway and Cook were able to fractionate tar, and found certain hydrocarbon compounds which were highly potent cancer-producing agents.

One can see that the attempt to solve the riddle of cancer has been slow and difficult, but definite progress is being made each year as painstaking research continues.

Just a few years ago Wooley, Fekete, and Little, of the Jackson Memorial Laboratory, Bar Harbor, Maine, were able to show that internal cancers can be induced in laboratory mice by disturbing the normal body chemistry without injecting any substance or adding anything to the diet.

The ovaries and testicles were removed from newborn mice of a certain inbred strain. After one year every one of these mice developed cancer of the adrenal glands. Such cancers did not occur in untreated animals of the same family. Apparently the early removal of the generative organs so upset the hormonal and biochemical balance of the mice that the burden of compensating for the disturbance fell upon another gland of internal secretion—the adrenal. The overactivity of the adrenal finally resulted in cancer. It was especially interesting to observe that mice from other families of inbred strains did not develop cancers of the adrenal glands when similarly operated upon. All this suggests very strongly that constitutional and hereditary factors as well as environmental factors play an important role in the genesis of cancer.

In fact, today we know a great deal about the causes of cancer. There is no single cause, as in infantile paralysis, whooping cough, scarlet fever, and other communicable diseases. Cancer can be produced experimentally in laboratory animals at will. Therefore, it is inaccurate and misleading to say that the cause of cancer is not known. Over one hundred different chemical compounds have been shown to induce cancers in animals, exclusive of the energy agents—X ray, gamma rays of radium, ultraviolet rays in the sunlight, and heat. These latter agents are known to start the process we call cancer in both animals and human beings.

Recently at the National Cancer Institute, Bethesda, Maryland, cancers have been produced by removing small bits of living flesh made up of so-called connective tissue cells from under the skin of normal mice and growing these cells in test tubes for many generations (cell divisions). The food supplied these artificial cell cultures was a mixture of horse serum and the juice of nine-day-old chick embryos. The cells were then exposed to small amounts of a cancer-inducing chemical for varying lengths of time. About forty days after the removal of the chemical the shape and size of the descendants of the exposed cells began to change very slowly, and later typical cancers developed when these changed cells were put back under the skin of mice of the same strain from which the cells were first taken. These same cells failed to develop cancers when placed under the skin of other families of mice, showing the high degree of specificity of the cancer cells.

Investigators have long been impressed with the contrast between cancer and the infectious diseases. One cannot have tuberculosis in the absence of the tubercle bacillus, but one can have a cancer long after the inciting causes have been removed. Another striking fact about the causation (no one any longer speaks of the cause) of cancer is that the inciting agents and the environmental conditions, internal and external, which bring on a cancer in one organ or tissue may not be closely related to the conditions that start the process in some other organ or tissue. For example, we know that the experimental production of cancer of the breast and that of cancer of the skin in mice may have nothing in common.

Cancer of the breast in certain inbred strains of mice is dependent upon a hereditary factor, a hormonal factor, and something in the milk of the females which has not yet been completely characterized. On the other hand, cancer of the skin can be induced readily in many different strains of mice by interval exposures to ultraviolet light without the influence of any of the hormonal or biochemical factors necessary to breast cancer playing any part whatever.

Enough has been said about the causation of cancer to show that it is a very complex biological problem but that, nevertheless, steady progress is being made. Although at present there is no known chemical that selectively attacks cancer cells and at the same time is harmless to normal cells, I know of no workers in cancer research who are pessimistic about the ultimate conquering of this major plague. We have too much confidence in the power and potency of the scientific approach to truth, which we believe is "the most effective tool man has ever devised for cutting into the facts of life and uncovering the secrets of nature."

Inbred Strains of Mice Are Essential Biological Tools in Modern Cancer Research

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WE exaggerate misfortune and happiness alike. We are never either so wretched or so happy as we say we are.—BALZAC.

VARICOSE VEINS

A. R. STADIN, M.D. *

THE term "varicose veins" could be associated with veins in any part of the body, although, according to common usage, it almost always designates permanently dilated, elongated, or tortuous veins in the lower extremities. This is a fairly common condition, which at times may be rather crippling.

The veins in the legs comprise a deep and a superficial system with communicating branches. The superficial group is made up of a network of vessels which extends along the inner side of the thigh and empties into the deep veins of the leg, and through them into the pelvis. The deeper layer of veins runs between the muscles of the leg and the thigh. Early in fetal life valves begin to develop in these veins. They are made up of one, two, or three cusps, which are so placed that the blood can pass upward but not downward. These valves are fairly well developed in early life but begin to degenerate later. The cusps then shrink and the valves become incompetent.

This happens most frequently in middle and late life, and progresses with age. The venous blood, which carries metabolic waste products, has a tendency to stay in the lower portions of the legs. However, partially because of the squeezing action of contracting muscles of the lower extremities, the blood is pushed upward more or less continuously.

The causes for the development of varicose veins are several. A hereditary factor has been found present in about seventy per cent of all cases. Thus the most important factor in the development of this condition is the presence of congenitally weakened vein walls, which give way under the strain of hypostatic congestion, caused by poor valves and back pressure from the veins in the pelvis. Other contributing factors are a general connective tissue breakdown, which comes with age or through infection; lack of vitamin C—a fact which has been discussed during the last few years; and finally, the still unsettled subject of endocrine influences.

As the vessel walls weaken and the pressure from above becomes too great, the veins begin to dilate, forming varicosities. There are three main types: the isolated, or saccular, form; the serpentine type; and the frequently seen network of fine blood vessels in the thighs of obese persons, especially of women. These fine varicose veins are called "stars," "brushes," "skyrockets," or "spider bursts."

If the changes are extensive the return circulation of the blood will be interfered with, the degree of disturbance varying with the amount of involvement. This may be a swelling of the ankles only or, on the other hand, a marked edema of the whole leg. This is due to the fact that the blood, instead of being pushed upward, will empty from the deeper circulation through the communicating branches into the superficial vessels and run downward through these veins which lack competent valves.

As this takes place, the nourishment of the tissues is interfered with, and complications set in. Of these the most common are itching, tingling, pain, cramping, eczema of the lower legs, ulcers, and inflammations. Eczema usually develops because there has been a change in the reactive powers of the cells of the skin, either by direct injury or by interference with the nutrition. When the resistance of the skin is lowered, bacteria or fungi may cause an infection and inflammation. Instead of seeing a physician, occasionally persons so afflicted will treat themselves by applying an ointment. This usually causes a flare-up of symptoms present, and will at times lead to a severe skin eruption.

Varicose veins may be found in young as well as in old individuals, but they are most common between the ages of thirty and forty years. Some investigators think that women are afflicted more often than men, and some have found the proportion to be four to one. Others think that there is no difference between the occurrence in men and in women.

Occupation plays an important role in the development of varicose veins. Thus barbers, clerks, and others who stand still for long hours at a time are liable to develop this trouble. In the literature on this subject there is quoted an example of this. A man who was operating a press machine, using his right leg constantly for this purpose, developed marked varicosities in his left leg but none in his right. The explanation of this is that the muscles of the right leg were constantly contracting and were pushing the blood upward, while there was a complete lack of muscular exercise in the left leg.

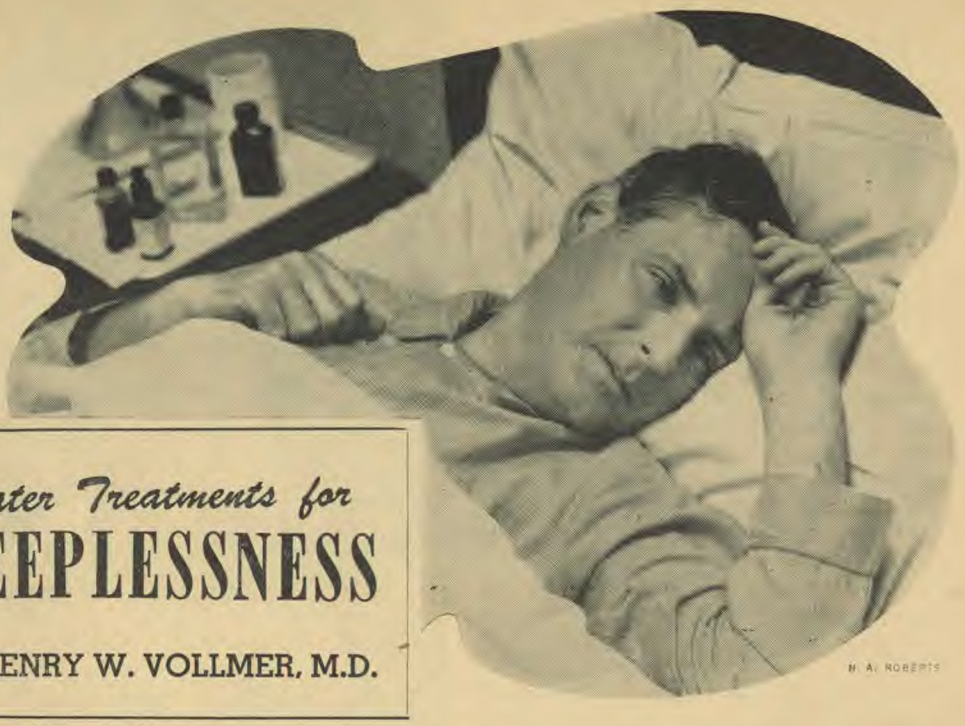
S. M. HARLAN

Occupations That Require Persons to Stand for Long Hours Often Lead to Varicose Vein Conditions

The treatment of varicose veins may be divided into three groups, those of prevention, support, and surgical intervention. People who know that they have weak veins should never choose an occupation which requires them to stand still. A person who is forced to be on his feet all day should walk frequently in order to stimulate muscle contraction. Hot and cold leg baths, which increase the circulation very much, can be of some benefit as a preventive measure.

(Continued on page 31)

* Medical Director, Paradise Valley Sanitarium, California.



Water Treatments for SLEEPLESSNESS

℞ HENRY W. VOLLMER, M.D.

IN these strenuous and distracting days many are resorting to the use of sedative drugs in order to relieve nerve tension and obtain sleep. So widespread has the use of this class of drugs become that it has been found necessary to enact legislation regulating their sale. The physician should decide whether or not you need a drug of this nature. But first of all, it is his responsibility to advise you as to a better way of securing the desired results than through the use of drugs. In the majority of cases, by reassurance on the part of the physician and with the use of natural remedies, restful sleep may be obtained in due time. There are very simple measures that can be employed right in your own home.

A neutral bath is a most valuable sedative measure. It relaxes nerves and muscles, in this way equalizing the circulation, thus relieving the congestion of the brain and spinal cord, which exists in most cases of insomnia. In order to bring about the desired effect of a neutral bath, regulate the temperature of the water according to the season of the year and the condition of the patient. Some persons will obtain a sedative effect from a temperature of the water of 96° to 97° F., while in other cases it may be necessary to raise the temperature of the water to 98° or 99° F.

The neutral bath should be given in a warm, quiet room. As a rule, the bath is continued from twenty to thirty minutes, but in some cases it may be prolonged for several hours. If the bath is thus prolonged, the tub should be covered with a sheet. It adds to the comfort of the patient and to the effectiveness of the treatment if the face is lightly wet with cold water. To prevent chilling upon emerging from the bath, reduce the temperature of the water two or three degrees just at the close of the bath. Dry the patient carefully but lightly with a sheet. Avoid unnecessary friction or percussion, as this will destroy the sedative effect of the treatment. The patient should retire immediately.

A simple hot foot bath just before retiring will often relieve the congestion of the special nerve centers and thus bring relaxation and restful sleep. Another simple measure is the application of two or three warm or moderately hot fomentations to the spine, followed by an alcohol rub to the spine. In certain individuals of sedentary occupation, who lack exercise, massage is a useful measure in bringing relaxation and sleep. In other cases of this kind a tonic sedative, such as a hot-and-cold shower or hot-and-cold applications to the spine, followed with an alcohol rub, by equalizing the circulation, is beneficial in the relief of insomnia.

Another method of treatment that has been overlooked in modern times is the old-fashioned moist abdominal girdle. This consists of two parts. The inner cloth, or moist part of the application, is best made of three or four thicknesses of gauze about eight or ten inches in width and a little longer than one and one-half times the circumference of the body, so as to overlap over the abdomen. If gauze is not at hand, a soft towel will serve. If the towel is not long enough to reach entirely around the body, it may be applied over the front and sides of the abdomen.

To cover the moist compress a flannel girdle of the same length and about twelve inches in width will be needed. In applying the bandage have the patient sit up. The dry flannel girdle is placed across the bed or table and the gauze cloth wrung nearly dry from cold water and spread over the flannel. The patient lies back on the bandage into position, so that the lower edge of the bandage will overlap the crest of the pelvic bones. Next take each end of the moist gauze and tuck it under the opposite side. Then fold each end of the flannel bandage snugly over the moist compress and fasten securely with safety pins. Be sure that the flannel more than covers the moist compress all around. It should extend at least three inches beyond it. If necessary a dart may be placed on each side by means of pins. It must fit snugly so that it will warm up properly.

The gentle warmth which results from a heating compress of this kind tends to draw the blood away from the congested nerve centers to the large blood vessels of the portal circulation. This compress should be left on all night. Upon removal on arising, if a shower bath is not taken, the part that has been covered with the bandage should be bathed with alcohol or cool water and dried. In most cases it is well to apply a fomentation

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Fomentations to the Spine Will Usually Relieve Congestion and Induce Restful Sleep

S. M. HARLAN PHOTO

MENTAL MEDICINE, or psychiatry, has made its greatest progress since the founding of LIFE AND HEALTH in 1885. Although mental illness was recognized by the ancients and has been practiced in one form or another down through the ages, most of our present knowledge of mental hygiene has been gained during the past sixty years. Never before has the average person known anything about the nature of mental ills except the explanations of superstition and ignorance. Health education, by means of such periodicals as LIFE AND HEALTH, has been a development of the past sixty years and for the first time in any age has brought a knowledge of health problems to the average man and woman.

Mind cures have played a prominent part in the religious-magic-medicine practiced by the priest and medicine man of all primitive peoples. The voodoo doctor of the West Indies and the guardian of the evil eye and magic potions in the Southwest Pacific are the modern versions of the witch doctor of early primitive civilizations, for faith and fear have played a conspicuous part in the treatment of human ills in all ages.

In the Old Testament we read of the mental difficulties of Saul, for whom David was called to sing and play on his harp. A little later we learn that David, too, had his troubles and his mental problems. Surely Job was depressed with the afflictions which beset him. The record of the Bible clearly indicates that mental ills of various kinds were recognized and that there were recognized methods of treatment.

From early Egyptian history, worship and healing were united in temples devoted to both religious altars and healing shrines. About 1000 B.C. a civilization flowered in Greece which learned so much about the natural causes of disease that many of the superstitious beliefs were abandoned. As early as 400 B.C., Hippocrates taught that mental illness was a disease of the brain. Temples of healing were built near springs and resorts, and hydrotherapy, recreational therapy, occupational therapy, and music were utilized in the treatment of various ailments. Religion was not neglected as a part of the healing exercise.

The early Romans borrowed from the Greek physicians, and for several centuries after the life of Christ, continued the use of the temples of health, with their therapies strangely resembling those which our civilization has been developing during the past sixty years. During the Middle Ages all branches of learning turned back and it was left to the Arabian doctors to preserve some of the enlightened concepts of the Greek physicians. Elsewhere mental illness again became demoniacal possession; the afflicted one was often treated with cruelty; a strange admixture of religion and superstition led to a belief in witchcraft which lived well into the early days of New England.

PRESS ASSN.

Physical Therapy Is an Aid in Restoring Soldiers Whose Nerves Have Been Shattered. This 12-Hour Continuous Flow Bath Soothes Tense, Restless, and Agitated Patients

By the early part of the eighteenth century a gradual awakening was taking place in the more enlightened minds, and it was not long until new attitudes and new institutions were coming into existence. In this country the Pennsylvania Hospital opened its doors to mental patients in 1752. The New York Hospital received its first patient in 1771. In England and France, Tuke and Pinel were leading out in reforms which led to the abandonment of chains and shackles, the dungeons and confinement of those who were so punished only because they were mentally ill. In our own enlight-

U. S. SIGNAL CORPS

Great Care Is Used to Screen Out and Select Those Fit for Military Service

* Clinical Professor of Psychiatry, College of Medicine, Ohio State University. Medical Director of the Harding Sanitarium, Ohio.

The HEALING OF THE MIND

By GEORGE T. HARDING, M.D.

Great Strides in the Field of Psychiatry

ened land citizens paid a small fee to stare at those unfortunate individuals whose mental illnesses forced them into the asylums of their day.

The first half of the nineteenth century saw the groundwork laid for the establishment of great new institutions for the care of the mentally sick. Outstanding was the service of Dorothea Lynde Dix, whose memorial describing in horrible detail the conditions in the mental institutions of her State was laid before the Massachusetts General Assembly in 1841. It was the beginning of a personal crusade, leading to reforms, which has seldom been equaled. She went before the legislatures, the Congress, and foreign governments to request huge appropriations to build humane hospitals to replace the asylums of former days. So great was her success in the interests of the mentally ill that when the War Between the States came to this country, President Lincoln appointed Dorothea Lynde Dix superintendent of women nurses of the United States Government, a position she filled with distinction.

The names of the great who contributed to the advancement of psychiatry during the last half of the nineteenth century include Charcot, Bleuler, Kraepelin, Freud, and many others on the Continent. Of them all Freud has undoubtedly had the most influence on psychiatric thought and treatment. It was the new doctrines of Freud which introduced the concept that mental illness often had its origin in the early years of childhood, through psychic conflicts. Whatever one may think of Freud and his school of psychoanalysis it must be admitted that his teachings, more than any other single influence, created a new and dynamic approach to the problem of mental illness.

In this country a more conservative school of psychiatry came into being around the work of a modest young pathologist whose studies in mental institutions led to his ever-increasing recognition as a scientist and teacher. Adolf Meyer, more than any other individual, has been responsible for what is known as the psychobiological approach to the treatment of mental illness. It has been the American method to investigate mental illness from every angle, the correction of all physical defects, a consideration of social and economic influences, the treatment of the patient and his problem as a whole.

LIFE AND HEALTH had come of age when another milestone in psychiatry came into existence. A young graduate of Yale University happened to suffer a nervous breakdown and as a result attempted to end it all in the year 1900. The next three years of his life were spent in various mental hospitals, where he observed and experienced the humiliations and primitive facilities for treatment of the mentally ill, which had not kept pace with progress in other fields. Clifford W. Beers was so incensed by what he experienced that he wrote an autobiography, *A Mind That Found Itself*, which was to catch the imagination and arouse a people even as an earlier book, *Uncle Tom's Cabin*, had attained unequaled popularity and been a factor in the liberation of those who lived in slavery. On February 19, 1909, Clifford W. Beers helped establish The National Committee for Mental Hygiene and became its first secretary, a position he held until his retirement in 1939.

New therapies too numerous to mention have advanced our knowledge of how to treat the mentally ill. The contribution of Wagner von Jauregg, of Vienna, after Word War I gave the first hope for the cure of syphilis of the brain by means of fever induced by inoculating the patient with malaria. Others in this country discovered that similar results could be produced by various kinds of fever cabinets. An entirely new field of treatment was opened by this discovery of fever therapy.

Perhaps the most far-reaching discovery of all was the introduction of the so-called shock therapies following the work of Manfred Sakel, also of Vienna, who observed the favorable effect on certain types of mental disturbances while giving insulin to patients who were also under treatment for drug addiction. Since convulsions occurred in the course of treatment, investigators sought other means of producing convulsions for therapeutic purposes. Meduna discovered a chemical, metrazol, which more recently has given way to the electrically induced convulsion as a means of influencing the course of certain mental illnesses, particularly the depressions and certain excitements.

Whatever may be the final value of the shock therapies, it must be said that more than anything else they have produced results in the treatment of mental diseases and have initiated studies and interest in problems which are certain to lead to even greater discoveries for the relief of mental ills.

Finally the war, with its new and special problems, has brought to psychiatry unprecedented challenges in the selection and screening of the mentally fit for military service. The problem of preventing the so-called nervous breakdown in combat zones, as well as in new and hitherto unknown conditions incident to war on such far-flung fronts as Greenland's icy mountains and the steaming jungles of the Southwest Pacific, has offered a tremendous opportunity for new and far-reaching studies. Equally important are the studies undertaken in behalf of the wounded or sick soldier, his readjustment at home after his discharge from the service, his acceptance of whatever handicap or disability the war has imposed. This challenge, more than any other, is the one to which psychiatry is giving its attention today.

In few fields of medicine have there been as widespread acceptance and adoption of the health principles advanced by LIFE AND HEALTH as in psychiatry. Public education in health matters is probably the most important function of The National Committee of Mental Hygiene. Biologic living, as Dr. John Harvey Kellogg liked to call it, has been put into practice in variable forms in the treatment programs of most psychiatrists. Physical medicine, which includes hydrotherapy, massage, sunlight, and regulated exercises, has been raised to a new level

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The Charlatan Who Attracted Crowds in Public Places a Decade Ago Is Rarely Seen Today, but He Still Plies His Trade

EWING GALLOWAY

Frauds, Quacks, and Your Health

The Long Fight Against Medical Imposters

AUSTIN E. SMITH, M.D.*

THE newspapers of almost all large cities carry daily one or more stories of murder. Sometimes these crimes are committed in moments of intense passion; sometimes they are carefully planned in advance. Usually the murderers are caught and brought to justice, perhaps to be hanged or electrocuted or merely sentenced to long imprisonment.

If the reader of this journal were to kill, accidentally or intentionally, a fellow man he could be reasonably certain of swiftly appearing before a court no matter whether he used a car, poison, gun, club, or other medium. Likewise, if he should subject someone in his care to deliberate starvation or if he intentionally prevented a sick person from receiving adequate medical care, he would be held responsible.

And yet year after year an inestimable number of people have been made ill, illness has been prolonged, and people have even been made to die simply because they did not receive proper care. Sometimes this is brought about because the victims deliberately seize upon some fad or fraud; sometimes they are subjected to improper practices because of the insistent advice of relatives or friends. How often do those responsible for such deaths make atonement? Not often enough. Actually, can full atonement be made simply by applying a law which demands an eye for an eye? This will not make up for the suffering inflicted upon the families of the deceased.

According to dictionary definition, a fraud is "an act of deliberate deception practiced with the object of securing something to the prejudice of another; a trick or strategem intended to obtain an unfair advantage." How many frauds have been perpetrated will probably never be known, but those which are concerned with public health have been numerous and are particularly vicious. Unfortunately, as fraudulent practices are exposed, new ones spring up, although with each passing decade they become less harmful. Sometimes frauds are introduced by promoters offering nonsensical devices or compounds; sometimes they are perpetrated merely by means of misleading advertising claims, the devices or chemicals being in themselves relatively harmless. Years ago a large percentage of frauds were actually dangerous to health because of the ingredients. Now they are usually dangerous because they replace adequate medical care and because the purchaser or user is led to expect miracles.

Sixty years ago, when LIFE AND HEALTH was in its infancy, fraudulent practices were particularly dangerous. No improvement was seen by the turn of the century, as many promoters with more interest in financial gain than public welfare saw the golden opportunities that existed in this field and practically flooded the continent with chemical mixtures and devices of all imaginable varieties. Fearless, fact-finding bodies exposed these practices as fast as possible, and the fact that their charges could not be truthfully denied was adequate indication of the validity of the charges. Nevertheless, it is a long, tedious job to educate the general population to the dangers inherent in such practices. Scientific organizations, business bodies, Federal and State groups, and national periodicals have exerted their influence and brought about much improvement, but the job is far from complete. While many of the more dangerous and absurd schemes have been exposed and swept away by the activities of the Food and Drug Administration, the Federal Trade Commission, the Post Office Department, and the Bureau of Investigation and the Council on Pharmacy and Chemistry of the American Medical Association, there still exist frauds which daily endanger many American lives.

In time even these probably will be disposed of, but since there will always be unscrupulous promoters and a certain

* Secretary, Council on Pharmacy and Chemistry, American Medical Association.

gullible percentage of the population, it behooves everyone to be constantly on the alert for dangerous health procedures and promoters. Quackery should be avoided; it should not be passed along to relatives and friends. In fact, these people should be warned against procedures or schemes which are believed to be useless or harmful; and there should be no hesitation to make inquiry of the above agencies when in doubt concerning some treatment measure or a promoter. Each agency is glad to supply freely information it may have on the subject.

A "quack" is defined as "one who professes skill or knowledge in any matter of which he knows little or nothing." He is a charlatan. The number of quacks that have infested this country is as legion as their activities. Let us look, for example, at the record of one man who was self-styled a world traveler, educator, and philosopher. Early in his career he ran afoul of the law and was charged with obtaining money under false pretenses when he gave a series of lectures to "train" individuals to heal, by "superscience," diseases such as tuberculosis, arthritis (neither word could he spell correctly, indicating his knowledge of these diseases), cancer, ulcers, blindness, and deafness. Later, in another city, his offices were raided by police for his activities in selling life insurance policies. Still later, in a third city, he was found to be selling (for a large fee) courses leading to a degree of his own imagination. He also sold machines to measure the "energy" of the body glands. The machines, like the courses, were offered at a fancy price.

Another quack, like so many of his kind, exploited an impressive-looking box with colored lights to treat practically all diseases. This man was charged in a State court with gross immorality in the conduct of his activities, because of his use of such a bizarre and useless machine.

A quack with a special interest in nutrition offered a diet for almost every ailment to which the human body is susceptible. Like others, he carelessly used the prefix "Dr." and the suffix "M.D." without bothering to graduate from a medical school prior to such use. Many of the foods that he promoted were acted against by Federal agencies.

A number of quacks have attempted to impress customers with such mystifying terms as "metaphysics" and "cosmic rays." There was, of course, no mystification on the part of carefully trained scientific men concerning the methods adopted by the quacks for promotion! Nevertheless, countless individuals have let themselves be duped into the expenditure of large sums of money for diagnosis and treatment of severe illnesses. If only they could see how promoters are paraded with monotonous regularity before courts, and how sooner or later even the most wily character is exposed in his true light, the victims would not be so willing to risk their health by heeding such absurd practices and preachings.

Unfortunately, the use of advertising in newspapers and other journals and of testimonials builds up a profitable following of customers before the exposures. An interesting and important point for everyone to consider when he or she is faced with testimonials is to remember that whenever frauds are concerned, the testimonials come from those who never actually had the claimed disease or would have got better anyway without treatment. In fact, one might say the latter group got better in spite of treatment.

Sometimes drugs are used by quacks to foist their schemes upon a trusting public. One man used the same mixture of drugs to "develop busts" and "thin or unshapely" legs. Apparently this fellow had little regard for the differences in anatomy and all the factors that may enter into the development of busts and legs. Barred from the use of the mails

(Continued on page 44)

Two "Gingerbread" Labels of Yesteryear

It Is Becoming a Regular Thing for Quacks to Be Indicted Before Courts. Think Twice Before Risking Your Health by Using Patent Medicines

ISHERS PHOTO SERVICE

Sister Kenny's Fame Is Based on the Use of Hydrotherapy

COURTESY, LIFE MAGAZINE

Physical Medicine

℞ WAYNE McFARLAND, M.D.*

DURING the past quarter of a century a strange but inevitable change has occurred in the field of medical science. Whereas a few years ago it was not at all popular to speak of treating disease with such humble agents as heat, cold, light, massage, and exercise, now not only is it recognized that such physical agents are beneficial in treating disease but they are being used more and more in diagnosing and preventing disease as well. The newer term "physical medicine," which is now used in place of the older term "physical therapy," is indicative of this change of attitude of the medical profession as a whole. In its newer sense, "physical medicine includes the employment of the physical and other effective properties of light, heat, cold, water, electricity, massage, manipulation, exercise, and mechanical devices for physical and occupational therapy, in the diagnosis or treatment of disease."

Physical medicine then becomes the oldest and yet at the same time the youngest member of specialties in the field of medicine—the oldest, because it has existed ever since God created the heavens and the earth and placed the sun to rule the day; and the youngest, because man has been slow in recognizing that in His created works lay the remedies for many of man's ills.

Dr. George Morris Piersol has aptly put it this way: "It is one of the curious phenomena of American medicine that until recently the majority of the medical profession of this country have exhibited little interest in, and less knowledge of, physical medicine. This apparent indifference to one of the oldest as well as one of the most useful fields of therapeutics has been due largely to the fact that until a few years ago the subject was either entirely omitted from the courses given to our medical students, or at best was accorded an insignificant place in the medical curriculum. . . . To those who have long had at heart the advancement of physical medicine, it is gratifying to note that this unfortunate situation, which has existed too long, is in the process of being corrected."

Let us turn back the pages of history and follow briefly a few of the outstanding events that have occurred in the various fields of physical medicine.

Ultraviolet Light †

The story of light therapy is a most fascinating one. A young medical student sat at his window watching a cat as it dozed on a sunny roof top. As the shadows moved up to the spot where the cat was sitting, the cat would get up and move over into the sun; it repeated this over and over again. Niels Ryberg Finsen's interest was aroused; the movements of the cat set him thinking. Sunlight must have healthful properties that the cat instinctively sought. Upon graduating from the University of Copenhagen in 1890, he began his researches on light therapy. Very little was known about

* Assistant Professor of Medicine and head of the Department of Physical Medicine of the University of Southern California. On leave of absence from the College of Medical Evangelists, California.

† The term "ultraviolet light" in its strictest sense is not correct, for the ultraviolet rays cannot be seen, but the term has become almost universal through common usage.

sunlight or its curative value up to this time. He demonstrated that sunlight has ultraviolet waves which, though invisible, are the chief cause of the beneficial effects of sunlight.

He constructed carbon arc lamps which gave off radiant energy similar to that found in sunshine. He was, according to Lamholt, "the first to employ sunlight baths as a therapeutic measure in the treatment of pulmonary tuberculosis and the surgical (bone) tuberculosis," obtaining "some very favorable positive results."

He furthermore found that ultraviolet rays can cure many of the terrible and intractable cases of skin tuberculosis. Because of his excellent studies, he was awarded the Nobel prize in 1903. Truly, as stated by Robinson, "Niels Finsen was the first, consciously and scientifically, to employ artificial sunlight in the treatment of disease." Before Finsen it had been suspected that sunlight has a definite beneficial effect in rickets. We now know that the invisible ultraviolet rays change chemical substances in the skin into vitamin D, and that the vitamin D is essential in absorbing and depositing calcium and phosphorus in the bones.

Shortly before Finsen died, Rollier, in the Swiss Alps, began his institution where heliotherapy was used in a well-controlled and systematic way. Many sufferers of various types of bone diseases, and especially of bone tuberculosis, have been cured by the man who is known as the father of modern heliotherapy. His method of gradually exposing the body to the sun's rays in graduated doses is still used.

In the year 1892 Leo Arons invented the mercury-vapor lamp, which was first manufactured in this country in 1901. This is the type of lamp that most doctors have in their office for administering ultraviolet light. The newest form of treatment using ultraviolet light is to take an exact amount of blood from the vein of a person, run it through a small rubber tube to a pump that pushes the blood into a small chamber through which rays of ultraviolet light are passed. After the blood receives its artificial sun bath, it is returned to the vein of the patient.

The first mention of this unique method of applying ultraviolet energy intravenously was in 1934 when two workers reported the recovery of two extremely ill patients, one with a brain abscess and one with a normally fatal bloodstream infection. At present, the use of this method of giving ultraviolet intravenously is being studied in numerous diseases, some of which are not even susceptible to the newest drug, penicillin. This may well be one of the most interesting and profitable pieces of research being conducted in physical medicine.

Electrotherapy

Another interesting part of physical medicine is electrotherapy, or the use of electricity in diagnosing and treating disease.

Guillaume Duchenne (1806-75) discov-

COMES OF AGE

The Increasing Part Being Played by Water, Electricity, Massage, Etc.

BETTMAN ARCHIVES

Above: One of the Sixteenth Century So-called Cures for Syphilis

COURTESY LEIBEL—FLARSHEIM CO.

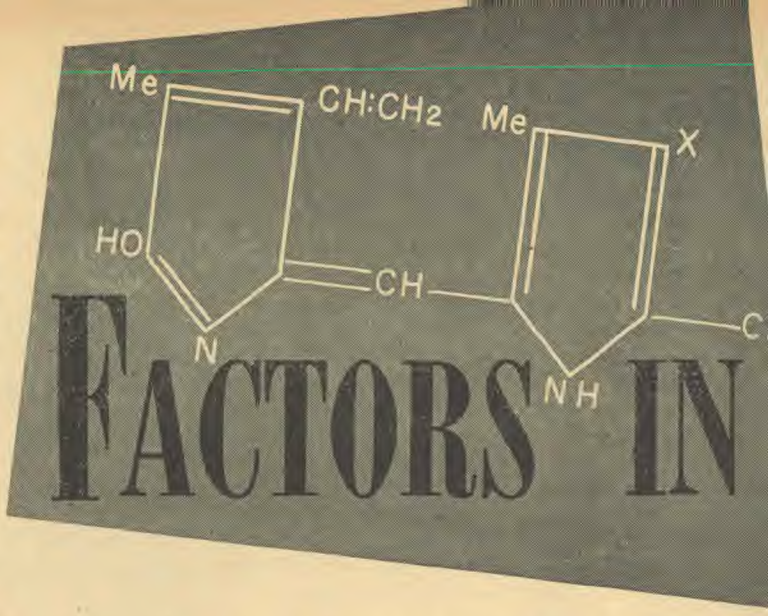
Middle: Modern Scientific Treatment of Syphilis Employs Diathermy in Conjunction With Specific Medicines for a Speedy Cure

HARRIS & EWING

Right: Bernard M. Baruch Augments the New Enthusiasm for Physical Medicine With a Contribution of $1,100,000 in Memory of His Father, Dr. Simon Baruch

ered that he could produce muscular contractions by connecting two damp sponges to wires leading from his faradic machine. Dr. Duchenne studied and applied his discovery to other muscles, and came to the conclusion that paralyzed muscles are benefited by electrically stimulated contractions. He was correct,

(*Continued on page 42*)



FACTORS IN

IN a previous article the structure of the digestive tube was briefly discussed. Reference was also made to the fact that profound biochemical processes were performed by the digestive organs on the food eaten through the action of the various digestive juices and their respective enzymes.

The general process called digestion is the splitting, or breaking down, of complex food substances into their simple component parts, which makes food ready and suitable for absorption by the villi into the blood stream, and thence it goes to nourish the body.

This rather mysterious change wrought upon food whereby bread and butter eaten today are converted into such form as to nourish the structures of the body and appear tomorrow in the form of blood, energy, body structure, etc., challenges the understanding of man and bespeaks the wisdom and power of a benevolent Creator, who established the digestive function according to physiological laws.

It will be of interest to review certain fundamental factors that make for good digestion, for no process so involved and so essential to life could proceed by chance or rule of thumb. In keeping with the intricacy and importance of its function the digestive tract has a very copious blood supply and is provided with elaborate and extensive regulating mechanisms through the medium of the nervous system. This is another way of saying that wise provison has been made to ensure co-ordinated, orderly function of these essential organs.

In a study of the mechanisms at work here we are concerned primarily with two functions, namely, motor, or muscular movement, and secretory, or the production of the digestive fluids, which act upon the foodstuffs eaten.

It will be remembered that several million tiny glands—simple chemical laboratories—are found in the wall of the stomach and small intestine. Also certain structures in the liver and pancreas are involved in preparing the enzymes which bring about the digestion of the food.

Since the secretion of saliva is an early phenomenon relative to eating, we first may well ask, "What causes the flow of saliva when food is taken into the mouth, or even when food is seen or smelled or only imagined?" Also, "What determines when the digestive juices will be secreted?"

It is a matter of common knowledge that the mouth often waters at the sight or smell of food, or merely the thought of good food. This experience and mechanism is brought about through the delicate functioning of the nervous system and is an example of what is known as a "conditioned reflex."

Doubtless all have observed some objective example of this reflex. Most animals are quite susceptible and quickly acquire the reflex experience. Chickens, for example, after a few repetitions of a certain sound associated with feeding will, upon hearing that sound, begin running to the place of feeding even though the person feeding the chickens is not in sight.

In the human the reflex action of the mouth watering is a response acquired by the pleasurable experience of food enjoyed. Such a flow of saliva—so-called psychic secretion—tends to pave the way to hearty relish for food and to ensure good digestion. The psychic reactions are so closely related to food enjoyment and the response of the digestive organs to such stimulation is so marked that it has become a well-established fact that pleasant surroundings, agreeable association, soft music, and attractive food and table decorations do much to add to the pleasure of dining and to pave the way for good digestion.

Many observations have been made which indicate that food which is palatable and which is eaten with pleasure will leave the stomach earlier, will stimulate a more copious flow of digestive juices, and will be digested better than food which makes little or no appeal to the palate and which is not eaten with pleasure.

From early times the influence of strong emotion upon the digestive tract has been known. Reference is made to this knowledge by the learned apostle Paul in his expression, "bowels of mercies." Again from ancient Egypt, in the emotion experienced by Joseph at the sight of his brother, this reference is recorded, "And Joseph made haste; for his bowels did yearn upon his brother." Gen. 43:30.

It has long been proved by experiment that anger, excitement, fear, sorrow, undue fatigue, pain, etc., all tend to obscure the sense of hunger and seriously impair digestion, even to stopping the secretory and altering muscular activities of the digestive organs.

It is better for persons not to partake of food when unduly fatigued or when the mind is distracted by strong emotion with no chance for the development of the psychic secretions or for the enjoyment of food. Thus it is that attacks of vomiting, diarrhea, constipation, and digestive upsets are often associated with circumstances and emotional reactions unfavorable to digestion but quite apart from the character of the food eaten and unrelated to organic disease of the stomach or bowels.

The influence of emotion on the muscular action of the digestive tract cannot always be predicted in advance. Some sensitive persons become readily nauseated, and vomit when unpleasant emotion is experienced. Looseness of the bowels and diarrhea may result from fright or nervous tension. In others, constipation results from experiences which cause nervousness or unpleasurable emotion.

The results of nervous tension and emotional imbalance have such profound influences upon the digestive tract that in actual practice the physician must be ever alert to distinguish between the impact of nervousness or emotional disturbance and organic disease of the stomach and intestines. Symptoms of distress and altered function in the digestive tract due to these functional disturbances often closely simulate actual disease of the stomach or bowels themselves. Many persons

. . . DOUGHNUTS . . .

By Harley E. Rice

The doughnuts were hid on a shelf out of sight,
But just before going to bed
Daddy found them and ate them—then tossed all the night
And complained of an ache in the head.

who regard themselves as dyspeptics and as having weak digestion actually have good digestive organs, but their normal rhythmic action is disrupted by the play of nervous and emotional reactions upon an oversensitive nervous system.

Food was intended to be enjoyed in amounts best suited to the needs of the body, and eating was intended to be a pleasurable experience. All this, therefore, emphasizes the practical point that food should be made palatable and attractive and that the circumstances relating to mealtime should be the most pleasant. Worry, anxiety, anger, disgust, ill-temper, etc., have no place at the dinner table and are therefore to be banished from the dining room at least.

In addition to the psychic secretion stimulated by the sight and smell of food, a flow of saliva is started by placing food in the mouth. This is due largely to stimulation of the highly sensitive organs called taste buds, located chiefly on the tongue, which are affected by the presence of food in the mouth.

The gastric secretions, elaborated by glands in the stomach, are initiated by the pleasant sensations of eating and other factors related to the psychic secretion. Certain highly appetizing foods contain substances called secretagogues, which promote secretion by acting directly upon nerves lying in the mucous membrane. As digestion proceeds, other substances are formed which are absorbed into the blood stream and are carried to the gastric and other glands, which in turn are set to work in preparing the enzymes and fluids needed to accomplish digestion.

In the whole process of digestion the functions involved are co-ordinated and regulated by various factors, only a few of which are under voluntary control.

To tell the whole story of digestion and the technical features of physiology governing the processes would perhaps not be profitable, and would require the space of a book. It is important, however, that everyone learn simple, practical rules for taking the best care possible of the digestive tract.

Since these organs and glands are such complex and delicately controlled functioning laboratories, it is not difficult to understand that periods for rest and recuperation are needed. It is during periods of rest, when food is not present, that the glands recuperate and become ready for another secretory cycle. Inadequate rest periods—intervals between meals—and irregular function, necessitated by snacks between meals and at irregular hours, do not make for good digestion and rhythmic action of the stomach and bowel tracts.

It becomes apparent from this brief discussion that nervous tension and unhappy emotional states impair the digestive organs and that pleasurable experience and a happy state of mind materially aid digestion, also that regularity in eating, with avoidance of between-meal snacks, is desirable. Let it be remembered that the laws of physiology designed to co-ordinate bodily functions are as real as the objective physical laws of nature. Disregard of these laws leads to difficulty sooner or later and the penalty for violating the laws of our being is often experienced long after the transgression is forgotten.

GOOD DIGESTION

HAROLD M. WALTON, M.D.

EWING GALLOWAY

Wholesome, Colorful Food Eaten in a Cheerful Atmosphere Encourages Proper Digestion

The Fine Art of

USING A TOOTHBRUSH

By ARTHUR B. CRANE, D.D.S.

THE tendency to decay in the teeth of civilized man may be largely traced to the invention of the knife and fork and cookstove.

The forms and positions of the teeth are so designed that the tearing and chewing of tough, fibrous food produce friction on every exposed part of the teeth. They are thus kept clean and polished. Not only this, but the supporting gum tissue is so devised by nature that it is stimulated by tough food substances. Wherever people derive their main sustenance from soft foods requiring little mastication, the teeth have been subject to decay and the gums to disease. On the other hand, where the teeth have been vigorously used from their first period of eruption, decay and gum troubles are a rarity.

A convincing illustration of the foregoing statements may be seen in the mouths of the Eskimos. Before the approach of the white man's civilization they lived largely on tough, dried, and even frozen food, which required much mastication. In addition, from early childhood they all spent hours chewing on various hides to soften them to make clothing. When the first recorded dental examinations were made, the teeth, even of the oldest people, were free from decay and the gums were hard and healthy. With the coming of the white man's trading posts, canned foods began to replace the native fare, and fabricated goods were available as a substitute for the chewed leather. The result was quickly manifest in the teeth of the younger generation. Decay became prevalent, and gum diseases began to appear.

Inasmuch as we cannot materially change our eating habits, it is a good thing that we have the toothbrush, for this acts as a somewhat inefficient substitute for the vigorous chewing of coarse food. There are many makes and shapes to choose from, but most of them are unsuited for thorough cleansing of the teeth. In selecting a brush, get a small short one about an inch in length, consisting of two rows of bristle tufts widely separated. The bristles should be long and stiff and of even length. Brushes with curved surfaces or extending tufts will not function properly in all parts of the mouth. Stiff, unbleached bristles are best in most cases, although it may be necessary to work up to this gradually. It is a good plan to buy two or three brushes at a time, and use them alternately, in order that bristle stiffness may be retained. Brushes that have been used until the ends of the bristle tufts begin to mat, should be discarded.

The correct use of the brush accomplishes two things: first, the stimulation of the blood supply of the gums and the hardening of the surface tissues, which build up a high state of resistance against disease; and second, the thorough cleaning of all surfaces of the teeth.

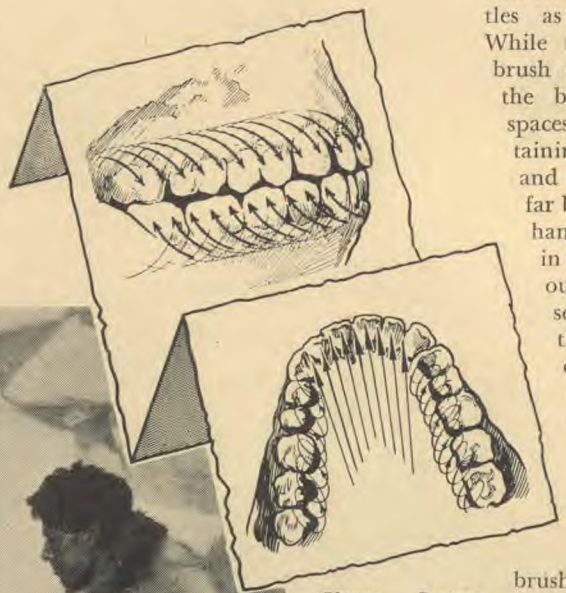
The gums are covered with the same type of tissue as the palms of the hands and soles of the feet; and just as these parts become calloused and resistant to infection through rough usage, so the gums will respond to strenuous massage with the toothbrush.

The brush should be used in a systematic manner, routinely doing one thing after another until the operation is complete. The brush is covered thickly with a good soapy tooth paste or powder, and, with the bristles pointing upward, is introduced into the mouth to the left upper molar region. The points of the bristles should be carried as far up as the space between the cheek and the gum permits, while the handle of the brush is kept as near parallel with the chewing surfaces of the teeth as possible. Next, turn the bristles inward against the gum and press them against it until the bristles are under tension. The bristles should be bent to form a curvature similar to that of the bristles of a broom when doing heavy sweeping.

Holding the bristle tension on the gum, give the brush a shimmying motion back and forth, keeping the points of the bristles as nearly stationary as possible. While this movement is going on, the brush is gradually dragged down until the bristles are felt penetrating the spaces between the teeth. Still maintaining the curvature of the bristles and the shimmy, force the bristles as far between the teeth as possible. The handle of the brush is then rotated in such a manner as to sweep off the outer surfaces of the teeth. This series of movements is repeated in the left upper bicuspid region and on the left front teeth, and then in the same sequence on the right upper teeth and the left and right lower teeth.

In the lower jaw, of course, the brush is introduced into the mouth with the bristles pointing downward. The brush is again covered with paste or powder and passed into the left side of the mouth with the bristle points against the teeth. The mouth is almost completely closed, and with a wide circular motion, including both

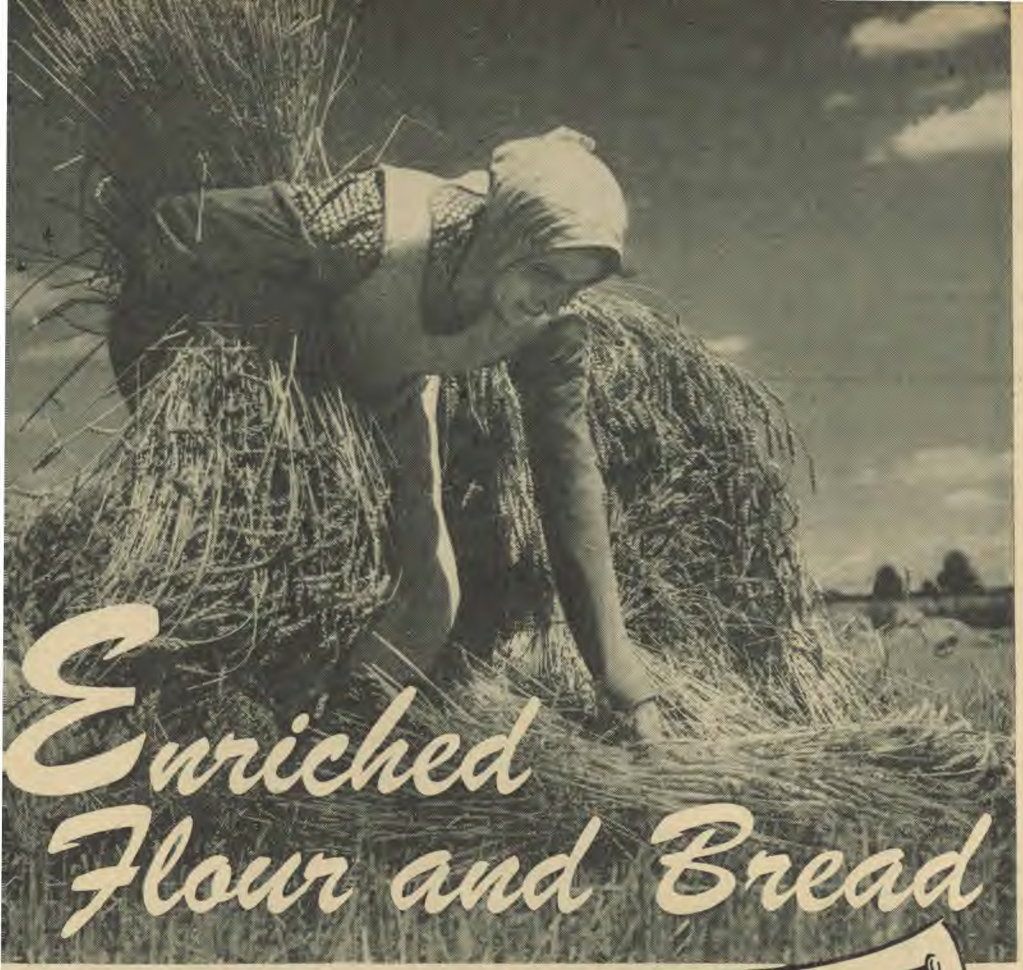
(Continued on page 46)



Above: Arrows Show Proper Direction to Effect a Good Tooth Cleansing, Which Should Take About Three Minutes

EWING GALLOWAY

Left: Tooth Decay Among the Eskimos Was Hardly Known Until Civilization Introduced the Soft Diet



Enriched Flour and Bread

What Do They Mean to the Nation's Health?

by
LELA E. BOOHER, Ph.D.,* and IDA BEHAN

BREAD and flour we have usually taken very much for granted, but there are times when we feel most deeply about them too. It has been thus since the dawn of civilization.

The reader needs only to call to mind the Biblical story of Pharaoh's chief baker to appreciate how strongly this king of ancient Egypt felt about his bread. The ancient Romans, recognizing that the mills along the Tiber and the aqueducts were vital to the very existence of army and civilians alike, must have experienced great anguish when these were singled out as chief military targets by the enemies of their city. And so down through the centuries men have known that wars can be lost and revolutions fanned to great violence when the people have no bread.

Flour and bread have always been among the least expensive of the basic foods and come very close to being the last line of defense against hunger for people of Western civilizations. It is not by accident that men's minds turn to thoughtful consideration of bread and flour in times of national crises or when practical consideration is given to ways and means of prompt and effective improvement of a nation's basic food supply.

Every day, and usually three times a day, most men, women, and children in this country eat some form of bread or other kind of wheat-flour products. The food values of bread and flour are therefore carried far and wide, and very few people in our total population can escape sharing in such improvements in these products as meet with popular approval and become established in the interest of the common good.

In 1940, when the historic Battle for Britain was getting under way, the British Ministry of Food gave serious thought to the nutritional improvement of their flour and bread. In that same year medical advisers to our own Government, seeing the grim spectacle of war coming closer to us, recommended the addition of vitamin B_1 (thiamine) to white flour destined for use by our armed forces. These same advisers also expressed the opinion that our civilian population could benefit by similar fortification of flour going into the ordinary channels of trade in this country.

Shortly thereafter the enrichment of family white flour and baker's bread and rolls was advocated by national nutrition leaders, first assembled late in 1940, upon request of our Federal Government for advice on practical means of improving the quality of our national diet. Many leaders in medicine and nutrition insisted that niacin and riboflavin as well as thiamine should be included as enrichment ingredients for white flour and bread. This recommendation was based upon recognition of the prevalence of pellagra (a disease caused by insufficient dietary supplies of niacin) and increasing evidence of riboflavin inadequacies in many American diets, particularly among families of the low- and moderately low-income groups. With regard to riboflavin there was also concern over the possibility of wartime shortages among the common foods which ordinarily contributed much of the riboflavin to our diets. The addition of iron to white bread and flour was recommended as assurance against the development of anemias due to dietary deficiencies of this nutrient.

Following several public hearings held in Washington, under Government auspices as provided for under authority of our Food, Drug, and Cosmetic Act, a standard definition for enriched flour was adopted. This establishment of a standard for enriched flour was an important step, since it provided consumers,

(*Continued on page 47*)

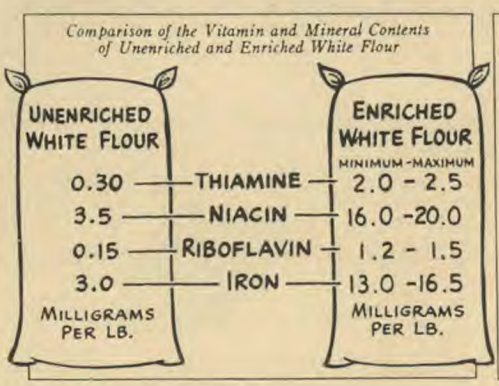


Figure 1

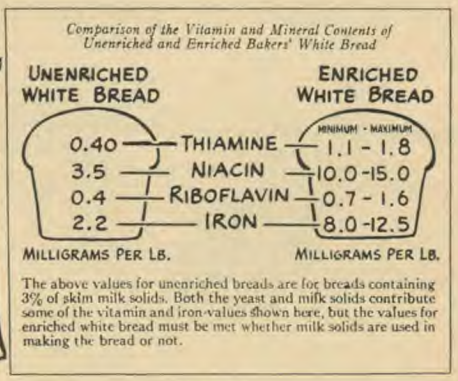


Figure 2

* Member of the American Institute of Nutrition, American Society of Biological Chemists, American Association for the Advancement of Science, Society for Experimental Biology and Medicine, and American Chemical Society. For years a member of the editorial board of *The Journal of Nutrition*.

Why are cereal foods so

THE REASONS for the importance of breakfast are well known to the readers of Life and Health. The morning is the "workingest" part of the day. It is preceded by a fast of 12 or more hours. Unless the breakfast supplies sufficient nourishment, an impairment in the morning's energy is likely to follow.

Even more important, the nutrients supplied at breakfast lighten the load that must be carried by the other two meals of the day. Those who "skimp" breakfast must eat a larger lunch or dinner. The result is often impaired efficiency.

An adequate breakfast, say nutritionists, should contribute from one-fourth to one-third of the day's needs. This means it should supply a variety of dietary essentials. Dietitians find that this is most easily accomplished when cereal foods are at the heart of the breakfast pattern.

The contributions of a typical cereal and milk are shown on the page directly opposite. You will note that the cereal, and the milk with which it is served, supply almost a third of the food energy of the typical "basic" breakfast menu there presented . . . and from a third to two-thirds of most of the nutrients listed. Another cereal food (toast) also makes an important contribution to this breakfast.

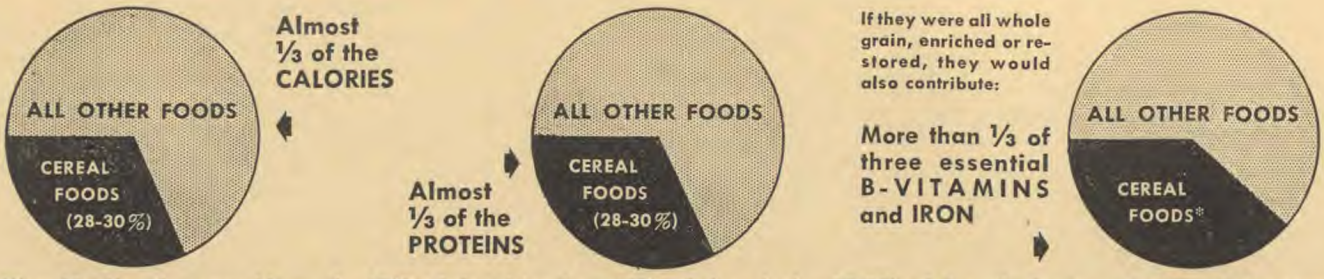
The enrichment and restoration of cereal foods has given them a much more fundamental role in the American dietary. They are in many senses "foundation" foods.

For instance, in the better breakfast program, they furnish a key to the attainment of the nutritional objectives desired. *Their importance in the breakfast scheme is that they make an adequate breakfast possible more easily!*

Here are the percentage contributions made by a one ounce serving of three ready-to-eat breakfast cereals to the minimum daily adult requirements (as established by the Federal Security Agency):

Here is the contribution of cereal foods (flour, cereal breakfast foods, etc.) to the Average American Diet:

Cereal foods contributed almost a third of the calories and proteins to the average (pre-war) 2800 calorie American diet, and if they were all whole grain, enriched or restored, they would contribute over a third of the thiamine, niacin, riboflavin and iron. (*Data are adjusted for losses in cooking.*)



*Specifically, they would supply 40% of the thiamine, 45% of the niacin, 38.5% of the riboflavin, 45-46% of the iron (based on recommended daily allowances as applied to the average American pre-war diet of 2800 calories).

important to breakfast?

A TYPICAL BASIC BREAKFAST PATTERN

Orange Juice (½ cup)
Egg
(1)

WHEATIES WITH MILK
(1 oz.) (½ cup)

Toast and Butter
(2 slices) (1 tbsp.)

Beverage with Sugar and Cream
(1 tsp.) (1 tbsp.)

In the typical basic breakfast pattern at the left, cereal and milk supply approximately ⅓ of the calories and from ⅓ to ⅔ of all but 2 of the remaining nutrients listed for that meal!

NOTE how the cereal and milk supplement each other especially in respect to calcium, iron, thiamine, riboflavin and niacin. Orange juice makes up the deficiency in Vitamin C. Butter and cream make the principal Vitamin A contribution in this breakfast.

Percentage contribution to the basic breakfast at left:

	WHEATIES (1 ounce)	MILK (4 ounces)	WHEATIES PLUS MILK
Calories	18.0%	14.6%	33%
Protein	16.3%	22.6%	39%
Calcium	3.7%	59.8%	64%
Iron	28.9%	6.7%	33%
Vitamin A	0.0%	14.0%	14%
Thiamine	26.3%	10.5%	35%
Riboflavin	6.7%	40.0%	50%
Niacin	52.2%	2.8%	52%
Vitamin C	0.0%	3.0%	3%

To help you solve your wartime baking problems...

THE BETTY CROCKER STAFF OFFERS YOU THIS 8 PG. BULLETIN WITH TIMELY SUGAR-AND-SHORTENING SAVING IDEAS AND RECIPES . . . TOGETHER WITH RECIPES FOR SIX OF THE WONDERFUL BETTY CROCKER NEW METHOD GOLD MEDAL CAKES

OFFERED to introduce you to General Mills' Betty Crocker service and to help you serve nutritious baked foods despite wartime shortages, this timely bulletin is yours for the asking.

It gives you ideas for saving sugar in a dozen types of bakings and desserts—a table on how to substitute corn syrup—a table to help you cope with the shortening shortage—recipes for sugarless icings and sugar-saving desserts and bakings—how to extend butter, etc.

It also gives you recipes for six of the wonderful Betty Crocker New Method Gold Medal Cakes that cut mixing time in half. They require no creaming of shortening or beating of eggs . . . yet give you tender, fluffy, amazingly delicious cakes. Syrup may be substituted for half the sugar in the recipes for these cakes, *with* exceptional results.

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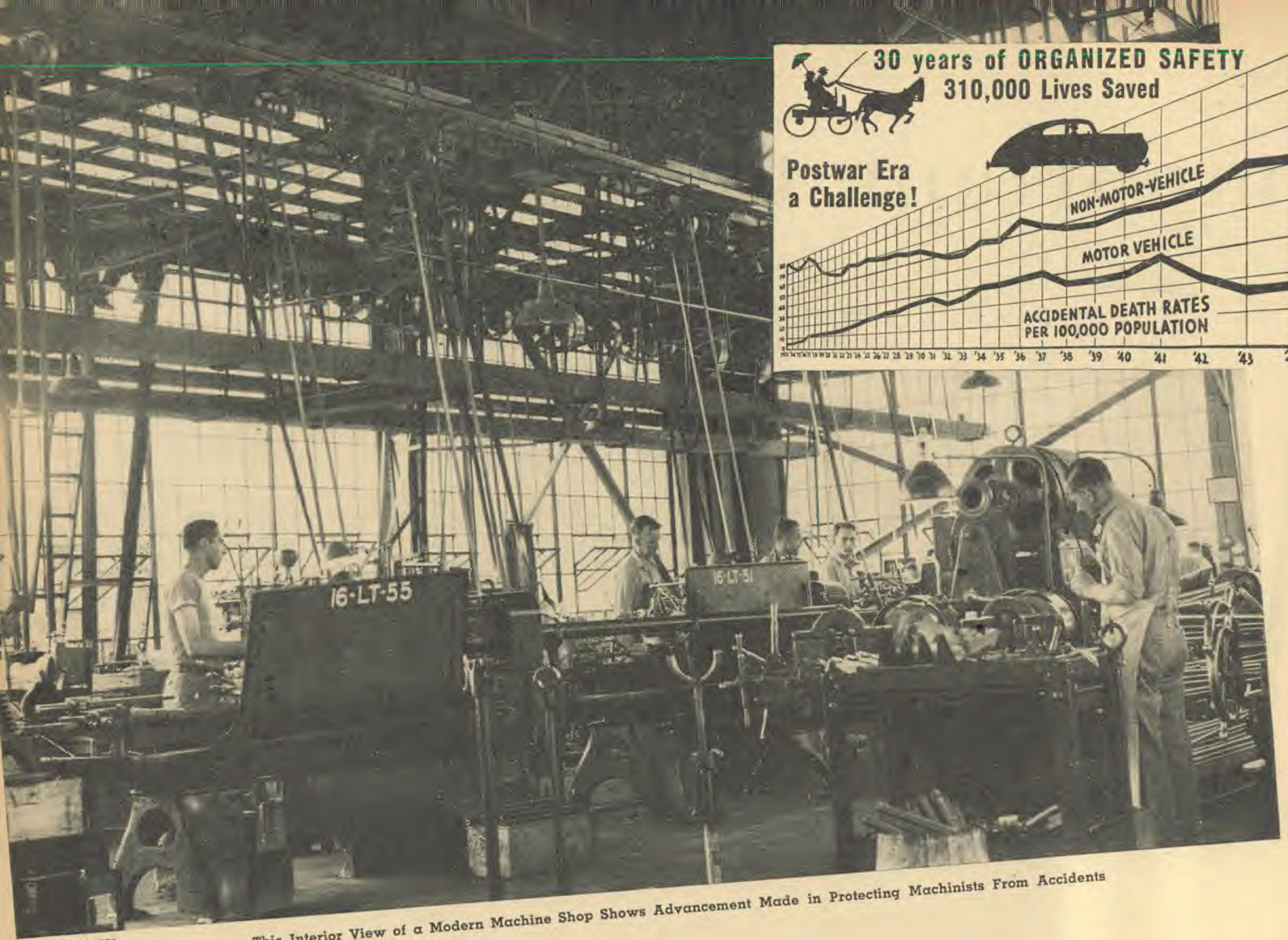

H. A. ROBERTS

This Interior View of a Modern Machine Shop Shows Advancement Made in Protecting Machinists From Accidents

GREAT ADVANCES IN *Safety for*

WORKERS in the organized safety movement look at their record of achievement with mixed feelings. Like medical men, they can see the results of their progress in living, healthy people. They are happy and proud when they realize that something like twenty thousand people are alive today who would have been killed last year if the accident death rate of thirty years ago had not been reduced by an organized battle for safety.

But they are neither happy nor proud when they realize that every sixth minute brings accidental death to some American—that every third second the clock ticks off means that another American has been wounded, not by a German or a Japanese, but by an accident on the home front.

* President, National Safety Council, Chicago.

Accidents kill almost as many Americans as does nephritis, considerably more than do pneumonia, tuberculosis, diabetes, or influenza.

Safety workers, then, realize that however long the road they have come, the road ahead is longer—that it is, in fact, a road without an end. This is a realization that they share with all who seek, by whatever means, to protect and improve the health of humanity.

Here, briefly, is the story of accident prevention:

In 1885—the year that LIFE AND HEALTH was founded—the State of Alabama passed an Employers' Liability Law, designed to make the employers financially responsible for work accidents. That fact seems flat and dull. Yet it is truly one of the more important legislative acts in American history.

Do you know what a factory was like in those days? It was a dark, ill-ventilated firetrap, packed to the rafters with mazes of belts that carried power from a central steam engine or water wheel to all the various machines. Neither the belts nor the steel jaws and teeth of the machines were guarded in most cases.

Why, went the reasoning of sixty years ago, put on guards? Accidents were always happening. They were acts of God. Or maybe they were just the results of the stupidity of the hired hands. If a worker donated a hand to an unguarded punch

press, he deserved only the sympathy that wise men feel for fools. He should have known better than to put his hands under the press. If a man was snatched off his feet and rolled along a main belt till he was crushed on a giant pulley, he was simply careless or he didn't "live right." Sometimes, of course, the wrong man was injured. If there was a puddle of grease on the floor, and a man slipped and fell into a vat of boiling water, obviously the sinner was the janitor who didn't clean the floor properly. Or if there was a fire, it was either God or a careless smoker who was blamed.

Note that in all this false reasoning, one person always escaped responsibility. This person was the employer, and he almost always escaped legal responsibility for accidents. There were, of course, some employers who accepted moral responsibility and made sincere efforts to prevent accidents, but undeniably there were shortsighted industrial leaders who ignored the safety of their employees.

The Alabama law of 1885 had plenty of loopholes. Its direct benefit was slight. But it did start something. Other States passed more stringent laws. A growing sentiment for real workmen's compensations developed, with the clergy, the press, and the labor unions as its voice. The purpose was to assure to the employee some financial assistance whenever he was incapacitated by a work injury. Led by New Jersey, State after State passed such laws in the second decade of this century.

This Woman May Be the Victim of an Accident. One-third of Accidental Deaths Are in the Home

KAUFMANN-FABRY

Civilians

By NED H. DEARBORN, Ph.D.*

This Accident Helped to Swell the Casualty List

Every State in the Union except Mississippi now has such a law.

The significance of such compensation laws is enormous, and their effect has been far greater than the mere compensation paid. These laws place the financial responsibility for *all* work accidents upon the employer. They say, in effect, "Mr. Employer, you will find ways and means to protect your workers against injury, or you will pay for the injury. It is up to you to choose."

The early liability laws had brought the insurance companies into the picture. Workmen's compensation laws involved them even more deeply. They went to work on the problem of occupational accidents—employed engineers, inspected plants, made suggestions. Their actuaries followed the accident rates of companies closely, translating the pain and death of accidents into hard, easily understandable figures which, properly prefixed by dollar signs, sent even the cost accountants into the fight to save lives and limbs.

There had, of course, been many far-sighted businessmen and managers who had been safety-minded before. Now, however, they had the clear proof of the wisdom of their enthusiasm. In 1912 a small group of engineers met in Milwaukee at the call of the Association of Iron and Steel Electrical Engineers. Manufacturers, insurance companies, and Government agencies sent representatives to exchange ideas and learn more about the art of reducing industrial casualties.

They did more than that. They called another meeting for the next year, a larger meeting, and this gathering organized the National Council for Industrial Safety. Within two years, however, the members realized that the organization should not be limited to the problem of industrial safety alone. Industry had no monopoly on accidents. In accepting responsibility for safety activities reaching home, farm, and public places, as well as factories and railroads, the organization changed its name to the National Safety Council, and adopted the motto, "Universal Safety."

The National Safety Council remained for some years essentially the unifying, co-ordinating, educational organization of industrial safety men. Its progress reflected a great forward stride in the thinking of our country's industrial leadership.

(*Con'd on p. 46*)

A Free Use of Posters Like These Helps to Make the Public Accident-Conscious

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.

Carbohydrate Percentage

"My doctor told me to eat fruits and vegetables of the groups lower in carbohydrate. Could you give me the percentage of carbohydrate in the common fruits and vegetables?"

Authorities differ slightly on the classifications. The list here given is one presented to patients by an institution in which many diabetics are treated. By percentage of carbohydrate is meant the amount of sugars or starches, figured in grams, in one hundred grams, which is roughly equivalent to three and one-half ounces. The accompanying table will be helpful.

Decaffeinated Coffee

"Please tell me whether the tannin is removed from the decaffeinated coffees. I am using them. According to the label the caffeine is removed."

No, unfortunately, the tannin is still in the decaffeinated coffees. Tannin is also found in tea and chocolate and certain plants. Because of its astringent qualities it has been considered undesirable, and methods of preparing tea and coffee have always been judged on the amount of tannin in the beverage after brewing. Recently probable cancer-producing elements have been found in tea and coffee. The experiments were on animals. Very fine cereal beverages are on the market and also soybean coffees and lovely delicate teas, such as red clover, mint, and alfalfa.

Egg Powder

"Is egg powder less liable to disease than eggs themselves as we ordinarily use them? Would using egg powder be on the same basis as using canned milk? By this I mean is egg powder not only pasteurized but sterilized?"

Egg powders consist of dried whole eggs—dried whites and dried yolks. The drying is done in barely warm air, but it is so complete that any future growth of bacteria is entirely stopped or at least greatly retarded. The processing of the eggs does not assure sterilization. The manufacturers claim that the bacterial content of dried eggs is like that of the Government standard for grade A milk. Dried eggs are a great convenience.

Vegetables Classified as to Carbohydrate Content

Group 1 (3% Carbohydrate)

Asparagus, fresh and canned
Bamboo shoots, fresh
Beans, green and wax, canned
Bean sprouts (mung), fresh
Beet greens, fresh
Broccoli, fresh
Cabbage, fresh
Cabbage, Chinese, fresh
Cauliflower, fresh and canned
Celery, fresh and canned
Chard, fresh
Chayote leaves, fresh
Chicory leaves, fresh
Cress, garden, fresh
Cucumbers, fresh
Dock, fresh
Endive, fresh
Escarole, fresh
Fennel, fresh
French endive, fresh
Lettuce, fresh
Mustard greens, fresh
Radishes, fresh
Sauerkraut, fresh and canned
Sorrel, fresh
Spinach, fresh and canned
Squash, summer, fresh
Tomatoes, fresh and canned
Tomato juice, fresh and canned
Turnip tops, fresh
Vegetable marrow, fresh
Water cress, fresh

Group 2 (6% Carbohydrate)

Beans, scarlet runner, green pods, fresh
Beans, snap, green and wax, fresh
Carrots, canned
Celery root or celeriac, fresh
Chayotes, fruit, fresh
Chives, fresh
Collards, fresh
Dandelion greens, fresh
Eggplant, fresh
Kale, fresh
Kohlrabi, fresh
Lamb's-quarters, fresh
Leeks, fresh
Okra, fresh
Parsley, fresh
Peppers, green and red, fresh
Pimientos, canned
Pumpkin, fresh and canned
Soybeans, green shelled, fresh
Soybean sprouts, fresh
Squash, cushow, fresh
Squash, winter, fresh
Turnips, fresh

Group 3 (9% Carbohydrate)

Artichokes, Globe or French, fresh
Beets, fresh and canned
Brussels sprouts, fresh
Carrots, fresh
Onions, fresh
Parsley, fresh
Peas (very young), fresh and canned
Rutabagas, fresh

Group 4 (12% Carbohydrate)

Beans, Lima, green, canned
Soybeans, dry

Group 5 (15% Carbohydrate)

Beans, broad beans, green, shelled
Beans, red kidney, canned
Corn (very young), fresh
Jerusalem artichokes, tubers, fresh
Parsnips, fresh
Peas (medium mature), fresh
Salsify, vegetable oyster, fresh

Group 6 (18% Carbohydrate)

Beans, baked, canned
Corn, sweet, canned
Garlic, fresh
Horseradish, fresh
Potatoes, fresh

Miscellaneous (High Carbohydrate)

Beans, broad beans, dry
Beans, kidney or common, dry
Beans, Lima, dry
Black-eyed peas, dry
Chick peas, dry
Corn, sweet and field, dry
Cowpeas, fresh, green, shelled, and dry
Garbanzo peas, dry
Lentils, dry, whole, and split
Peas, fresh (mature)
Peas, dry, whole and split
Sweet potatoes, fresh and canned
Tomato catchup
Yams, fresh

Note

The vegetables listed in the miscellaneous group are all very high in carbohydrate content and should be calculated at their own specific values.

Fruits Classified as to Carbohydrate Content

Group 1 (4% Carbohydrate)

Tomatoes, raw and cooked

Group 2 (6% Carbohydrate)

Blackberries, canned, W.P.
Cantaloupe
Gooseberries, canned, W.P.
Melons, honeydew, casaba, and Spanish, fresh
Muskmelons, fresh
Peaches, canned, W.P.
Plums, excluding prunes, canned, W.P.
Strawberries and juice, fresh
Strawberries, canned, W.P. and J.P.
Watermelon, fresh

Group 2 (6% Carbohydrate)

Applesauce, canned, unsweetened
Apricot, canned, W.P.
Blackberries, canned, J.P.
Blackberries and juice, fresh
Blueberries, canned, W.P. and J.P.
Cherries, red and white, canned, W.P.
Cranberries, fresh
Currants and juice, fresh
Gooseberries, fresh
Grapefruit and juice, fresh
Grapefruit, canned, W.P. and J.P.
Lemon, fresh
Lemon juice, fresh and canned
Limes and juice, fresh
Loganberries, canned, W.P.
Loganberry juice, fresh
Oranges, mandarin type and juice, fresh
Papayas, fresh
Peaches, canned, J.P.
Pears, canned, W.P.
Prunes, canned, W.P.
Quince juice, fresh
Raspberries, canned, W.P.
Tangerines and juice, fresh

Group 4 (12% Carbohydrate)

Apple juice, fresh
Applesauce, canned, J.P.
Apricots, fresh and canned, J.P.
Cherries, sour, fresh
Cherries, red and white, canned, J.P.
Crab apple juice, fresh
Figs, canned, W.P.
Grapefruit juice, canned, unsweetened
Grapes, canned, W.P.
Guavas, fresh
Kumquats, fresh
Loganberries, canned, J.P., and fresh
Mulberries, fresh
Oranges and juice, fresh and canned
Peaches, fresh, and juice, canned and unsweetened
Pears, canned, J.P.
Pineapple, fresh and canned, W.P.
Pineapple, juice, fresh and canned
Plums, excluding prunes, fresh
Quinces, fresh
Raspberries, fresh, and juice, canned, J.P.

Group 5 (15% Carbohydrate)

Apples, fresh
Blueberries and juice, fresh
Cherries, black, canned, W.P.
Grapes, fresh
Huckleberries and juice, fresh
Mangoes, fresh
Nectarines, fresh
Papaws, fresh
Pears, fresh
Pineapple, canned, J.P.

Group 6 (18% Carbohydrate)

Cherries, sweet, fresh
Cherries, black, canned, J. P.
Crab apples, fresh
Figs, fresh
Grape juice, fresh or bottled
Persimmons, Japanese
Pomegranates, fresh
Prunes, canned, J. P., and juice

Miscellaneous Group (High Carbohydrate)

Apples, dried
Apricots, dried
Bananas, fresh and dried
Cherries, maraschino, canned
Currants, dried
Dates, fresh and dried
Figs, dried
Fruits, canned in sirup (all kinds)
Peaches, dried
Pears, dried
Persimmons, native, fresh
Prunes, fresh, canned, and dried
Raisins

Note

(1) W.P.—Water Packed
J.P.—Juice Packed
(2) Fruits listed in the miscellaneous group are all very high in carbohydrates and should be calculated at their own specific values.

Varicose Veins

(*Continued from page 14*)

Those who have a tendency to this condition should, as soon as they detect it, do everything possible to empty the vessels by elevating the legs frequently. Such a treatment can easily be carried out when in bed. If the patient lies on his back, with the thighs flexed at right angles to the body, the legs moved as if riding a bicycle, the muscles will then contract and, aided by gravity, the blood will readily empty through the veins. After the veins have been emptied in this manner, and before the legs are lowered, elastic bandages or elastic stockings should be applied. This will not necessarily strengthen the vessels, but it will keep the weakened walls from dilating and forming into sacs. If the superficial veins can be kept compressed in this way, the blood will be pushed through the communicating branches into the deep vessels, and there the muscle action will keep pumping the blood upward. To be most effective such elastic support should be applied in the morning and left on until bedtime.

After varices have actually developed, there is nothing that will restore the veins to a normal condition. Small varicosities such as "spider bursts" can be treated by injection alone. The vein which supplies this network of capillaries is searched for and injected with a medicine which will cause a local inflammation. That vein will then fuse so that no more blood will enter from it into the small vessels which lie beyond it. Other varicose veins which are not too large may be treated in the same way.

However, if there are many of them, and if there is a tendency to an increase both in number and in size, then the proper treatment is surgical. The surgeon will perform a small operation in the groin by tying off the big external vein in the thigh and putting a sclerosing solution into it. The vein will then be fused as far down as the solution has penetrated. After this has taken place the varicosities which remain lower down in the leg are treated locally with injections. When all these weak blood vessels have been sclerosed, that is, fused so that no blood can run through them, then the return flow of blood in the leg goes through the deep veins only. This treatment can be used only if the deep vessels are functioning normally. Their capacity for carrying blood is found out by the use of various tests.

The most common and severe complication of untreated varicose veins is an ulcer. If it is not taken care of it is not likely to heal by itself. Many treatments have been proposed for this, and most of them are based on the same principle, namely, compression. For this purpose elastic bandages, compression with sponges, special casts, and various kinds of adhesive tapes have been used. One of the very latest treatments for varicose ulcers is the use of red blood cells. When blood plasma is removed from whole blood, there is a large amount of red cells left over. These cells, made into a paste and painted on the ulcers, seem to have great healing properties.

When the following conditions exist, the surgical treatment of varicose veins should not be undertaken: (1) Local or extensive infectious thrombophlebitis (milk leg); (2) an active infection in any part of the body or an acute cold; (3) a marked heart disease; (4) obstruction of the deep veins in the legs; (5) tuberculosis; and (6) overactivity of the thyroid gland.

People who have a tendency to varicose veins should visit a doctor who is competent in handling such cases. He will determine whether preventive treatment is sufficient or surgery is required. If the latter treatment is imperative it is much better to have it early than late, because small varicose veins can be taken care of better than larger ones. After the treatment has been successfully carried out, it is important to visit the doctor occasionally for further inspection, treatment, and instruction.

The operative treatment is usually successful, at least for some time. However, even if the operation has been performed and the vessels injected, there may be a relapse, and the percentage varies from one to twenty-three. If the vessels have been injected only, then the return of varicose veins is much greater.

It would be well to repeat that varicose veins usually develop in those with inherited weak vein walls, that development can be prevented by the choice of work, the use of exercise, and by the use of proper treatment. If varicosities have already developed, an operation plus injection is recommended. When this advice is followed, the prospects of prevention and cure are good.

By Edyth T. James, R.N., M.S.

Answers found on page 50; also in articles in the April LIFE AND HEALTH.

1. The average length of life in the United States is—
- *a.* 40-44 years. ( )
- *b.* 62-64 years. ( )
- *c.* 65-72 years. ( )
- *d.* 55-58 years. ( )

2. The condition that takes the life of most of those who die between the ages of fifteen and thirty years is—
- *a.* Rheumatic fever. ( )
- *b.* Motor-vehicle accidents. ( )
- *c.* Appendicitis. ( )
- *d.* Pneumonia. ( )
- *e.* Tuberculosis.

3. The importance of the mental-disease problem is indicated by the fact that—
- *a.* Thirty out of every one hundred die in mental-disease hospitals. ( )
- *b.* Mental diseases have become the most common of all diseases. ( )
- *c.* One out of every twenty persons is treated in a mental-disease hospital. ( )
- *d.* So many people think that they are losing their minds. ( )

4. The one condition among the following that does not indicate a weakening of personality is—
- *a.* Thinking that one is being talked against by others. ( )
- *b.* Being persistently tired but finding sleep almost impossible. ( )
- *c.* Lacking the ability to concentrate and get work done on time. ( )
- *d.* Living in the city with little recreation, security, rest, or quiet. ( )

5. Most important in increasing the length and joy of life is to—
- *a.* Avoid the use of rich and highly seasoned food. ( )
- *b.* Keep hopeful, courageous, and cheerful. ( )
- *c.* Avoid overeating or eating between meals. ( )
- *d.* Have a physical examination once a year. ( )
- *e.* Keep the blood pressure, pulse, and weight low. ( )

6. The most successful treatment for injury of parts that move is to—
- *a.* Immobilize the injured part. ( )
- *b.* Rest it in bed from two to twelve weeks. ( )
- *c.* Exercise it regularly under medical supervision. ( )
- *d.* Use a diet rich in vitamin A and calcium. ( )
- *e.* Apply pressure bandages to the injured part. ( )

7. The best description of health is—
- *a.* Freedom from pain and discomfort. ( )
- *b.* Normal functioning of the organs of the body. ( )
- *c.* Living in harmony with the laws of life. ( )
- *d.* Ability to keep working every day. ( )

8. Because of increased decay of sailors' teeth, the Navy is recommending—
- *a.* The drinking of less water. ( )
- *b.* More fresh fruit in the diet. ( )
- *c.* Calcium tablets daily. ( )
- *d.* A decreased use of soft drinks. ( )

9. The most common cause of pain in the back is—
- *a.* Kidney disease. ( )
- *b.* Tumor of the spinal cord. ( )
- *c.* Infantile paralysis. ( )
- *d.* Arthritis. ( )
- *e.* Tuberculosis of the spine. ( )

10. Most important in maintaining foot health is—
- *a.* Cutting the toenails straight across. ( )
- *b.* Bathing the feet daily in warm water with mild soap. ( )
- *c.* Preventing diabetes. ( )
- *d.* Wearing arch supports. ( )
- *e.* Wearing proper shoes. ( )

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

Days of June

HERE is the month of perfect days. Every season has them, but they are more of a habit with June. June boasts not only of beautiful days but of weddings, weedings, new peas, early potatoes, strawberry shortcake. School is out and the children are full of plans for the summer, plans that must be set in operation at once. Little Patsy, the baby girl we are taking care of in our home, is wide-eyed with wonder at each new lovely thing. Jerry, the colt, is getting used to harness and learning the sad fact that life is not composed of kicking up one's heels in a fresh verdant pasture. The weeping willows by the brook are breathtakingly beautiful in their lacy green dress. The roses are a profusion of bloom. Several old biddies are getting nervous over the wanderings of their chicks. Canning is under way. It's a busy, beautiful time of year.

Freaks

Now, how should one who has been "enthusing" over June suddenly turn to freaks? Well, you will see. When a certain musical program is on the air I like to have my basket of mending handy so I can mend while I listen, or vice versa. At other times I prop up a book of favorite poems to read. Did you ever read the poem in *Ted Malone's Scrapbook* entitled "Plea for Personal Attention" by Irma Wassall? Do. It challenges one to stand on a city street and watch the freaks go by. The freaks, the poet points out, are not those born deformed or deformed through war or accident but those who through lack of personal attention have become waddling ducks or misshapen through bad posture or other forms of neglect. A mirror is a wonderful thing to have to bring you up to attention, to tell you what neglect may do to you. June is beautiful; we should aim to be.

The hot summer months are beginning. Now more than ever we need to give attention to personal grooming, frequent shampoos, daily bath, fresh lingerie, clean, crisp, cotton house dresses, the habitual use of a good deodorant. We shall be on our feet more. Let us change our shoes often, use shoe trees to keep them in good shape, give our feet good care, wearing the shoe that is fitting for the work we do.

A Quiet Room

SPEAKING of poems, another in the aforementioned volume, and one which will inspire you, I am sure, is entitled "Like a Quiet Room." It is a man's tribute to his wife. Each might ask herself the question, "Would my husband say this of me? Could he honestly? Does my life mean quiet, relaxation, beauty, sympathy, to those with whom I associate daily? Or am I becoming a nagging woman?" It would be better than fame, better than power, better than wealth, to have such an influence on other lives, wouldn't it?

Dill Pickles

SEVERAL have asked me for a good recipe for dill pickles, made without vinegar. Beulah Zager, of Maryland, tells us that her dill pickle recipe gives you perfect pickles. This is how she makes them. Add 1 cup of salt to 17 cups of boiled water. Let cool. Wash cucumbers, prick well with fork, place in jar with at least 6 grape leaves and dill. Cover with above water, seal. After a few days they will begin to work and will run over, but don't touch the lids to tighten, for that breaks the seal. The grape leaves keep the pickles firm. And, Mrs. Zager adds, that's all there is to it.

Refinishing Furniture

"OLD furniture of good quality and construction can be refinished at home to give a new and brighter appearance to your rooms," suggests Miss Dorothy Iwig, home furnishings specialist, University of Illinois College of Agriculture.

"Three steps are involved in the refinishing process—the removal of the old finish, preparation of the surface for the new finish, and application of the new coating. Usually it is the first step that requires the greatest expenditure of time and energy, for in order to assure the best results the old finish should be entirely removed with a sanding machine, a scraper, or a solvent.

"If either of the first two methods is employed, care must be exercised to prevent cutting deeply into the wood. Solvents may be mixed at home, or commercial remover may be bought from any reliable paint store. The latter is preferred, since the commercial product is safer for the operator and the furniture.

"Applications of the remover should be brushed onto the furniture and, when the old finish has softened, a putty knife or cloth used to lift it off. Care should be taken to work with the grain and not injure the wood. A heavy cloth is suggested to remove the finish from a carved or turned surface. The point of a nail can be used to clean the design.

"Two or three applications of varnish remover may be necessary to remove all the old finish. If there are any shiny spots or places that can be scraped into a light powder, some of the old finish remains. After removing all this, wipe the furniture with a cloth moistened with denatured alcohol or turpentine. This cleans the varnish remover from the surface. Rubbing alcohol is *not* suitable for this purpose.

"All surface stains and discoloration should next be taken out. A bleaching solution of one teaspoon of oxalic acid crystals dissolved in one pint of water is recommended. Apply lightly with a soft cloth, following the grain of the wood. Let stand a short time and then rub off.

"Make a second and even a third application of the bleach if necessary to remove all surface discoloration. After the last application rinse the surface with dilute household ammonia. If fuzz appears on the wood, remove it by sanding.

"The next step is to smooth the entire surface, apply filler and stain if needed, and proceed with the application of the new finish."

Early Apples

APPLE pies, applesauce, applesauce ice cream, and other desserts are made possible by the arrival of the transparents, or early apples. The first two are old favorites, but many have never tried applesauce ice cream. To two cups of unsweetened applesauce add four tablespoons of sugar and one-third cup of orange marmalade, or omit the marmalade and add more sugar. Fold in a half cup of cream that has been whipped. Freeze in refrigerator until of proper consistency. Stir occasionally during freezing period.

This recipe is offered by the University of Illinois College of Agriculture.

NEW! Healthful Nutritious Choplet-BURGER

Choplet-BURGER, the appetizing *NEW* meat-free product by the makers of famous CHOPLETS, helps you add savory variety to your menus. This new Choplet-BURGER flavor actually rivals the tempting, tasty deliciousness which has made CHOPLETS such an outstanding meat alternate. And as for nutrition, this combination of wholesome grains and legumes has few rivals. Just look at this list of ingredients: WHEAT GLUTEN, BREWER'S YEAST, SOY FLOUR, CORN MEAL, WHOLE WHEAT, OAT MEAL, TASTEX FOOD YEAST. All blended with mushroom broth and seasoning into a *completely* satisfying, *completely* nourishing vegetable "meat".

* *

Um-m-m! Appetizing burger sandwiches! Just shape the Choplet-BURGER into patties and brown in a skillet. Place between bread or in a bun, with pickle or onion if you prefer, and enjoy a Choplet-BURGER.

* *

Mix Choplet-BURGER with egg and cracker crumbs, mould into a loaf and bake to taste-tempting brownness in a medium oven. Serve with fresh garden peas and mashed potatoes, if you wish. Your family will vote for more!

* *

Remember, a healthy family is a happy one, and health is based upon proper, healthful food. Be sure you and your family get the bolstering, wholesome nourishment of hi-protein Choplet-BURGER.

Delicious Choplet-BURGER — a member of the famous Worthington Foods family.

Your health food dealer should now have Choplet-BURGER, as well as the famous CHOPLETS. If he does not, write to SPECIAL FOODS, Worthington, Ohio.

THERE'S WORTH IN Worthington FOODS

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A Product of

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the FAMILY PHYSICIAN Answers Questions

We do not diagnose or treat disease by mail. Enclose stamped, addressed reply envelope. Replies made only to letters from bona fide subscribers. Because of wartime claims on doctors' time, we cannot assure an immediate reply. Address Family Physician, LIFE AND HEALTH, Takoma Park, Washington 12, D. C.

Gluten

"I would like a recipe for making gluten at home."

Home gluten can be prepared by making a stiff flour dough, allowing it to stand for several hours, and then washing out the starch and collecting the gluten that remains as a stringy, fibrous mass. This can be shaped into any form that is convenient. (Certain flours have higher gluten content than others.) The flavoring of the gluten and its several preparations are matters of individual factory recipes, which vary according to the manufacturer.

Restoring Color to Gray Hair

"Will you give me some advice on the enclosed pamphlet?"

So far as medical science has been able to determine at the present time there is no absolute proof that the taking of pantothenic acid will restore darkness of color to hair that has already turned gray. I think the pamphlet you enclosed is a little enthusiastic. Experimental work which has been done thus far respecting the color of the hair has been carried out largely upon animals. It must be borne in mind that the life span of animals is much shorter than that of human beings. So, for proportionate results a period of many years would be required to see what may be seen in a few months in certain laboratory animals.

Inflammation of the Urethra

"I have been suffering with terrible inflammation of the urethra. I have a small growth at the mouth of the urethra, and every few days I notice gravel in the urine. Do you suggest anything I can do to clear up this acid condition?"

Small growths at the mouth of the urethra frequently are the cause of considerable distress and inflammation in this passageway. You may have aciduria; yet on test it could be that you would find the urine alkaline. The probabilities are that if this growth at the mouth of the urethra were removed, you would find that the inflammation, the gravel, and other distresses would disappear. We would suggest that you consult without delay a urologist or surgeon regarding this local condition.

Heart Murmur

"Please explain heart murmur, also tell whether it is a serious heart condition. Can a child of six years outgrow or overcome it? Is a heart condition which has been affected by rheumatic fever serious?"

There are many degrees of heart murmurs or "leaks," as well as several locations where they occur in the heart. Some of them are referred to as functional and others as organic. Functional murmurs have a limited effect upon the action of the heart. Organic murmurs, however, do detract from its effectiveness as a mechanical organ. Murmurs which follow rheumatic fever or acute infections commonly limit the effectiveness of the valves so that the heart must work harder to compensate for the injury. Whether a child will overcome a murmur is a question that experience only can answer. Usually an organic murmur once appearing is a permanent injury. Proper care may offset the injury completely in some cases. Any child who has had rheumatic fever should be very carefully watched and cared for with respect to his heart. In most instances some defect in heart action and general health remains, but under careful guidance the majority live useful, active lives.

Head Noises

"For six or eight months I have had, to a greater or lesser degree, noises in my head; the nearest I can describe them is to liken them to a concert of insects on a summer night. I am fifty-seven, and I sometimes think I don't hear quite as well as I might."

We judge that these are vibratory noises produced in the inner ear associated with changes in the blood vessels in this area. The fact that you are fifty-seven years of age would fit in with this. It is a time of life when the blood vessels are changing and becoming harder, and the effect produced by the circulation of the blood is interpreted as a mixture of sounds as it affects the delicate inner mechanism of the ear.

Mixed Tumor

"What is a mixed tumor?"

Mixed tumors are what the name implies—a mixture of elements that are found in various tumors, likely malignant, and they should be removed as early as possible.

Ulcerated Eyes

"I have ulcerated eyes. Is there any treatment that you could advise?"

Ulcerations that occur on the eyeball are often of a serious nature and are not to be regarded as simple ulcerations such as might occur on the skin or elsewhere on the body. For this reason we feel that a doctor should see you and prescribe treatment appropriate to the lesion present. Saturate boric acid solution may be used as an eyewash in emergency.

Drowsiness

"I have had sleeping attacks during the course of the day for a number of years, that is, while I am performing my normal work. My normal work is photographic, but I spend very little time in the darkroom."

I should think in your case it would be quite important to make a study of the glands of internal secretion, to determine whether you are producing a normal amount of thyroid secretion and other like internal substances. A lack of thyroid frequently is accompanied by a persistent drowsiness and desire to nap. Whether there is any condition affecting the function of the central nervous system is a question that could not be answered except by a careful medical examination.

Menopause

"I have been taking stilbestrol for menopause for a year now. I have gall bladder and kidney and liver trouble. Is this as good as theelin in oil taken by needle?"

Stilbestrol is the synthetic hormone, while in theelin you have the natural hormone. Chemically they are essentially the same, and in a great number of cases the clinical results accord. However, we sometimes find persons who do not tolerate stilbestrol well, or perhaps the amount taken is not properly or carefully gauged to the individual need. Theelin in oil is one of a group of standard preparations that time and experience have proved valuable. In our practice we use both these preparations and find them equally valuable in the treatment of certain conditions. If we observe that one is not giving satisfactory results in any particular case, we consider the use of the other.

Health for the Future

(Continued from page 7)

program was broadened to include military hospitals and prisoner-of-war camps where men who have malaria are concentrated. This year the program has been extended to include the spraying with DDT of more than three hundred thousand houses in the certain endemic areas of the South.

The DDT spraying project represents a new effort, not only to fulfill the original purpose of the malaria-control program, but also to prevent an increase in civilian malaria rates as a result of returning malaria carriers among troops stationed overseas. According to the most conservative estimates of malaria experts, over a million troops will return to this country from foreign areas as malaria carriers.

Tuberculosis continues to hold its threat over our people. It is the first cause of death among persons between the ages of fifteen and twenty-five years, and is responsible for nearly half of all deaths of men and women twenty to forty-five years of age. Recognition of this disease as one of the nation's major enemies came in 1944 when Congress authorized a National Tuberculosis Control program and empowered the Public Health Service, in co-operation with State and Territorial health authorities, to seek out tuberculosis and rid the people of this scourge.

State by State, community by community, tuberculosis-control programs must provide four types of services: (1) case finding, (2) medical care and isolation, (3) aftercare and rehabilitation, (4) protection of the patient's family against economic distress. Nothing less than a full effort will suffice. The best minds in this country concur in the opinion that no responsible agency will reach its objectives of eradicating tuberculosis through halfway measures. Research and well-planned health education will supplement the four basic services, but all must be provided to accomplish our objective.

The progress we have made in the conquest of disease over the past twenty-five years has been supported by a continuing rise in the standard of living and by increasing education of the public. Our health education has been directed primarily to the individual. In the final analysis progress in national health depends upon the action of the individual citizen. Health officers and family physicians are powerful factors in raising health levels, but it is up to the individual to apply the knowledge he has gained and to use efficiently the available services if advances of medicine are to benefit him fully.

It is the responsibility of the nation as a whole to see that adequate resources for the application of knowledge are made

(Continued on page 40)

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.

An Imaginative Small Boy

"I am having a problem with my child that causes me great concern. He will be seven years of age soon. He gets only eight and one-half to nine hours of sleep and just will not sleep a bit more. I used to put him to bed for a nap in the daytime, but he would lie awake two hours and if he did happen to go to sleep, which was seldom, he would not go to sleep before nine or ten at night, and I always put him to bed promptly at eight o'clock.

"I do not give him a nap in the daytime, because I find that by not getting a day nap he goes right off to sleep when I put him to bed at eight, and sleeps longer hours. But he wakes up at five-thirty or six o'clock every morning and will not sleep a bit more. I am afraid he will form some bad habit by lying in bed awake until our getting-up time, which is seven-thirty or eight o'clock, so I have been getting up as soon as he awakens.

"I also have a little girl three and one-half years of age, who sleeps ten hours at night in addition to one or two hours during the day nap. I do not think I should put the boy to bed any later than eight o'clock, do you? If I did would it do him any harm? The question is: Do you think my boy gets enough sleep? If not, how can I get him to sleep more? He has had a physical checkup every year since he was born until eight months ago. The doctor has never found anything wrong with him. His tonsils and adenoids were removed when he was four years of age, but he has always been a mouth breather. He seems to be normal in every other way, except that he wiggles and continually moves; he talks all the time; he grits his teeth at night, and always has. I have had a specimen of the stool examined twice for worms, and he doesn't have them. He quickly catches on to his schoolwork.

"Problem No. 2 is this: I read many stories to him out of the "Little Friend," Bible stories, and "Uncle Arthur's Bedtime Stories." He never hears anything scary or exciting, nor does he hear any fairy tales. He hears nothing of the sort on the radio or from his playmates. He has never gone to a show. He plays with two boys of his own age about twice a month and is carefully watched, of course without knowing it. He plays with these children for one hour each time. Sometimes company comes in with two or three children. He is with other children at Sabbath school on Sabbath. These are the only times he is with children except for his own sister, and he is quite satisfied playing with her. We are vegetarians. He has never eaten meat or drunk coffee or tea. His appetite is excellent. He takes cod-liver oil once a day. He takes brewers' yeast tablets—three to four with each meal.

"He has fallen into the habit of whispering stories to himself in the daytime when trying to nap and at night when I put him to bed. This particular night when I put him to bed, he asked me if he might tell a story to himself. He makes them up. In the morning I awoke to hear him whispering as usual, and when I asked him what he was doing, he said, 'I am telling myself a story.' I asked him to tell it to me. He said he thought I would not like it. After some persuasion he said it was about another boy and himself in school, naked before all the children. This frightened me, for I did not know what many stories like that would lead to; so I asked him not to tell stories to himself any more. Then he wanted to know too if he might whisper a prayer. I told him Yes. For a few mornings he woke me up at five o'clock in the morning and asked if he might whisper a song. Every night he asks me if he may whisper a story before he goes to sleep.

"All through the day he will say, 'Mother, tell me a story, or let me make them up and whisper them.' Would you call his stories daydreaming? As his whispering is not always distinctly understood, I don't always know what kind of thoughts he has. He is very truthful and good, and minds me very well in every other way. I will appreciate any help you might give. We could not very well do without LIFE AND HEALTH *magazine."*

I am sympathetic with you in your problem; however, I believe you are asking a little too much of your child to insist on his going to bed so early when he cannot sleep through to the time when you and your husband are ready to get up. Since your program of work is such that you must go to bed late, the right thing to do is to adjust his program accordingly. The sensible thing for you to do is to put him to bed at nine or nine-thirty. Even then you may need to get up in the morning before you would like to, so that he will not need to lie awake so long alone. Some children do not need so much sleep as others.

It is important that the atmosphere of his home be free from anxiety and strain, especially in his presence. Your worrying about him may tend to make him nervous. So just be happy around him and do the best you can without letting him know that you are worried about him or what he does or does not do.

As to his whispering stories: he is evidently a very imaginative child and I think it is better for him to whisper his stories than simply to dream them. That way you have some idea of what he is saying, and then you can lead his thoughts in the right direction. So if I were you I would just let him whisper. In order to lead him to tell you his stories you can at times whisper some yourself and tell him yours. Children are very likely at times to imagine absurd situations, one of which would be to imagine what would happen if they should appear in public without clothes on. It is easy for a child's mind to wonder about wearing clothes and why, and to think how funny it would be if one should suddenly appear without clothes. This is an entirely innocent soliloquy. It is made otherwise only by an older person's attitude of shock when the child expresses himself.

I think you have a very fine little boy and that you are doing very well in training him. I am sure God will bless you in your efforts to be a good mother.

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"HE enjoys wealth most who needs it least. If thou wilt make a man happy add not unto his riches, but take away from his desires."

A SIMPLE AID TO LONGER LIFE USED FOR CENTURIES

How the daily use of Genuine Bulgarian Yogurt may add life to your years and years to your life

METCHNIKOFF
Scientific Father of Modern Yogurt

ADAM, they say, began life hungry. But Adam also began life with a hunger to *live long.* As a result, the quest for life goes on. Man marshals his arts and his sciences; his test tubes and his retorts; his X rays and his vitamins—and struggles anew to solve not only the riddle of life but the riddle of long life.

Yet, as so often happens, the answers are to be found on man's doorstep: the answers to longer-lasting youth, beauty, health. Track back 4000 years and you will find simple habits of primitive people that, in the light of modern nutrition, are a revelation. Take, for instance, the cultured milk-food we now call Yogurt.

As you turn the pages of the Old Testament, do you realize that a sour milk product similar to Yogurt was the dish offered by Abraham (Gen. 18:8); by Moses (Deut. 32:14) in the Biblical list of permitted foods; and hailed by pious Arabs as the "Milk of the Prophet"?

Down through the corridors of time, primitive people have used the milk of cows, sheep, buffaloes, to produce the food we know as Yogurt. True, it is known by different names in different countries; but essentially it is the same milk-food.

Home of Rosell Bacteriological Dairy Institute of Canada—where this Genuine Yogurt Culture was developed and perfected

Thus, Bulgarians call it Yogurt. Inhabitants of the Caucasus call it Matzoon. The Greeks call it Yaourty; the Italians, Oxy-Gala; the Russians, Varenetz; the Scandinavians, Taete-Filbunke; the Yugoslavs, Kisselo-Mleko. Surely any food so universal in its appeal must have something vitally necessary to humankind! Yogurt has! This was the important discovery made by the famous Russian biologist, Metchnikoff, who was a Nobel Prize winner and Director of the Pasteur Institute of Paris. He was greatly impressed by both the age and vigor of the people who lived in the Balkans and the Russian Caucasus. Many of them lived to be 100. Their average life-span was 87.

"What," asked Metchnikoff, "do these people eat?" Their everyday dish, he learned, was a special cultured food known as Yogurt. This contained vast amounts of lactic acids and special lactic organisms. After long research and ample clinical proof, Metchnikoff concluded that Yogurt was the best natural way to combat Man's Health Enemy No. 1: *excessive intestinal putrefaction.*

Metchnikoff's theory has stood the test of time. In fact, two great American scientists, Prof. Irving Fisher of Yale and Prof. Haven Emerson of Columbia University, say this in their recent book, *How to Live:* "It may be safely said that the great majority of leading clinicians agree with Metchnikoff that the micro-organisms inhabiting our bodies have set going there a poison factory which shortens our existence by secreting poisons which penetrate all our tissues, injure our most precious organs, our arteries, brain, liver, kidneys."

The problem all these years has been to get a *genuine* culture strain that would be uniform, potent, stable, because no *Yogurt* is better than the *Culture* from which it is made. This problem was solved at the Rosell Bacteriological Dairy Institute at the Trappist Monastery in Canada, a world-famous scientific institution. It is this Genuine Bulgarian Yogurt Culture we offer you—and for which we have the exclusive American rights.

The culture is produced by trained technicians in our own laboratory, pictured on this page. All you need, in addition to the Culture, is ordinary raw or pasteurized milk. You simply follow our ABC directions. Result? Perfect Bulgarian Yogurt made in your own home! Yogurt you and your whole family should eat every day—for better health and better living!

Laboratory of International Yogurt Company where Rosell Culture is produced for you by trained technicians

We are doing our best to supply leading health-food stores and drug-stores with our Yogurt Culture. If your dealer is not yet stocked, send us $1.80 and we will send you, postpaid, enough Culture to make your own Yogurt for a month. Use coupon below!

yogurt culture

International Yogurt Company (Dept. HP)
147 N. La Cienega Blvd., Beverly Hills, Calif.
(*Check one or both*)

☐ Attached is **$1.80** Send me enough Genuine Bulgarian Culture to make a full month's supply of Yogurt. Also include detailed instructions on how to make it at home.

☐ Send me free the interesting health-story of Yogurt.

Name .....

Street .....

City ..... State .....

By Veda S. Marsh, R.N.

THE SWIM

"MOTHER, how long before we can go in swimming?" asked John.

"Two hours," spoke up Joan, even before Mother could answer.

"I need some help putting these picnic lunch baskets back in the car," said Mother; "then let's go down on the sandy beach and lie down. We can have a story hour until time to go in. You see, your stomach needs the blood now to help digest your big picnic dinner. If you went in swimming now, you would exercise so hard the blood would have to come to your legs and you would be using up the energy really needed for digesting your food."

"But I want to go swimming," said John.

"I know you do, and how thankful you can be that you have strong arms and legs for swimming. Think of the many children who have been injured or crippled by the robot bombs. How they would enjoy being able to go in at all."

By this time the baskets had been put into the car and the Little Jays and Mother were almost at the beach, where Daddy was watching little Tommy. How Tommy did enjoy being in a swimming suit, and wading in the warm water of the lake. He liked to dig holes in the sand.

"Mother," said John, "I want you to watch me dive off the springboard. I am learning to do a backward dive. Do you know, Jack told me his doctor will not let him dive because he has trouble with his ear. When he was a little boy five years old, he had earache and his ear ran for a number of weeks. What do you suppose happened?"

Mother took her finger and in the sand drew what looked like a giant ear. She hollowed out a canal going downward from the ear. She built a little wall across the canal, a short distance from the large ear—the part we can see on others.

"This canal," said Mother, "represents the auditory canal. This hole you can see in my ear is the opening of this auditory canal. A short distance down a membrane like a drumhead reaches across this canal. That is the eardrum. This wall represents the eardrum."

"Now we will hollow out a little room behind the eardrum. In this are three tiny bones. The first one, which is fastened to the eardrum, is called a hammer. The one attached to the hammer is the anvil, because it looks like a blacksmith's anvil. The one attached to the anvil is the stirrup, because it looks like a stirrup on a saddle. It is also fastened to a thin membrane separating this middle ear from the inner ear, where the delicate auditory nerves are located."

"From the middle ear there is a tube like this going down to the throat. It is called the Eustachian tube. If a person has a broken or ruptured eardrum, as Jack must have, he is not allowed to go swimming, or especially diving, because the water has many germs in it."

"When the drum is broken, this water with germs in it can be forced into the middle ear, with the force of the dive. It may cause an infection which could get into the mastoid cells. Many boys have to be operated on when these germs get into the mastoid cells behind the ear."

"Another thing one needs to consider is this: See how the Eustachian tube goes down here to the throat. Some boys, when they think water is in their ears, hold their nose and blow hard. That does not remove the water from the ear, but it is very liable to force germs up this Eustachian tube from the nose and throat to the middle ear. Then infection can start and mastoid trouble develop."

"There are many people who are hard of hearing or deaf because of carelessness of this type."

"Mother, Betty said her mother had a fly crawl in her ear one night," said Joan. "It was dreadful to feel that fly crawling around and not be able to get it out. The buzzing of the fly sounded very loud, almost like an airplane roaring along when flying low down. Her Daddy started to get some oil to put in, but that would have smashed the fly so no one could get it out. Betty's mother told them to get the flashlight quickly.

"Betty ran to get it as quickly as she could. Her Daddy pulled up on her mother's ear and held the flashlight to the ear. Out crawled Mr. Fly. He was as anxious to get out as they were to get him out. Wouldn't that be a dreadful feeling, to have a fly in your ear? It makes me squirm to think about it."

"Mother," said John plaintively.

"Yes, John, it is time now. You may go swimming," for Mother could guess what he was going to ask.

Splash!!! Splash!!! Almost before Mother had finished the sentence John and Joan were in the lake, and what a good time they did have swimming.

Suggestions to Teachers

1. Study a chart of the ear with the children, pointing out the external ear, auditory canal, eardrum, middle ear with three little bones, and Eustachian tube, inner ear with auditory nerve, and mastoid cells.
2. Make a list of possible injuries to the ear and have the children suggest possible causes and how they might have been prevented.
3. Test hearing of the pupils first with tape measure and a watch, then by means of the human voice. Covering your mouth and lower face whisper something and see whether each one can hear your directions from the same distance. Directions might be given, as: Shut the door. Open the door. Bring me a piece of chalk. Some children are such good lip readers that it is difficult to determine how deaf they really are. Some are sensitive to the metallic tick of a watch but are quite deaf to the sounds of the human voice.
4. Especially impress the children with the importance of keeping foreign substances out of the ear, as sticks, pencils, etc.
5. If there is a school for the hard of hearing near by, it would be of interest to have a demonstration of the way they talk to one another.

Junior Life & Health League

Rules for the School Year 1944-45

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 or dried), whole-wheat or enriched bread, and nothing between meals.
6. I play or work out of doors six days a week when weather permits.
7. I try to be courteous and cheerful at all times, and do one good deed for someone each day.

Pledge

I have read the rules of the Junior Life and Health League, and have been observing them for two weeks. I shall continue to observe them, and will read the Boys and Girls' page each month. Please enroll me as a member of the Junior Life and Health League for the school year 1944-45. I understand I am to receive a beautifully engraved membership card.

Directions

Copy the above pledge in your own handwriting and sign your name (very plainly). 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.

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"WE need plenty of good fresh air, an abundance of clean, pure water, wide areas of free space in which to roam and exercise. We need properly balanced rations, well prepared. Yet if we gluttonize with the best food, we must expect anything but good health."

Loma Linda Proteena makes the most delicious, *satisfying* loaf. Mix thoroughly ½ cup diced Proteena with 2 well beaten eggs, add 1 cup milk and season with ⅛ tsp. garlic, 2 tsp. oil, 1 tsp. salt, 1 tsp. grated onion, 1 tsp. Soy Sauce or Savorex. Add ½ cup of crumbled Ruskets and fold in 1 cup chopped parsley. Turn into buttered baking dish, bake in moderate oven (325° F.) for 45 minutes and serve with tartar sauce.

You'll be amazed at the delicacy of this fine-textured, *new tasting*, meat alternate. Full of rich nourishment of choice cereal and vegetable ingredients . . . all perfectly blended and seasoned to a turn! Send for recipes, you'll find many ways to use Proteena and other Loma Linda vegemeats.

AT HEALTH AND QUALITY FOOD STORES

Loma Linda Food Company

ARLINGTON CALIFORNIA

Health for the Future

(Continued from page 35)

available to all the people. The health needs of individual citizens have been emphasized by the war. Thirty-six per cent of the men examined for military duty have been rejected as unfit. The causes of rejection include such preventable or curable conditions as syphilis, hernia, and the residuals of many infectious diseases. If we had really worked at the task of prevention and cure during the past twenty-five years, there is no doubt that the rejection rates would have been much lower.

The creation of a vast Army and Navy has drawn upon our health and medical man power. Doctors, nurses, dentists, and other professional personnel have gone to war. As we see the shortages mounting we realize that we never had enough trained people, equitably distributed, to do the job of keeping us healthy. Communities all over the country have learned how ill prepared they were in the essentials of healthful living. Hospitals, health services, public water supplies, and facilities for the disposal of sewage have been on the urgent list since the first months of the war emergency. The movement of millions of war workers and troops into different parts of the country have only intensified the needs. The shortages were there even before the nation began to mobilize.

The most critical needs have been met by the adoption of emergency measures. After the war the task will be to reorganize our resources into a permanent structure which will make available complete health and medical services to all the people.

For the past two years the Public Health Service has been assembling information on the postwar health needs of the nation. As a result of our studies it is possible to chart broad objectives. These include for first attention: (1) a hospital system for the provision of complete medical service for every citizen, (2) expanded public health services in every part of the country, (3) adequate water supplies and other sanitary facilities, (4) medical care for all, (5) adequate medical research, and (6) the training of health and medical personnel in adequate numbers.

The United States has developed a pattern of Federal-State-local co-operation in public health, which can be applied to an expanded program of services and facilities. This nation possesses the potential resources with which to ensure to every citizen the maximum benefit from all that the lifesaving sciences have to offer.

Only by considering the needs of the individual, the local community, and the State can we arrive at a program adequate in scope and extent for all our people.

Discoveries in Nutrition

(Continued from page 11)

foods. Examples of these are the fortification of oleomargarine with the fat-soluble vitamin A, the addition of iodine to table salt for the prevention of simple goiter, and the addition of vitamin D to milk. In these cases nutritional values were improved with the consumer scarcely aware of the fact.

As the chemical methods for vitamin determinations became simplified and adapted to food analysis, extensive studies were made of all types of foods for their vitamin as well as mineral and other nutritional values. Practically every kind of food has been analyzed, and tables listing their composition are available. Each class of the commonly eaten foods, such as the green leafy vegetables, the citrus fruits, the grain products, and the meats, has been found to have its particular nutritional virtues. The measure of a person's diet can rather readily be made by finding out what and how much he eats of the different kinds of foods. This has been done in several instances on an extensive scale, use being made of the tables of food value. The results have invariably shown that the people of this country do not get as much of all nutritional essentials as they need, judged by the National Research Council's yardstick of recommended dietary allowances.

Although the progress made in vitamin research has probably been the most spectacular aspect of nutritional progress and has held the center of the stage for interest, there have been numerous other developments of far-reaching importance during the past several decades. The need for protein in the diet has long been recognized, but it has taken many years to complete our understanding of the nature of various proteins and to learn their full significance in nutrition. This has been accomplished through feeding tests and studies on the amino acid composition of protein substances. These substances are the building blocks of all protein.

The value of a protein to the body can now be appraised through knowledge of its amino acid make-up. Proteins which supply all the amino acids are considered the more desirable, but those which may be deficient or lacking in some of the amino acids are really none the less valuable, because when taken in a mixed diet of such protein-containing foods as milk, cheese, meat, eggs, and cereals, one type fills in the deficiencies of the other. In other words, they supplement one another in providing for all needs of the body.

During the last few years an even greater appreciation of the importance of proper protein nutrition has been gained. The lack of appropriate quantities of this food substance has long been known to

cause poor health, and now we are finding out why. Adequate protein is needed to prevent anemia and infection, and to provide for proper healing of wounds. In the treatment of many ailments protein is now used much like a medicine.

The importance of mineral metabolism has often been overlooked. During the past half century under consideration there have been several important contributions made in this field. One of the earliest of these demonstrated the particular significance of small amounts of iodine in the functioning of the thyroid gland. It was shown that in its absence the thyroid became enlarged and often functioned improperly. In most parts of the world there is sufficient iodine in the soil and water to meet the needs of the body, but in certain localities iodine is deficient. In these areas goiter was found to be very common. When the relationship between lack of iodine and goiter was recognized and steps were taken to provide adequate amounts of this mineral through its addition to the water supplies or through the use of iodized salt, one of the milestones in public-health measures for preventive medicine was passed.

At the present time we are entering another era of development in nutritional prevention that may prove important. This has to do with the effect of the proper amounts of an element known as fluorine upon the teeth in preventing tooth decay. There have been many interesting observations made over the past few years on the relationship between the quantity of fluorine taken into the body, the fluorine content of the teeth, and the resistance of the teeth to decay. Experimental tests are now being made to determine suitable ways in which to use this knowledge for public benefit. If successful this discovery bids fair to be a great boon to mankind in the prevention of tooth decay, the most extensive affliction of the civilized world.

It is all very true that we have built up a fund of knowledge concerning the nutritional needs of the body and how to supply these needs, such as was scarcely dreamed of sixty years ago. Many of the mysteries of disease have been traced to improper diets. Such conditions need no longer exist. But if this is to be so the application of the information now at hand must go further than the treatment of isolated diseases. It must become common everyday knowledge. The facts of nutrition are the facts of life, for nutrition maintains life, and good nutrition adds to the joy of living.

One of the benefits that has resulted from the present war is the fact that it has focused attention on problems of food and nutrition. The numerous shortages of food have made the housewife very food-conscious. She has been forced to substitute in her food selection and has therefore become interested in the quantities of foods. She has found it necessary to stretch the foods available to get the most out of them; she has had to do without others previously considered indispensable.

Thanks are due in large part for the better understanding of nutritional problems to the many individuals, groups, and agencies that have brought the newer knowledge of nutrition to the attention of everyone. Talks, demonstrations, posters, slogans, and magazine articles have helped us keep up with the nutrition parade. The work of these crusaders in translating the language and findings of the scientist into terms of everyday usage has contributed greatly to the progress of nutrition.

It is unfortunate that there are still some people who have little knowledge of the simple facts of nutrition. Too often they feel that they have come along fairly well thus far, so why worry now about what to eat. A real incentive must be given to such people. They must be shown how they personally can benefit from following the rules of nutrition. There have been a number of demonstrations to show what may be expected from a better diet. Professor Sherman has shown by experiments how the white rat can be made to improve in stature, vigor, fertility, and span of life, and thus

produce in the course of years a superior race of rats. It is quite possible that continuing improvements in our diet could do the same for man. Closer to home and of more immediate interest to us should be the belief of many nutritionists that improper food habits are at the root of a goodly number of the common ills with which we are plagued.

This does not mean that to enjoy the benefits of vibrant health we must become fanatics on the subject of proper foods or follow a strict regimen of diet and must surely take the "daily" vitamin capsule. Nor on the other hand is it any longer justifiable to follow the whims and fancies of fickle appetites or years-old tradition in the matter of food selection. Instead, a middle course should be followed in which thought and attention are given to the selection of foods to ensure the inclusion of adequate amounts of at least one of each of the "basic 7" foods in every day's diet. With no more than this and adherence to the simple rules of cooking in a minimum amount of water and time, and serving with minimum delay, one can be assured of a fully adequate diet.

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Physical Medicine Comes of Age

(Continued from page 21)

and although he realized that voluntary muscle contractions could not be replaced by electrically stimulated ones, he did show that the muscles did not waste away so rapidly nor was the circulation so sluggish. His outstanding work has led to his being designated the founder of modern electrotherapeutics.

It is interesting to note that the first hospital physical therapy department ever organized was the electrical department at Guy's Hospital in London under Dr. Golding Bird in 1840. This new field of electrophysiology, using faradic and galvanic currents in the stimulation of muscles and nerves, made rapid strides on the Continent. In this country the late John Harvey Kellogg, of Battle Creek, Michigan, described in 1888 the use of sinusoidal current for muscle stimulation.

Diathermy

When it became known that high-frequency currents could be used in heating up deep tissues of the body, still another method of treating disease was found.

The story of one of the early experiments of D'Arsonval is given in Krusen's textbook of *Physical Medicine:* "It was in 1892 that D'Arsonval showed that he could pass through himself and an assistant a high-frequency current which was of sufficient intensity to illuminate an electric light bulb. Despite this relatively large volume and intensity of current, the only sensation which either man felt was one of moderate heat."

Not until 1908 was the name "diathermy" given to these high-frequency currents which, unlike other electrical currents, passed directly through the body without producing shock or severe burns. The old-style diathermy machines soon gave way to the newer and still higher, or ultra-short-wave, diathermy machines, perfected by Schliephake (1929) in Germany. These machines have now reached such a point of perfection that they are used in elevating the temperature of the body in fever-therapy cabinets in the fight against syphilis, gonorrhea, and arthritis.

One of the latest developments in medicine is the use of electric shock in treating mental diseases; this returns us again to the use of the faradic coil, the point from which modern electrotherapy began.

Hydrotherapy

In the year 1854 Joel Shew, a New England physician, after visiting Vincenz Priessnitz, in Austrian Silesia, published his impressions of that Silesian peasant and his use of water in treating disease in a volume entitled *The Water-Cure Manual: A Popular Work.*

The reputation of Priessnitz (1801-51) had spread and was indeed world wide. Although only a layman, his skillful application of water by packs, sprays, and baths in the treatment of disease, drew patients and physicians alike from all over the globe.

The Austrian Government set apart a group of scientists and physicians to investigate his establishment and his claims. Priessnitz, however, much to his credit, made no rash claims, and when the commission completed their investigation, they gave him perfect liberty to continue his work, and they urged physicians to come and observe and use his methods of water cure. Dr. Shew was one of those who came to observe and study. He went away convinced, and thereupon wrote his manual. It remained, however, for Wilhelm Winternitz (1855-1917), of Vienna, to establish hydrotherapy on a sound scientific basis. In America several names stand out for their contribution to hydrotherapy.

Ernest Brand in 1861 demonstrated the effectiveness of cold baths in the treatment of typhoid fever. Dr. Simon Baruch, pupil of Wilhelm Winternitz and father of the famous Honorable Bernard M. Baruch, was one of the most energetic champions of hydrotherapy in this country. His textbook *The Principles and Practice of Hydrotherapy for Students and Practitioners of Medicine* (1897), along with the textbook by the late Dr. John Harvey Kellogg, *Rational Hydrotherapy* (1901), pioneered the way in this most versatile field of physical medicine, hydrotherapy.

A truly great impetus to hydrotherapy

has been the spectacular work of the Australian "bush" nurse, Sister Elizabeth Kenny. The hot packs, or "foments," as she called them, have lessened the extreme pain of many a child suffering from the acute ravages of the dread disease poliomyelitis (infantile paralysis).

Her work has been acclaimed one of the most outstanding in physical medicine in the last quarter of a century. It has been accepted by the American Medical Association, and although a controversy exists as to her explanation of symptoms, no one can deny that the use of hydrotherapy in the form of hot moist packs has cut down the crippling results often seen in poliomyelitis.

Thermotherapy

The employment of high temperatures to combat and treat disease should be mentioned before leaving the discussion of hydrotherapy. At one time physicians battled against fevers, doing all they could to keep them down, but now it is known that fever is often an effort of nature to rouse the white blood cells and antibodies in the blood stream to fight disease. Instead of stopping a fever, by the use of steam cabinets we may elevate the temperature still higher in order to hasten the production of protective substances for the blood and to rid the body of the germs responsible for the sickness. The use of hot baths among the ancients, with elaborate pools and dressing rooms, is common knowledge.

But only since 1918 has the use of artificial fever been placed on a sound and safe basis. The two pictures on fever therapy graphically show the advance in this type of physical medicine. Figure II shows how "The Spanish Affliction," or syphilis, was treated in the seventeenth century. Figure III is a modern, up-to-date fever-therapy cabinet, in which the temperature of the body may easily be elevated to 105-106° F. It can be maintained at this level for five or more hours without the hazards one would expect from the crude barrel depicted in the first picture. This type of treatment is now combined with specific medicines in the one-day treatment of syphilis. It is also found to be a valuable adjunct in certain types of arthritis, skin diseases, and eye infections.

Mechanotherapy—Massage and Exercise

"And this is our Zander room." Such might have been your introduction to one of the rooms of the up-to-date hospital of fifty years ago. It might have looked for all the world like a Rube Goldberg machine that had come to life. Dr. Jonas G. W. Zander in 1857 planned a series of mechanical devices which would exercise practically every segment of the body. This was an attempt to carry to a still higher stage of advancement the corrective exercises which had been started by Per Henrik Ling (1776-1839), of Sweden, the founder of the Swedish Institute of Massage and Corrective Exercise.

Although Zander rooms are no longer found in our hospitals, it having been demonstrated that active or free exercises are of more benefit to the patient than the movements some machine might give him, these rooms actually were the forerunners of our modern physical therapy units, where patients are given corrective exercises. Posture training, muscle re-education of paralyzed limbs, learning to walk again, limbering up stiff shoulders and knees, and gait training are only a few of the things one would see occurring in the corrective gymnasium.

Massage in this country had among its contributors Douglas Graham, Weir Mitchell, and John Harvey Kellogg. Mitchell said of massage: "I willingly give it a chapter of careful detail, because as yet it is little understood in America. . . . I very soon found that I had in it an agent little understood and of singular utility."

We have spoken about Per Henrik Ling, the founder of Swedish massage. He would probably recognize in special massage for muscular rheumatism one of the movements that was taught in the old Swedish massage. But he would probably be more than surprised to learn that the principles of digital kneading are being

applied as a new method of restoring function to lifeless limbs. This is called neurotripsy, or nerve crushing. While the patient is under an anesthetic, the muscles and nerves are kneaded vigorously, and as a result new nerve fibers grow into the partially paralyzed muscles, giving them new life.

So we add still another new treatment to the rapidly growing list of physical measures physicians can use in combating disease. We cannot hope to mention them all, but these few may help you to realize how rapidly this field of medicine is growing.

The Future

And now, what is the future of physical medicine? This was aptly set forth by Dr. Frank Krusen, head of the section on physical medicine of the Mayo Clinic, when in June of last year he addressed the Ninety-fourth Annual Session of the American Medical Association on just this very topic, "The Future of Physical Medicine." His opening remarks came directly to the point: "At last the long-delayed development of physical medicine seems at hand." That this is true, there can be no doubt.

One reason for this is the tremendous interest created in physical medicine by the part it is playing in rehabilitating the wounded men who are returning from the battle front. Dr. Frank Ober, of the Harvard Medical School, recently stated, "The last war established orthopedic surgery as a recognized specialty. This war will do the same for physical medicine." It is estimated that there will be twenty million people who will require rehabilitation when this war is over, and physical medicine will be essential in helping them to adjust themselves to their new station in life.

Certainly one of the outstanding factors for the new enthusiasm shown for physical medicine has been the generous offer of $1,100,000 by Mr. Bernard M. Baruch to assist this field of medicine to which his own father, Dr. Simon Baruch, devoted his life.

A committee headed by Dr. Ray Lyman Wilbur, of Stanford University, reported as the needs of physical medicine: better teaching programs in medical schools, the training of teachers and research workers in the field of physical medicine, the stimulation of basic research, and a co-ordinated effort in rehabilitation which will include the use of all physical agents and occupational therapy. It was to activate this program that the Baruch Committee on Physical Medicine was established and financed by Mr. Baruch.

Another great organization has stepped in to assist this growing specialty, namely, The National Foundation for Infantile Paralysis. During the latter part of 1943 the sponsors of The March of Dimes set aside a grant of $150,000 to be used in furthering the teaching and research in physical medicine.

In September of last year the American Congress of Physical Therapy convened at Cleveland, Ohio. The leaders in the field of physical medicine, sensing the enlarging significance of their work, made bold to change the name of that organization to The American Congress of Physical Medicine. Acceptance by the medical profession throughout the country is evidence of the changing attitude of medical science to the "infant" of medicine.

With the interest in physical medicine running at a new high, and with the promised financial help to carry forward a program on a sound and scholarly basis, the passing of sixty years finds the neglected and sometimes despised physical therapy emerging as the young and vigorous field of physical medicine. It now enters a new phase of unprecedented possibilities, for physical medicine has come of age.

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Frauds, Quacks, and Your Health

(Continued from page 19)

because of such fraudulent practices he was not discouraged, and had the temerity to suggest concoctions for correction of obesity and even of baldness, merely by changing the name of his concern.

It is striking to observe how frequently the promoters of frauds have had no medical training. Thus practically every walk of life has been represented in the field of quackery. For example, a bartender was denied the use of the mails upon fraud orders issued by the Post Office Department because he put out a simple chemical mixture representing "that it would restore all users to a state of normal, youthful vigor and vitality." What a bartender knows about this problem should be apparent to all except those who deliberately shut their eyes to such scheming.

There has been considerable change in the practices of quackery. For example, the following features have largely disappeared from public advertising: cancer cures, "consumption" cures, deafness cures, and epilepsy cures. In the early part of the century it was very common to speak of a "cure" in advertising. Now, however, because of the activities of the Food and Drug Administration and the Federal Trade Commission, the advertising stresses relief and aid, which has just about the same effect to the average reader unless careful thought is given to the emphasis placed in the advertisement.

Much money goes into the advertising of proprietary medicines in newspapers and obviously the promoters are going to phrase the advertising in such a way that the product will sell. Some years ago one nostrum maker frankly admitted that "fully seventy-five per cent of all cough and kidney remedies are bought by people who think they have consumption or some serious kidney ailment, . . . and not by people who actually have them." Years ago the advertiser was usually content to notify the public that he was in a position to supply certain of its demands. Now he does more than aim to

supply a demand—he actually creates a demand. As one health educator so aptly put it, "Twentieth century advertising may be said to be the art of awakening the public to a demand for things which otherwise it might not even know about, and for which certainly it has no craving."

Frequently we hear the term "patent medicine." Correctly speaking, there are no true "patent medicines" on the market, because few if any of the products of this type could be patented. Before the advent of the new Food, Drug, and Cosmetic Act the promoter of such preparations did not obtain patents, because he would have had to declare the nature of the ingredients, and mystery and secrecy were his greatest assets. A product to be patentable must, according to law, represent something new and useful, a requirement which also rules out the "patent medicine." Further, after seventeen years the legal monopoly may disappear and the product then becomes public property. It was easier then for the "patent medicine" seller to put together a simple mixture of drugs that represented nothing either new or useful to which he gave a fancy name and obtained a trade-mark on that name. The trade-mark gave him practically a perpetual monopoly to the name.

If the general population would insist on the following points in connection with every device or drug which it is urged to use, there would be less quackery: These products should be useful; they should not be harmful or contain habit-forming or dangerous drugs; they should not be recommended for diseases that are too serious for self-treatment; they should be nonsecret, because the public has a right to know what it is taking; and they should not be advertised under false claims or in such a way as to make the public magnify trivial ailments and treat itself unnecessarily.

Whenever a new discovery in science appears, some promoter or quack immediately attempts to capitalize on the discovery. The records of the American Medical Association contain the names and the literature of some 300,000 "patent medicines" and nostrums which from time to time have been used by quacks and charlatans to exploit the American people. When the war is over there may be renewed activity in the field of quackery, because restrictions on supplies will be lifted. Furthermore, some of those who return to these shores may bring with them ideas concerning practices which would be declared fraudulent in this country but have been well received elsewhere.

It takes time for the courts to accumulate evidence and expose these practices. The public itself can provide much protection against quackery by refusing to become customers of quacks. No one should expect to secure health in some sudden or mysterious way. On the contrary, good health is the result of many very important factors, such as good sanitation, good nutrition, immunization, and rest. Recovery from sickness involves careful diagnosis and treatment on the part of physicians, good nursing care, and a period of time; no one with a severe illness will be cured and made completely well overnight.

There are very effective drugs, such as the sulfonamides and penicillin, which will produce, compared to what could be done forty years ago, "miracles" in the treatment of disease, but the use of even these agents represents only one part of the treatment. Rest, diet, and correction of other contributing illnesses are necessary if the sufferers are to recover as soon as possible and be completely cured. Those who expect to replace successfully good medical care with some "miraculous cure" offered by a quack, hope for the impossible; if there were such cures physicians would be the first to use them.

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The Healing of the Mind

(*Continued from page 17*)

of importance and usefulness by the gift of more than a million dollars by the Honorable Bernard Baruch in memory of his father, a physician who was an authority on physical medicine. No mental hospital today is considered well equipped without facilities which have long been identified with the Battle Creek Sanitarium and similar medical institutions all over the world.

These sixty years have been momentous ones in the history of mental illness. Great advances in the understanding of the mentally ill patient are now being succeeded by tremendous changes in methods of treatment. Those formerly thought to be incurable are no longer beyond the hope of treatment; the prolonged depressions are relieved in a matter of weeks instead of months or years; human suffering has been almost miraculously reduced, much of it within the past ten years. Tomorrow holds promise of even greater discoveries in the field of psychiatry, or mental medicine.

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Have You Tried—

Bakon-Yeast mixed with margarine and spread on crackers or bread?

Bakon-Yeast sprinkled on your breakfast cereal? Many prefer its flavor to that of a sweet on cereal.

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FORTUNE may find a pot, but your own industry must make it boil.—ROUSSEAU.

Safety for Civilians

(*Continued from page 29*)

Management, once its attention was forcefully called to the importance of safety, made some astounding discoveries. It learned that a program of safety in a factory or on a railroad was not a negative, "take-it-easy," timorous sort of business. Safety had to be built into the factory, planned into operations, maintained aggressively. When this was done, even the somewhat reluctant management discovered that it had furthered efficiency as well as safety.

Safety engineers, for example, shouted long and loud for better lighting, better ventilation, guards on machines, elimination of hazardous belt power drives, rearrangment of work to eliminate handling of materials (for in the handling of objects is the largest single type of industrial accidents). They called for adequate first-aid equipment and attendants. They waxed eloquent on the necessity of good housekeeping in the plant to eliminate both fires and falls. And so on down an endless list.

Let me review that list as the industrial leaders reviewed it in the early days of organized safety. Good lighting prevented accidents, yes, but the same light that revealed hazards also gave the worker a better view of his work and speeded production. Ventilation reduced fatigue, and fatigue is a destroyer of efficiency as well as of safety. Workers on guarded machines moved more swiftly and surely than those whose working hours were filled with constant dread of lost fingers. Belt drives—no sane industrialist would discard the individual electric motor at the machine itself for the cumbersome and inefficient central power systems of the old days. A whole science of time and motion studies has grown up to eliminate handling of material in the interests of speedier production, quite apart from safety considerations. First-aid setups cut down precious hours of labor lost while a slightly injured man waited hours for a doctor to come around—and half a dozen of his shopmates probably were waiting with him in well-meant but futile attendance.

While industry was organizing its campaign to prevent accidents, a new threat appeared. Peaceful streets and country roads trembled under the rubber-tired wheels of horseless carriages.

Editorial writers were "viewing with alarm" a terrible motor-vehicle death toll of 4,200 in the United States in the year the National Safety Council was organized. Civic organizations shuddered as reports piled in to show that 150,000 people were injured in motor-vehicle accidents that year.

Within ten years the toll of dead and injured per year had *quadrupled*. But this rise was only a start. Streamlined slaughter was still to come, and 1941 brought the all-time high, 40,000 Americans died and 1,400,000 were injured in motor-vehicle accidents. Since the turn of the century more than three quarters of a million—769,000—Americans have been killed in such accidents.

In spite of this new source of accidents, you are less likely to die in an accident than was your grandfather or your father. The soaring auto deaths were balanced by the reduction in frequency of other types of accidents. The organized drive for safety has saved the lives of more than 300,000 people who would have been killed since 1913 if the 1913 accident death rate had continued. So great has been the improvement that *fewer* lives were lost in nonmotor-vehicle accidents last year than in 1913, in spite of the great increase in population and in man-hours worked in industry.

Today organized safety is a battle waged on many fronts. The organizations, the skills, the knowledge, and the financial resources with which industry has supplied the safety movement are being brought to bear on nonindustrial problems. The engineers have been joined by police and fire officials, by the leaders of civic and farm groups, by educators and leaders of youth organizations. In the National Safety Council are more than twenty different industrial sections, special sections for commercial vehicles, traffic and transit, a farm division, a home division, a school and college division, and a women's division. In many cities there are local safety councils. Each actively campaigns in its own special field, promoting interest, assisting in the solution of technical problems, conducting educational work, and so on.

The existence of the industrial and the vehicular sections of the National Safety Council probably causes no surprise, but it may seem strange to many people to speak of special campaigns and technical services in such special fields as farm, home, and school.

Here are the reasons, and they are unpleasant ones:

FARM.—Farming is a much more dangerous occupation than the average of all industry. Sixteen per cent of American workers were in agriculture in 1943. Twenty-five per cent of the fatal occupational accidents occurred in agriculture. Incomplete studies indicate that machinery and livestock are the greatest causes of farm-work accidents, with falls running third. But farm-work accidents are only about one fourth of all the fatal accidents to members of farm households. Most of these accidents occur in homes, on highways, or in other public places.

HOME.—Home can be a deadly, dangerous place, especially for grandfather and for baby. About one third of all fatal accidents occur in homes—far more than from all occupations, and currently far more than are charged to motor vehicles. Half these home deaths result from falls—and the great majority of the victims of falls are people sixty-five years of age and over. In 1943, 6,200 Americans died of burns in homes—and the majority of these were babies under five or elderly people over sixty-four. A third of all the victims of poisons (except gas) were babies under five. Almost all the victims of mechanical suffocation are infants (most of them smothered by bedclothes).

SCHOOL.—Among school-age children—ages five through fourteen—one out of every three deaths results from an accident. Of nonfatal student accidents more than half occur in school, on the school grounds, or on the way to or from school.

Almost all these accidents are the result of human action. They are not, however, the result of simple carelessness of a moment. They, like industrial accidents, are caused—and the cause usually lies far behind the actual accident. The careless handling of a "good" bull is the farmer's equivalent of smoking while handling explosives. The improperly designed wringer is the housewife's equivalent of an unguarded punch press. The improper supervision of gymnasium activities and equipment is the school principal's equivalent of poor foremanship in industry.

There is a place in the safety movement for every American. Few of these places involve spectacular activities. But the child who learns that "the curb's the limit," the driver who learns that alcohol and gasoline form an explosive mixture, and the housewife who avoids home dry cleaning with naphtha, each is contributing to his own safety and the safety of his fellows. Safe living is one of the important aspects of good living.

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Using a Toothbrush

(*Continued from page 24*)

upper and lower teeth, the brush is brought from the molar region to the central teeth; then the circle is reversed, and the brush is carried to the molar region again. This is repeated on the opposite side of the mouth.

In brushing the teeth it is not uncommon for people to spend much effort on the outer surfaces and just skim over the inner. It is a little more difficult to clean the inner surfaces properly, but it can be efficiently done with a small, long-bristled brush.

The brush should be inserted in the mouth in the same manner as for the outer surfaces, that is, with the bristles pointed upward. The handle of the brush must be in close contact with the central front teeth, in order that the head of the brush may be kept in a position

Life and Health—A Historical Note

LIFE AND HEALTH was born in California in [June] 1885, and named the *Pacific Health Journal and Temperance Advocate*. The editorial in the first issue contained this statement of policy: "It will be our aim to make this a useful family journal; useful in health, useful in sickness, useful in every household, and useful in every department. Rules for the preservation of health are of first importance, and will receive due attention."

From 1885 to 1888 the journal was published as a bimonthly, and from then on as a monthly. The page size from 1885 to 1896 was 7½ by 10½ inches. From 1897 to 1904 the page size was approximately 6½ by 9½ inches. The number of pages per issue ranged from 32 in the early years, to 16 in the late 1890's and back to 32 in the early 1900's.

In 1904 the journal was transferred to Washington, D.C. From an editorial note in the June, 1904, issue, the last published in the West, we quote: "For some time past it has been thought that the sphere of usefulness of the *Pacific Health Journal* would be greatly increased by changing its place of publication to an Eastern city. . . . The July number will be issued from Washington, under a new name, and probably in new dress. . . . It is the purpose of the new publishers to make the magazine a worthy exponent of the true principles of health and temperance reform."

The July, 1904, issue, published in Washington, D.C., as LIFE AND HEALTH, contains this editorial word: "The caterpillar settles down in some snug corner, spins a cacoon, and to all appearances is dead; but soon the cocoon bursts, and a new being emerges, different in appearance, different in name, yet it is the same caterpiller, transformed.

"The *Pacific Health Journal* has gone through a chrysalis transformation, and now as it emerges in a new locality, with a new name, to meet new friends, it is hoped it will still be recognized by old friends as the same old health journal.

"The size is materially increased, and while matter of a new nature . . . is added, it is not intended to lessen the amount of practical instruction in the prevention and treatment of disease."

The page size at that time and for years after was only 6½ by 9½ inches. However, by 1910 LIFE AND HEALTH was carrying 68 pages per issue. Three- and four-color covers were regularly used. Paper shortages in the first World War caused a reduction to 36 pages per issue. In 1921 the page size was enlarged to 7½ by 10½ inches. In April, 1923, a sharp reduction in subscription price was made for the announced purpose of widely increasing the circulation. In connection with this the journal was reduced to 20 pages per issue, and all three- and four-color covers were eliminated.

In 1934 the editorial offices of the journal were transferred from the Medical Department of the General Conference to the Review and Herald Publishing Association, which from then on to the present has assumed direct editorial control. At that time LIFE AND HEALTH changed to its present page size and format, increasing the number of pages per issue during the next several years from 24 to 40.

During the 1920's, and particularly following the price reduction in 1923, the circulation increased steadily until it stood at 80,000 in 1930. The early years of the depression decade saw the figures drop rapidly until the spring of 1934. Since then the curve has risen steadily, standing now at better than 160,000. Because of paper shortage, the printing order has been held for months at 165,000 per issue. If paper were available, approximately 200,000 copies would now be printed monthly to care for all subscription and single-copy business.

This, very briefly, is the story of LIFE AND HEALTH through the years. The significant fact that stands out in this sketch is that the journal not only has lived through the inevitable ups and downs of threescore years but enjoys today the best health in the whole of its long life. And the signs all point to increasing good health in the years that lie ahead.

What is more, instead of being a financial liability, as many educational journals are, LIFE AND HEALTH is today very safely on the right side of the ledger. From its profits of the past two years $25,000 has been set aside for grants-in-aid for research in the fields of nutrition and physical medicine. This, we believe, is a singularly fitting step for the National Health Journal to take on its sixtieth anniversary. Thus LIFE AND HEALTH dedicates itself more fully than ever to the task of discovering and promoting the principles of healthful living.

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parallel to the chewing surfaces of the teeth. With the bristle tension kept against the gums, the shimmying and sweeping motions are repeated in the same manner as described for the outer surfaces. This procedure is repeated in the molar and bicuspid region of both sides of each jaw.

Because of the curvature of the arches in the front part of the mouth, the inner surfaces of these teeth require a special technique for their proper cleansing. It is necessary to put the brush in the mouth pointing toward the throat, with the bristles turned up, until about one third the length of the brush is behind the biting edges of the teeth. The brush is then carried upward until its progress is stopped by the impact of the brush base. The handle of the brush is then carried down toward the chin, giving the necessary curvature to the bristles.

With a shimmying motion the bristles are dragged into the spaces between the teeth, and then the tooth surfaces are swept as the brush is drawn out of the mouth. This is repeated on all the inside surfaces of the front teeth, both upper and lower, except that in the lower the bristles are pointed downward and the handle of the brush is brought up toward the nose.

The circular motion on the inner surfaces is accomplished by holding the handle of the brush at an angle of about forty-five degrees to the perpendicular lines of the teeth. With the bristles directly against the teeth in one molar region, the brush is carried by wide circular motions completely around the arch to the opposite molar region. The circular motion is then reversed, and the brush is carried back to the starting point. The same procedure is then used on the inner surfaces of the lower teeth.

With the mouth almost closed, the brush, with the bristles toward the teeth, is carried behind the last molar teeth, cleansing these surfaces. The grinding surfaces of the back teeth are full of grooves and pits, and these are susceptible points for decay. Clean them thoroughly by a crisscross and rotary motion of the brush.

A thorough cleaning of the teeth should require about three minutes. It is a good plan at first to use a little sandglass such as is sold in most department stores for timing three-minute eggs. Two brushings daily are sufficient in most cases.

It is a wise plan to use dental floss between the teeth every night before retiring. Dental floss may be obtained at any drugstore. It should be inserted between the teeth with a slight sawing motion, care being taken not to let it snap down against the gums.

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Enriched Flour and Bread

(*Continued from page 25*)

producers, and Government officials alike with a common understanding about the kinds and quantities of enrichment materials that were required to be present in enriched flour.

The minimal and maximal amounts of iron and of each of the three B vitamins required to be present in a pound of enriched flour are shown in Figure 1. For purposes of comparison, average values for these same nutrients in one pound of unenriched flour are also shown in Figure 1. The reader may accept the thesis that we need to define the minimal quantities, and may be puzzled that there should be ceiling limits too. But the latter is just as important as the establishment of minimal quantities, for, if there were not both upper and lower limits, a wide variety of enriched flours could be offered to the public, which might result in confusion for the consumer and a problem out of hand for the producers. In other words, we need a clear-cut definition for enriched flour quite as much as we need standard measurements for such items as a size 16 collar or a size 9 stocking if we are to do our purchasing with confidence and intelligence.

Within definite limits, calcium and vitamin D *may* also be added to enriched flour, but these are not required ingredients. The addition of calcium to flour is largely confined to self-rising flours where it is a part of the leavening agent. Self-rising flours are widely used in the southern part of the United States in the making of biscuits. Vitamin D is seldom added to flour, but certain quantities can be carried by enriched flour if and where there is consumer demand for it.

The Federal standards for iron and the three B vitamins required to be present in enriched bread (see Figure 2) were established by order of the War Food Ad-

By William G. Wirth, Ph.D.

"WELL, as I figure it, life gave me a pretty good start," said Pete Russell, "and I'd be a fool if I didn't take good care of my body, mind, and spirit, the three things that go to make up life as far as I am concerned." No one could argue with Pete about this question, for his whole experience showed that he was getting the most out of the life that was his. Physically, he was in the "pink," just because he had sense enough to treat his body right. He never missed getting at least seven hours of sleep every night. That was part of his "discipline," as he expressed it, and he stuck to it. "A horse must get rest; you can't run him all the time; and I reckon if he needs his rest, so do I. Why, even my car needs a rest; and if a machine like that must have it, certainly my complicated human machine demands it."

That was rather homely philosophy, but he showed the good effects of it in super-abounding energy and reserve. No one knew when he was last sick, so well was he day in and day out. As for his eating, he was careful about that too. "If my furnace needs good coal, my body needs good food, and I aim to get it." His diet was wholesome. Nor did he overeat. "It never does to overload a furnace with coal; you don't get the best heat and power out of it if you do. That's just about the way it is with us. Why, I've seen some folks eat so much they just acted like stuffed puppies, barely able to walk around, but with no getup and bounce in them. Besides," he continued, "I've noticed my head is clearer when I don't overeat, and I can think better."

As for his mind, simple rancher though he was, he was keen and alert. While you wouldn't call him a student, it was surprising what a store of knowledge Pete possessed. He was an avid reader of good books and papers. "A man can't read everything, so it is only good sense to read that which will do your mind good and fill it with useful facts and ideas for sound living." He had no use for those who felt that reading was only for the "educated" and the "white-collar folks."

"Your mind's like your car," he used to say; "you've got to keep it running over the road if you expect to keep it snappy and full of pep. Just having it stick there in the garage with the same environment all the time won't keep it on the high level of efficiency. That is the way it is with your mind. To keep it lively, full of pep, full of spring, you must take it over the road of good reading, must keep it on the go by making it work, not let it go stale in the garage of its own nonliterary activity.

But it was really in the realm of the spirit that Pete Russell gave evidence that life had given him a pretty good start. "When I began to think at all," he used to say, "I realized that life was essentially a matter of being and doing right or wrong. I sensed that I was a moral, spiritual being; everything I did was, in the end, valued by whether it was right or wrong. And I further discovered that I could only find life satisfying and happy as I ranged myself on the good side and not on the bad."

The result was that Pete was a highly respected citizen. Everyone trusted him for his sterling character and integrity. He was one of the elders in the town church. Every Sabbath he was there with his family. He joined heartily in the singing of the hymns, listened attentively to the sermons by the preacher, and, more than that, put his religion into real practice by being good to the poor and needy of the community. Yes, Pete Russell with wholesome optimism felt life had given him a good start—and he meant to keep it up. He found it paid. He was of the stock that makes good Americans.

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ministration. Enriched bread carries the proportions of enrichment ingredients that would be contained in bread made with enriched flour. A pound of enriched bread carries smaller quantities of enrichment ingredients than a pound of enriched flour, because of liquids, fats, and other ingredients used in making bread. Enriched bread can be made either by using enriched flour or by adding the required amounts of enrichment ingredients to the bread doughs.

So far as scientists have been able to determine, the thiamine, riboflavin, and niacin added to white flour as enrichment ingredients have exactly the same nutritional value and effect as equal quantities of these same vitamins obtained from whole wheat or from other foods which contain these nutrients. The iron most commonly used as one of the ingredients of enriched flour and bread is generally reported to be more effectively utilizable by our bodies than an equal amount of iron provided by whole wheat.

The launching of enriched flour and bread in this country is a story of democracy at work in the interest of the common good. No person or organized group of persons can claim the credit for introducing enriched flour and bread to the American people; many persons in widely different professions and occupations *can claim* to have had a share in this co-operative effort to improve our national diet. This proves not only that democracy *can* work for the common interest of all but that it has worked when we needed very much to have it do so.

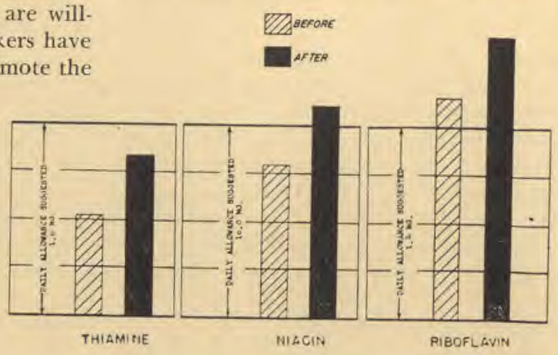
It should be strongly emphasized that the enrichment of white flour and bread is not and never was intended to discourage the use of whole-wheat flour and bread. Whole-wheat flour and bread are, as always, available on the markets in quantities as great as consumers are willing to purchase. Millers and bakers have spent large sums of money to promote the sale of whole-wheat flour and bread, and they still stand ready to provide all that the consumer will buy.

However, the American public has shown a decided preference for white flour and white bread, a preference which results in over ninety-seven per cent of the flour milled in this country being white flour and less than three per cent whole wheat. Since the American public refuses to eat whole-wheat bread and flour to any important extent, and shows an established preference for products made with white flour, the sensible way to extend nutritional benefits through use of flour and bread was quite logically to enrich the types of such products which already enjoyed wide consumer acceptance.

Although the enrichment program has been at work for us only a very short time, it is reasonable to inquire whether or not any visible improvement in the well-being of the American people is evident. Here is a statement made by Dr. Jolliffe, of the New York University College of Medicine, at a public hearing held by the War Food Administration on January 21, 1943:

"I attribute to bread enrichment a marked and unmistakable decrease in florid beriberi and florid pellagra in my wards at Bellevue Hospital [Municipal Hospital of New York City]. In 1938-39 little bread was enriched; in 1942-43 seventy-five per cent or more has been enriched in New York City. This has been accompanied by a decrease of three fourths in our cases of florid beriberi and of two thirds in florid pellagra."

According to evidence from numerous surveys and food-consumption records, a high percentage of the American people over the past fifteen to twenty years have consumed diets believed to be inadequate in various protective food values, including those food essentials represented by the vitamin and mineral additions to enriched flour and bread. The primary purpose in enriching white flour and bread is to distribute the nutrients provided by enrichment to American people generally and, particularly, among families with low and moderately low incomes, since their diets are most in need of nutritional improvement. A glance at the simple bar-diagram below will show the extent to which universal enrichment of the white flour and bread consumed in this country would increase the amounts of the vitamin enrichment ingredients in the average (per capita) American diet. The increases shown in this diagram are based on our normal prewar food-consumption pattern. The amount of iron carried by enriched flour and bread



By Amy Klose, R.N.

OFTEN the most difficult time to nurse a sick child is when he is convalescing. The acute stage of the disease has its worries, but at least the child is willing to lie quietly in bed, and needs very little entertainment. The period when he feels he would like to get up, yet is unable to do so, is the time when the mother's resources are taxed to the utmost.

Radio programs help the older children. If an individual radio set is provided at the bedside, the patient may be able to have the program of his choice. If he is able to read in bed, someone should glance through what is to be read to avoid unpleasant subjects. People who read to the sick should sit so the patient will not need to twist himself into uncomfortable positions to see the reader. If he reads for himself, be sure the light is free from glare.

A child will enjoy the simplest of diversions. No matter how serious the handicap, something can be found within the limited capacity of each invalid. Braiding strands of colored string can be experimented with until pretty designs are discovered. Artificial raffia made from crepe paper works up into many colorful designs. Manufacturers of crepe paper publish inexpensive or free manuals for making useful and decorative objects from crepe paper.

Homemade jigsaw puzzles cut from magazine pictures can be just as entertaining as those purchased in department stores. Color books and a box of crayons entertain children of nearly all ages. With blunt-end scissors and old magazines most children can entertain themselves endlessly by cutting out pictures. Even very small children like to cut half-moons, stars, and the like from folded paper. Anyone can learn how to make soldiers' hats, a boat, or a fish that opens its mouth. The patient may be diverted by watching and helping the mother cut out gay decorations from colored paper to decorate the room. Make soft toys of oilcloth, stuffed with cotton, or decorate boxes. Pattern companies have patterns for making stuffed animals. Most children cherish these toys more than expensive ones.

Window boxes and rapidly growing plants will help keep up the interest in a sickroom. A fish bowl partially filled with stone and a variety of moss can be made in a way to resemble a rock garden. The plants can be kept alive and growing. This miniature garden will interest the invalid a long time. Lily bulbs are available many months of the year. New crops of bulbs should be started at intervals. Quiet movement like that of a goldfish swimming in a bowl on a window sill gives added pleasure, especially to children.

Children get a world of pleasure out of finger painting. If a small amount of very thin flour paste is colored with show-card water paint and placed on a sheet of smooth, nonabsorbent paper, all sorts of designs can be painted with the finger or a stick, rubbed out and done over again. The mother should protect the bedclothes with plenty of newspapers. The color can be washed from hands and linen. Manuals can be found in public libraries or purchased for a small sum from craft shops, which will stimulate the patient to try new projects as well as help him with the ones mentioned.

Modeling with clay when the child is recuperating from illness may start a hobby which will last long after the child is well. Modeling clay may be purchased in many interesting colors. If the child has any creative ability he will make decorative toys in the shape of dolls, fruit baskets, soldiers, and animals. Remember that since clay is liable to color the bedclothes, they should be well protected. A mother who wants to keep her child happy even though he is sick will find many interesting ways to do this.

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is sufficient to provide our national dietary with a substantial margin of excess of iron over actual needs, thus allowing for certain inequalities in the consumption of foods which are considered important sources of this nutrient.

There is, then, very clear evidence that the dietary inadequacies of those essential nutrients provided by the enrichment of flour and bread will greatly improve the nutritive quality of the average American diet. Moreover, since these staple foods enter very significantly into the diets of people in low- and moderately low-income groups, there can be no question but that the enrichment program is a boon to these groups. Since, in addition to these benefits, the enrichment of flour and bread has already proved capable of reducing the incidence of certain nutritional deficiency diseases, making the enrichment of flour and bread a thing of permanence may well prove to be what some nutrition leaders have already called it—the greatest nutritional benefaction of a century.

The average cost of universal enrichment of flour and bread would be in the neighborhood of ten cents a year for each person living in the United States. What other practical program could one envision which would bestow such far-reaching benefits for such a pittance of expense? No change in food habits is necessary, no change in taste, appearance, or baking quality of flour or in baked products produced from the flour is involved—the only consideration we need to face is an investment of about ten cents per capita in public health and welfare.

But to make universal enrichment of flour and bread a permanent benefaction to the American people, there must be enactment of suitable State and Federal laws. A large proportion of baker's bread never crosses a State line but is produced, for the most part, in the same State in which it is consumed. A smaller proportion of flour follows the same pattern in manufacture and distribution. To make enrichment compulsory for such products, State laws are required. To make enrichment compulsory for flour and bread which do cross State lines, Federal laws are required. Already six States have passed laws which make enrichment of flour and bread compulsory either immediately or at some future date when it is expected that Government wartime powers, which now require enrichment of all baker's white bread and rolls, will expire. About twenty-five more State legislatures now in session have enrichment legislation under way, and probably in the near future many other State legislatures will have bills for compulsory enrichment of flour and bread up for consideration.

Both the Food and Nutrition Board of our National Research Council and the Council on Foods and Nutrition of the American Medical Association have endorsed making the enrichment of white flour and bread permanent in this country. The proposal to make the enrichment of flour and bread permanent through appropriate measures of legislation also has the approval and endorsement of the American Public Health Association. State nutrition leaders are at work to see this legislation carried through in their respective States. Will America invest ten cents per capita in this public-health nutrition program? America and the world shall see.

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The Health Score of Threescore Years

(*Continued from page 9*)

tious conditions? Space permits only the briefest mention of each of a number of outstanding instances of improved treatment for these diseases. The most spectacular concerns diabetes. The discovery of insulin in 1922 made possible for diabetics a life of reasonable contentment, good nutrition, and well-being, extending to a span of years often greater than they would have enjoyed on the average if they had not been diabetic. Just a few years later, discovery of the role of the liver and the juices of the stomach lining in the development of red blood cells led to the use of liver feeding and later liver extract, in the treatment of pernicious anemia. This added not a cure but a means of keeping the patient in good condition by substituting the liver and stomach lining of cattle and hogs for his own deficiency, just as the insulin of these animals substitutes for that of the diabetic.

The treatment of tuberculosis has progressed in six decades from virtually none except empirical relief of symptoms while the patient slowly died, to highly scientific use of rest. Now the tuberculous patient is helped to rest, not only by putting him to bed, but by placing his afflicted lung at rest through the early use of such measures as pneumothorax (air in the chest), thoracotomy (limited rib removal), thoracoplasty (extensive rib removal), or nerve crushing or cutting operations. All these are designed to collapse one lung while the other lung takes up

the burden. Saving of lives when this treatment is begun early enough has been sufficiently spectacular to reduce tuberculosis from the leading cause of death to eleventh. Better nutrition, better housing, shorter industrial hours under more favorable conditions for work, and a rising standard of living have also contributed to the decline in tuberculosis. The total eradication of this disease is visualized as a definite possibility.

Space permits only the mention of such advances as surgery of the heart, new understanding of nervous and mental diseases, development of psychosomatic medicine (science of relationship of mind to bodily disease), growth of fine modern hospitals, certification of competent specialists by the medical profession, refined methods of anesthesia, laboratory services for diagnosis, plastic surgery, physical medicine (X ray, radium, light, heat, cold, and water), occupational therapy, and rehabilitation.

But there are other phases of the situation that must not be neglected. Harm would be done if the impression were to be given that all medical problems are solved. Far from it. There are still many blanks in our knowledge, which must be filled, and toward the filling of which the medical profession continues to strive. We have not the final answer to the cancer problem, though we have enough to make a fairly successful attack on this disease. We do not know all we want to know about epilepsy, but determined employment of what we do know can and should do much more for the epileptic than has been done. Leukemia, the counterpart of cancer which affects the blood, is a problem awaiting solution. Increase in mental diseases is a standing challenge which must be and is being met with more than a little success.

These are some of the items of medicine's unfinished business. But it is not neglected business. Work is constantly being done in the effort to shed light into the dark places. When and where the "break" may come which will give man control of his unconquered disease enemies, no one can predict. That it will come, as it has in so many instances, medical scientists have faith to believe.

Also there are some diseases and injuries which by their very nature make remedy impossible in the present state of our knowledge. Tissues of the central nervous system, once destroyed, are not replaced, as skin, muscle, and bone may be. That alone creates an obstacle, insuperable in the present state of our knowledge, against success in the treatment of diseases due to such destruction (shaking palsy, paralysis, nerve deafness, optic atrophy). When organic tissue, such as liver, kidney, or other vital organs, is destroyed to a point where the remainder is insufficient to support the necessary normal function, life becomes impossible.

Meantime, the credit side of the ledger is rich in better opportunities for health and longer life. Already the average span of man's years is being crowded closer and closer to the psalmist's threescore and ten. In a few years it may reach and pass that mark. The same methods by which life is lengthened are also in use to enrich longer lives, so that if man's years be fourscore by reason of strength, they may be expected to include less of sorrow due to preventable pain and illness.

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Sixty Years of Health Education

(*Continued from page 4*)

We have consistently maintained that a vegetarian diet is adequate, and in some ways superior to a flesh diet. Very specificially we have declared that green leafy vegetables and fresh fruits are of primary importance in good nutrition and that the protein which meat supplies can be secured satisfactorily from milk, nuts, and other foods. Time was when a nonflesh diet was viewed as a sure means of going into an early decline. Today nutritionists declare there are certain "protective foods" which are imperative to good health. Meat is not among the four foods named, but leafy vegetables and fresh fruits are! Milk, which is another of the four protective foods, stands revealed today as being definitely superior to meat as a source of protein.

We have consistently denounced alcohol, tobacco, tea, and coffee as injurious to health. In 1885 alcoholic drinks were not infrequently used as medicine. Today alcohol is known as a narcotic, tobacco has a proved relationship to certain heart and blood vessel diseases, and tea and coffee, because of their caffeine, are subject to certain medical strictures.

The list might be enlarged. Thus stands the record of sixty years. It is at least an interesting coincidence that the three therapies that have distinguished the health teachings of this journal through the years are the very same ones that now hold a place of unique importance in modern medicine.

LIFE AND HEALTH stands as a pioneer in the field of health journalism for the layman. We believe that only today it is really coming into its own. America has rather suddenly become health-conscious, and very particularly nutrition-conscious. To meet this new interest in health we plan larger and even better things for our readers in the future. But of these we shall speak more definitely when wartime paper and publishing restrictions have been removed.

ARE YOU MOVING?

You should notify us in advance of any change of address, as the post office will not forward your papers to you even though you leave a forwarding address. Your compliance in this matter will save delay and expense.

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
Eugene Leland Memorial Hospital, Riverdale, Md.
Florida Sanitarium, Orlando, Florida
Georgia Sanitarium, Route 4, Box 240, Atlanta, Ga.
Glendale Sanitarium, Glendale, California
Hinsdale Sanitarium, Hinsdale, Illinois
Loma Linda Sanitarium, Loma Linda, California
Madison Rural Sanitarium, Madison College, Tenn.
Mountain Sanitarium, Fletcher, North Carolina
Mount Vernon Sanitarium, Mount Vernon, Ohio
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

ANSWERS TO HOW'S YOUR MEMORY?
ON PAGE 31

1. (*b*)
2. (*e*)
3. (*c*)
4. (*d*)
5. (*b*)
6. (*c*)
7. (*c*)
8. (*d*)
9. (*d*)
10. (*e*)

Sleeplessness

(*Continued from page 15*)

over the abdomen before applying the moist girdle. This helps the patient to warm up the moist compress promptly. This is especially necessary in cases of those who have poor circulation.

With these treatments other hygienic measures should be employed, such as regular hours for work, exercise, rest, and wholesome recreation. Attention should be given to securing a balanced diet. Temperance in eating and drinking, as well as moderation in all things, should be made a rule of life. Tea, coffee, cola, and other caffeine drinks, as well as tobacco and alcohol, should be avoided. A wholesome mental attitude should be maintained at all times. This will come as a result of acquaintance with and a trust in divine power. Such a philosophy of life will fill our lives with happiness and thanksgiving instead of worry and unnecessary care.

Don't be chained by constipation!

Far more people than will readily admit it are suffering from this great American malady that stands in the way of vitality and initiative.

DON'T JUST SIT AND WAIT for relief. Constipation thrives on doing nothing. When relief is needed, something *must* be done. But do something helpful! Don't punish yourself with drastic, irritating-drug laxatives that tend to perpetuate your trouble. They only help to forge the chain that binds you.

DO THIS ONE THING, TODAY! Go to your Battle Creek Authorized Dealer or drug store and get an economical 10-ounce container of Battle Creek LD-Lax, the clinic-proved, non-habit-forming preparation invented by a prominent physician who devoted his entire career to improving health through healthful eating. Imitations may have similar names but do not be deceived. Insist on LD-Lax.

Other
BATTLE CREEK
Products

for health and healthful eating ... used and endorsed by the Battle Creek Sanitarium.

"ZO"—a ready breakfast cereal—wheat bran, barley, and soy bean—crisp and crunchy.

Bran and Fig Flakes—a ready cereal, mildly laxative, enriched with wheat germ and brewer's yeast.

Savita—a yeast-vegetable extract, delicious in soups, gravies, etc. Contains vitamin B_1 and riboflavin.

Protose — appetizing and hearty, for meatless "steaks" and croquettes. Contains 20.3% protein.

"WELL, WHERE HAVE I BEEN?" you'll say when you learn that LD-Lax has been used and endorsed for many years by the world-renowned Battle Creek Sanitarium—that thousands have found real relief in this sane and sensible aid to regularity. LD-Lax is a unique combination of lactose, dextrins, and bland, demulcent bulk that brings gentle, gratifying results—a distinguished member of a famous family of fine products for health and healthful eating.
There's only one LD-Lax.

BATTLE CREEK
LD-LAX
The Friendly Laxative!

THE BATTLE CREEK FOOD COMPANY
Dept. LH-10, Battle Creek, Mich.
Here's to liberation! Enclosed is my dime, wrapped in paper, for generous trial sample of LD-LAX.

Name.....
(PLEASE PRINT)
My Address.....
(STREET OR R.F.D.NO.)
City.....*State*.....

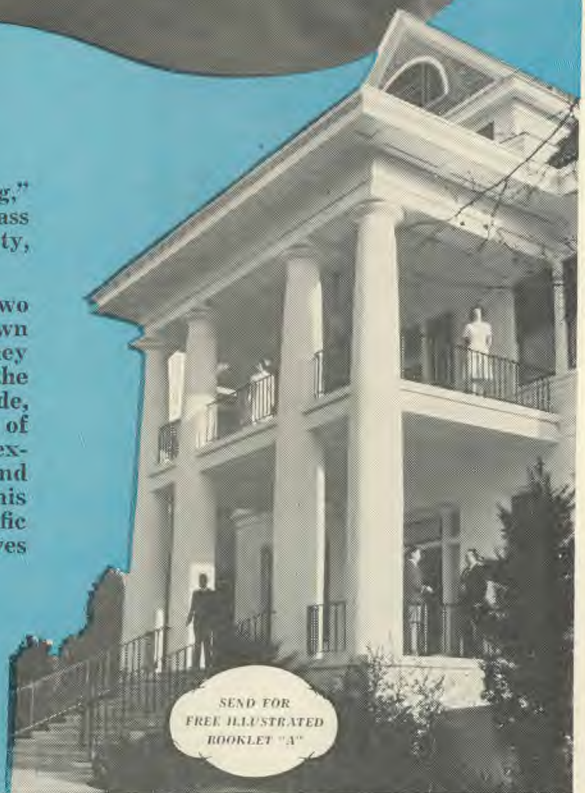
MYSTERIOUS RAYS

Shine Down Through the Years

"It would be a lovely thing," said Pierre Curie one day to Marie Sklodowska, "for us to pass through life together with our dreams: our dreams for humanity, our dreams for science."

That was the beginning of a partnership in which two brains and four hands searched many years for an unknown chemical element, in a tiny, damp workroom. In July, 1898, they announced the discovery of *polonium*, and in December of the same year, they announced a second new element in pitchblende, which they named *radium*. After four years of treating tons of pitchblende residue, they proved to the world that radium existed. Radium, with its mysterious possibilities, was born—and given—to the world. To patent the process for producing this substance would be, as Marie put it, "contrary to the scientific spirit." Of the Curies it can truly be said, "Their work lives after them."

The Washington Sanitarium and Hospital with other medical institutions can serve its guests better because of the discoveries of devoted researchers.



MENTAL AND CONTAGIOUS CASES NOT ACCEPTED

WASHINGTON SANITARIUM and Hospital-Takoma Park, WASHINGTON 12, D. C.