THE ORIENTAL WATCHMAN ANDHERALD OF

FOR YOUR GOOD

Health

A MAGAZINE FOR HEALTH, HOME AND HAPPINESS

Donald Trivedi

MARCH — Watering the Thirsty Land — 1948

EDITORIAL

SUPERSTITION AND COMMON SENSE

SUPERSTITION is belief in that which is without evidence in fact, and which therefore has only an imaginary existence. It cannot be objectively examined. It is excessive fear or regard for some object, form or power, which does not operate or exist in reality. It is based on ignorance of how forces or powers can or do operate, and is, therefore, an ignorant and irrational belief in, and regard for, omens, divination, sorcery, "mantsams," talismans, charms, amulets, and much else of the same ilk.

This does not imply that superstitious persons are all ignorant in every respect, but it does imply that they are stupid and ignorant in respect of those matters about which they are superstitious. The more general the ignorance, the more general is the superstition likely to be; and the more stupid also, for all superstition is stupid. Where knowledge, which can be objectively examined and investigated, is meagre, superstition flourishes and controls the lives of people to a greater degree than elsewhere.

Superstition has controlled men and their behaviour since the dawn of history and has manifested itself in many and various forms. Usually it operates to men's hurt or disadvantage. Because superstition is not based on fact, but only on imagination and assertion, its forms have not been uniform among the peoples of the earth. That which has been reverenced, or feared, or regarded, or which was taboo among one people, has been ignored by another without any known effect. This obtains even today. They who are governed by superstition sometimes experience that which, according to their contention, supports their belief, and a mere occasional coincidence is cited as proof. The experience is usually a loss, an injury, or disadvantage of some kind as punishment for violation of the superstition. Meanwhile, others who ignore it are not affected in any manner thereby. Is it not strange that supernatural powers operate only according to human belief? Does not this indicate that the power of a superstition is only in the mind?

Natural forces operate uniformly according to definite laws in all places and at all times. Science is the same science in India as in other lands. Knowledge that may be objectively tested anywhere, may be so tested in India.

Many superstitious beliefs of the past have perished with the people who believed them. Some religions that have now been forgotten were almost entirely organized superstition. Much religion of the present day is still so.

The Persian King Cambyses was enabled to conquer his more powerful enemies, the Egyptians, by carrying cats in the van of his army. The superstitious Egyptians feared to kill the cats lest divine wrath overtake them. Why did not divine wrath overtake the Persians who did not fear to kill cats? Or was there one brand of divine wrath for Egyptians and another for Persians? Or are there as many kinds as there are beliefs? We think not. But if the killing of cats in Egypt in times past incurred the displeasure of supernatural powers, why does it not do so in Egypt today? And in India? Instead of cats and instead of Egypt, substitute other animals and other lands and see what we have today!

In the history of the continents we read that when a few hundred years ago a famous explorer arrived on the shores of a newly discovered land, he and his company were received with hostility by the natives. But he had learned of their superstitious regard for dragons that inhabit the atmospheric regions about us. He also knew that at a certain time there was to be an eclipse of the moon. In order to bring his superstitious hosts to terms, he threatened to have the moon devoured by a dragon, and as the eclipse developed the terrified people quickly yielded to his demands. Disaster and destruction were in the minds controlled by superstition, but power and victory in those controlled by knowledge and common sense.

We have a friend who always hangs some ludicrous or attention-taking object in his garden to avert the evil eye. It may be an ugly effigy of a man, an old shoe, or a broken vessel. Sometimes his garden thrives, and the averting object is given the credit. But other gardens whose owners do not fear the evil eye and who take no steps to avert it, also prosper when given good care and if weather conditions are favourable. Of course, the power of the averting object is in the mind only.

A house under construction was nearing completion. The contractor had neglected to hang up the averting object. A coolie woman leaned heavily on the newly formed cement balustrade along the well of a staircase. The concrete not being well set, gave way, carrying the woman with it. The Brahmin contractor was blamed for the accident since he had neglected to hang up the protection. To argue that the woman's thoughtlessness or stupidity would not have been operative had the averting object been present is only to add stupidity to stupidity.

Accidents are not caused or prevented by the operation of any power of inanimate objects, but only by man's relationship to them.

Think of all the mischief that is ascribed to the evil eye in India! If the evil eye must be averted in India why need it not be averted in other lands? Is it a local monopoly? We believe that the evil eye exists in the mind only, and except for the mischief it does in the mind it is not a thing to be feared.

The list of signs and omens that control the lives and activities of the Indian people is truly impressive. One can but wonder why supernatural powers would manifest themselves so markedly in one country and not elsewhere. Among that which is to be observed are such as sneezing, yawning, the chirping of lizards, the cawing and other actions of crows, the nodding of the head by chameleons and the power of numbers. Cows, deer, crows, and pigeons, seen moving from the left to the right, are regarded as good omens, while dogs and jackals must be seen moving in the opposite direction. A loud cry from the east is a bad omen, as is also a chair or a vehicle carried upside down. A student on his way to the examination hall, seeing a Brahmin or a widow, must avert the power of the evil omen by retracing his steps. Is it not rather remarkable that his mental ability, his diligence and faithfulness in study, and his knowledge of facts, as well as the efficiency of his teachers may all be

nullified by the sight of a Brahmin or a widow? Where does common sense enter?

Of auspicious and inauspicious seasons, days and hours, there is almost no end. Almost every necessary act of life has its auspicious and inauspicious time. Some who formerly were governed by this now ignore it, and fare as well as they did then. Among some communities Sunday and Friday before noon are bad times to start a journey westward. It is equally bad to go east on Monday or Saturday. Never go north on Tuesday or Wednesday. Often we have found these alleged inauspicious days for travel very auspicious, since more space and comfort were available in railway coaches.

Some years ago two of our friends purchased building sites in one of India's great cities. One, observing some unfavourable omen refused to build while waiting for an auspicious time. War broke out, materials became scarce, costs increased enormously, and the house still remains unbuilt. The other who disregarded omens, completed his house before adverse economic conditions overtook him, and is today reaping a rich profit as a reward for being governed by common sense.

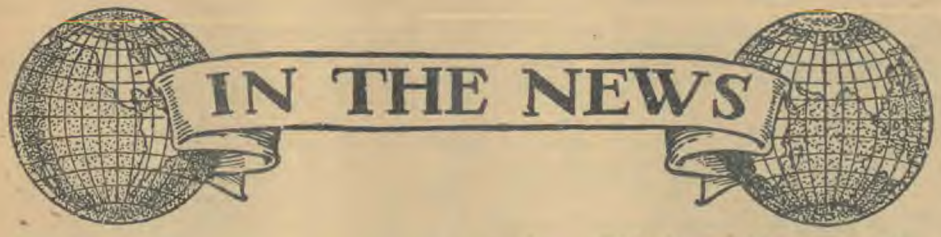
Some shopkeepers will not sell white paint after sundown or after the lamps are lighted. There are days when it is bad to shave. Endless enmity and hatred will arise if one dines with friends on Sunday or Thursday, and so on *ad infinitum*.

The power of superstition obtains because of the attitude of mind. There is no objective or scientific basis for it, but there is power in ideas even though they be lying delusions. Facts may be objectively studied and scientifically examined. There is a basis for them in truth. Causes and effects may be ascertained even though the process be long and tedious; but the power of superstition has no basis in fact, and does not exist in reality. This has been proved a thousand times by those who have long lived in the fear and bondage of superstition and have suddenly broken away from it without experiencing any of the threatened evils.

Ignorance of the operation of natural laws promotes superstition. Certain classes of pseudo-leaders among men have perpetuated the grip of superstition in order to advance their own interest. Among such are priests, fortune-tellers, astrologers, clairvoyants, magicians, medicine-men and others whose prestige and economic welfare depends on superstitious belief and ignorance. Often they obstruct the progress of education and deny knowledge to those who follow them. They know well that superstition cannot flourish where there is knowledge of facts and where common sense governs actions and feelings. Ignorance and intellectual darkness are superstition's paradise.

Then, too, there is the power of natural attraction to the mysterious and occult. That which cannot be examined or explained or understood is often more highly regarded by the gullible than knowledge. Under the influence of ignorance this power operates like that which draws a moth into the flame of a candle to be incinerated. To be governed by superstition is intellectual weakness.

Among some large groups of people superstition has almost entirely disappeared, and the remaining vestiges are not usually taken seriously. Science has made clear much that was formerly believed to be supernatural. Superstition based on falsehood and feeling has been replaced by common sense and reason, and mankind has benefited accordingly.



Memory Tube

A UNITED STATES naval laboratory engineer has invented an electrical device that "remembers." It is a glass tube about two feet long and five inches in diameter; similar to those used in modern television. It is so arranged that it catches electrical impulses by means of one electronic beam and puts them on a screen inside the tube where they are held by another beam as "memory." A third beam releases and transmits the "memorized" impulses at will of the operator. This device is expected to be a great aid in the operation of certain radar equipment and in the use of electronic computers.

Insecticide

IT IS reported that the American Cynamid Company has brought out an insecticide called "Thiophos 3422" which is twenty-five times as effective as DDT, yet harmless to products or the user. No species of insect has been found which is resistant to the new product. This insecticide is particularly recommended for fruit and vegetable pests.

Fish Story

IN ICHTHYOPHAGOUS Japan, good fishing techniques are a matter of national importance. So the Japanese Government asked Dr. Tadayoshi Sasaki, of Tokyo's Institute of Physical and Chemical Research, to work out a commercial way of using light to catch more fish. Last week Dr. Sasaki described a fiendishly clever system of luring fish to their doom.

At some distance off shore, Dr. Sasaki places a roughly V-shaped net. Inside the net, under water, he hangs a sealed-beam headlight bulb fed with current from a storage battery, the beam pointing out of the net. He hangs other bulbs, giving diffused light, in a long line toward the shore.

After nightfall, Dr. Sasaki turns on the lights. The fish, which are very fond of light, think it's a party—or maybe a whole series of parties. They gather in swarms, cavorting around each light. When enough fish have gathered, Dr. Sasaki turns off the light nearest the shore.

The fish, not yet ready for the party to stop, move to the next light. After a while Dr. Sasaki douses that light too. The fish move on, in a growing throng, like tipplers shunted from bar to bar by a series of closing hours. At last the only remaining light is the fatally attractive beam that beckons from inside the net. The fish swim in and Dr. Sasaki hauls up his net. In the cold light of dawn, the light-minded fish are headed for broiling (yaki zakana).

One species, the austere grey mullet, seems uninterested in parties. But Dr. Sasaki is not discouraged. He is planning to try coloured lights, in hope that the stepped-up allure will attract the grey mullet too.

Nobel Prizes

THE committee of eminent Swedes that passes out Nobel Prizes, each of which amounts to about Rs. 135,000, gave the 1947 physics and chemistry prizes to two Britons, Sir Edward Victor Appleton and Sir Robert Robinson.

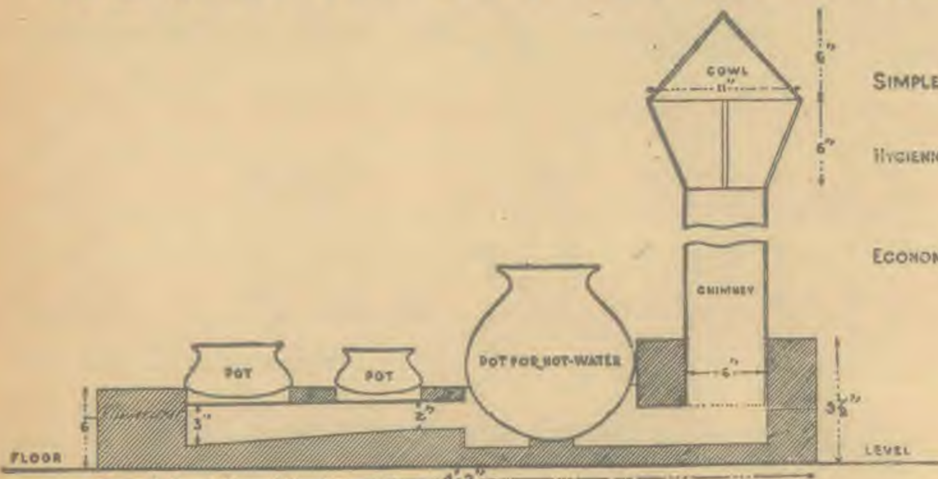
The 1947 Nobel Prize in medicine was awarded to two Americans, Dr. Carl F. Cori and his wife Dr. Gerty Cori, of Washington University, and Dr. B. A. Houssay of Argentina. The peace prize was awarded jointly to the American

(Continued on page 6)

THE HERL SMOKELESS OVEN FOR EVERY HOME

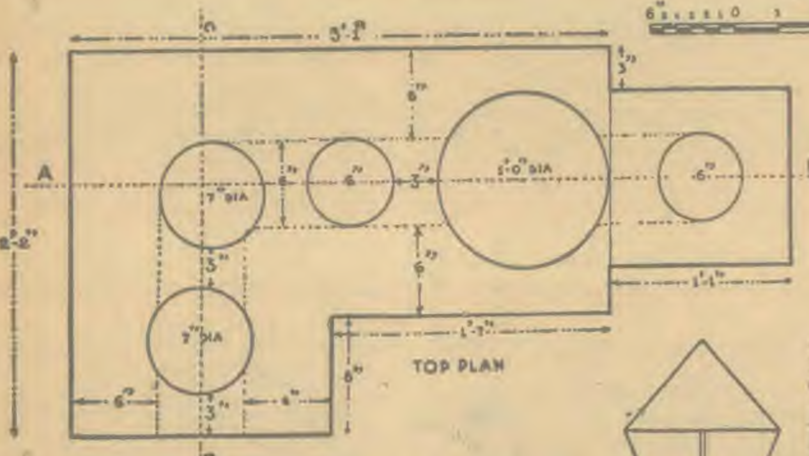
DEVELOPED AT THE

HYDERABAD ENGINEERING RESEARCH LABORATORIES



SECTION ON A.B.

SCALE 1/8



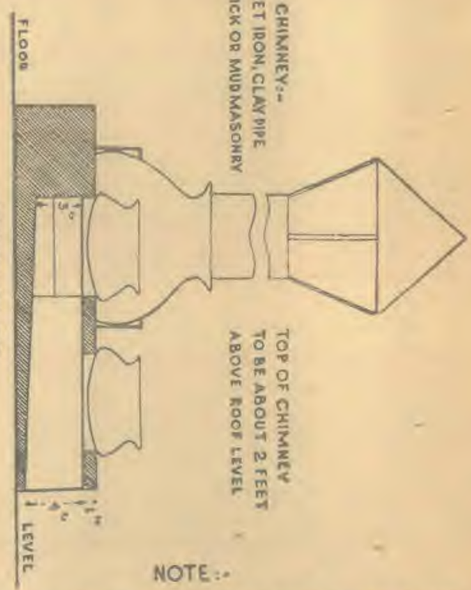
TOP PLAN

SPECIAL FEATURES

SIMPLE :- 1. CAN BE BUILT BY ANY MASON WITH MATERIALS AVAILABLE EVEN IN A VILLAGE.
2. CAN BE USED BY ANY HOUSE-WIFE OR COOK.

HYGIENIC :- 1. ELIMINATES SMOKE & SMARTING OF EYES & NOSE.
2. REDUCES BLOWING OF FIRE & HEAT OF OPENFLAME
3. KEEPS FOOD FREE FROM SOOT & ASH.
4. MAKES KITCHEN CLEAN & CHEERFUL

ECONOMIC :- 1. SAVES FUEL.
2. SAVES LABOUR.
3. PROVIDES HOT-WATER.
4. COSTS ABOUT Rs. 14/-



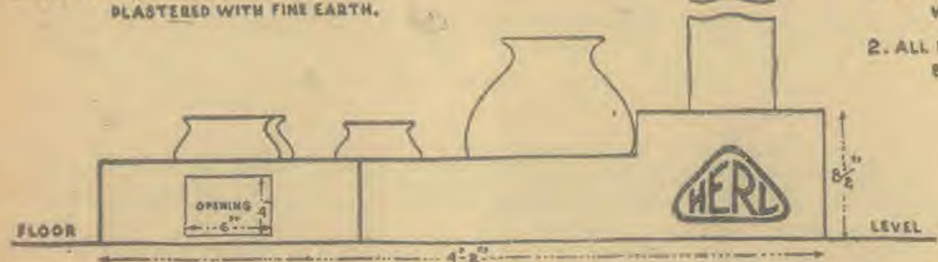
SECTION ON C.D.

DIAMETER OF HOLES:- ABOUT 1" SMALLER THAN POT.

OVEN:- BUILT OF MUD OR BRICK-IN-MUD, PLASTERED WITH FINE EARTH.

NOTE :-

1. OVEN MEANT FOR FIREWOOD, COW DUNG CAKES, & ANY WASTE COMBUSTIBLE MATERIAL OF THE HOUSEHOLD.
2. ALL HOLES TO BE COVERED DURING COOKING TO PREVENT BACK DRAUGHT.



FRONT ELEVATION

OPENING FOR FIREWOOD:- NORMALLY 6"×4"; FOR BIGGER FAMILIES WIDTH MAY BE 7" OR 8".

(DR. S. P. RAJU) DIRECTOR, 23. 3. 1947
ENGINEERING RESEARCH LABORATORIES.
H.E.H. THE NIZAM'S GOVT.
HYDERABAD, DN.

DRAUGHTSMAN

RESEARCH ASST. ENG'G MATERIALS LAB

Smoke Is a Detriment to Health in Most Indian Homes, and a Cause of Untidiness and Disfigurement. The Herl Smokeless Chula, Designed by Dr. S. P. Raju, B.A., B.A., Dr. Ing. (Munich), M.I.E. (Ind.), M.I.A.H.S.R. (Stockholm), Is So Constructed That These Defects Are Eliminated.

The Drawings and Photographs Reproduced Herewith Are Made Available Through the Service and Courtesy of the Hyderabad Engineering Research Laboratories of which, Dr. S. P. Raju is the Director, and to Whom Enquiries for Further Information May Be Directed.

As the servant problem is becoming acute and it may become necessary for the high class ladies to come into the kitchen, this special compact type on the left has been developed. It provides the usual kitchen requirements including (i) the actual cooking range; (ii) the preparation table for operations like cutting vegetables, kneading flour, mixing of food-stuff; (iii) a sink for washing; (iv) shelves and cupboards for the kitchen stoves; (v) storage space for firewood; (vi) garbage bin, etc. In order to save space in the kitchen, as also the time and energy of the housewife, this compact unit is more or less in the form of a "U."

The "Herl" Chula in a Village Cottage.

To meet the needs of the village, a simpler arrangement is devised with only two holes for cooking pots, a hot water pot and a chimney consisting of the round tiles that are used for roofing in the villages and in poorer houses in the cities.

The Ageing Smoky Chula. The New Smokeless "HERL" Chula.

IN THE NEWS

(Continued from page 3)

Friends Service Committee and the Friends Service Council in London.

Cause of Death

MELVIN H. KNISELY, a physiologist at the University of Chicago, after seventeen years of research asserts that he has discovered the cause of death by disease or injury. Using a special quartz-rod light of his own designing with the microscope, he has found that in illness the red blood cells in the plasma clump together in sluggish masses. Such sludged blood cannot circulate through tiny blood vessels. Body cells are thus deprived of food and oxygen, and death ensues. Knisely found that disease or injury causes the body to deposit a sticky substance on the red blood cells which causes them to adhere and form sludge.

Geiger Counter

IN THIS atomic age another fear has been added to man's already long list —the fear of injury inflicted by radioactivity unknown to the victim. A handy pocket model of a Geiger Counter has therefore been developed by the University of Chicago, which is so easy to read that anyone can tell when his surroundings become dangerously radioactive. The user just presses a button, and if the indicator moves across the scale, he can be sure that he is being bombarded by unhealthy radiation.

Progress

IN 1898 in his *Practical Ethics*, Henry Sidgwick assured the world that wars of the future would be less brutal than those of the past, but in a recent issue of the *British Weekly* Mr. Desmond MacCarthy says: "It is silly to believe in progress—at least in any human sense."

Not All Evil

How do disease germs enter the body? What is the circulatory system of a plant? These and other questions are now being answered by scientists who mix radioactive substances in minute quantities with the food of animals, inject them into the bloodstream, and in other ways pursue research hitherto impossible. The radioactivity makes it possible to follow the course of such substances in animals and plants.

Untouchability

INDIA'S Constituent Assembly has adopted the provision that "untouchability in any form is abolished." So, in theory at least, 50,000,000 untouchables in India no longer exist. However, untouchability is a fundamental of Hindu religion, and the implementation of this act in actual Hindu life will require time.

Raft

THE six young Scandinavian scientists who were set adrift on a primitive raft, have proved their contention that the Polynesian Islands might have been settled by drifting navigators from South America. After four months aboard a fifty-foot raft made of lashed balsa logs, a single mast, and a crude sail, the group was carried by the Humbolt current from the Peruvian coast to Tuamotu Archipelago, more than 4,000 miles away.

Anti-Malarial

DICHROA FEBRIFUGA is the botanical name of a Chinese plant which has been found to contain two anti-malarial chemicals, one of them one hundred times more powerful than quinine.

Sleep

RITA ARGAL, a twenty-five-year-old Australian girl, woke up recently in a hospital at Melbourne. She sat up and rubbed her eyes. "Where am I?" she asked. "What happened? I feel as though I have been dead." She had been asleep for six months. Leading nerve specialists say that she had not been suffering from sleeping-sickness, but that her condition may have resulted from a process of mind induced by escape mechanism.

Toward Better Teeth

THE addition of fluorine to drinking water can probably reduce dental decay by sixty per cent. This appears from tests conducted in seven United States cities during the past two years.

For example: In a city with a population of 30,000, dangerous counts of lactobacillus acidophilus in the saliva of children under eight, was reduced by fluorine from 63.5 to 47.3 per cent. In a neighbouring city of equal size, without fluorine in its water, no change in the percentage of children affected by tooth decay could be observed. These tests showed that apparently one part fluorine in 1,000,000 parts water is the best mixture. These tests will go on for another eight years to determine their long-range effects.—*USIS*.

"Airphibian" Is Both Plane and Motor Car

FROM time to time a small, aluminium-coloured plane lands at an airport in the United States of America, taxis to a hangar, sheds its wings, tail and propeller, and drives off on the road to the city. Pilot, driver, inventor and manufacturer of the "airphibian" is Robert Edison Fulton, Jr., descendant of the inventor of the steamboat. He travels on business in his invention, which is up for licensing approval by the U. S. Civil Aeronautics Administration and will soon be sold commercially.

The fuselage on land becomes an automobile body, resembling that of a racing car. It rolls on four small wheels which also serve as landing gear. In flight the airphibian cruises at 105 miles per hour, and on the ground it can be driven at a speed of 45 miles per hour. The motor and the steering wheel are the same for flight or road travel. The transformation from plane to car takes between three and four minutes.

Bomb-Proof

WHAT is advertised as the world's first atom-proof factory, is now under construction in Oslo, Norway. The plant is believed capable of resisting every type of bomb invented—so far at least.

World's Largest Flying Boat

THE world's largest flying boat, in construction for nearly five years, recently made its first taxi runs at Long Beach, California. On the third test run, the 180-metric-ton colossus built of plywood, took to the air and flew a mile some 70 feet above water.

The Howard Hughes plane is 219 feet long, spreads its wings 320 feet; its thin rudder towers 80 feet above the keel. It is said that the plane could transport a maximum of 700 persons. When fully loaded it draws eight feet of water. Eight motors produce 24,000 horsepower. Controls are operated by a hydraulic system with 26,000 pounds pressure. Major flight tests are not expected before March, 1948.

Preventing Tooth Decay

A METHOD of preventing tooth decay by adding to sugar during refining chemicals to check the acids in sugar that attack teeth, has been advanced by Dr. L. S. Fosdick of the Northwestern University Dental School at Chicago, Illinois, U. S. A. Of the thirty-one chemicals usable, glycerol aldehyde is considered best. It is a triose sugar, a natural constituent of muscle, harmless, without objectionable taste, and mixes readily with sugar.

"Sandpaper" Tyres for Icy Roads

A TYRE with a firm grip on icy and snowy roads is being distributed to American dealers for winter sales by the B. F. Goodrich Company. Designed strictly for winter roads, the tyre has abrasive particles moulded into its rubber stock. Types for trucks, buses, and passenger cars are being produced.

Rheumatism, rheumatism,
How it pains,
How it pains,
Up and down the system,
Up and down the system,
When it rains,
When it rains.

AS youngsters we used to sing the above words in a round. They are quite accurate, as well as being poetic, for rheumatism does make the rounds up and down the system. It usually hits one joint, then another, and another, leaving in its wake many chronic sufferers.

Chronic rheumatism is the most prevalent chronic disorder among civilized people. There are twice as many sufferers from chronic rheumatism as there are from its nearest competitor—chronic heart disease.

Rheumatism is painful, aggravating, and produces no end of crippling; yet we hear comparatively little about it as compared to other diseases. Probably the reason for this is that rheumatism as such rarely kills; it merely handicaps one. Consequently cancer, apoplexy, Bright's disease, infantile paralysis, and heart failure are in the limelight, whereas with rheumatism people just live on and suffer.

WHAT IS FIBROSITIS?

WAYNE MCFARLAND, M. D.

There are several kinds of rheumatism. In fact, the word "rheumatism" includes not only diseases that affect the bones and joints, but also diseases that affect the muscles, bone and joint coverings, and muscle tendons. In this article we shall confine ourselves to the disease of the muscles and the tendons. This is often called muscular rheumatism, or fibrositis. Fibrositis is due to an inflammation of white fibrous connective tissue, and this inflammation can occur anywhere in the body where there is muscle or tendon tissue.

You may have cut yourself at some time. The scar that formed when the cut healed was made up of white fibrous connective tissue. This type of tissue is normally found separating muscles and muscle fibres. It is concentrated in bundles at the ends of the muscles, forming tendons. This same type of fibrous tissue is found around the joints of the body. Here it forms ligaments, which act as a protection and support for the joints. In the back this connective tissue occurs in sheaths between large muscle groups, and continues from the back down over the outside surface of the thigh muscles. This may help explain some of the symptoms people complain of when they have muscular rheumatism, or fibrositis. If the connective tissue of the neck or back becomes inflamed, then the individual suffers neck or back pains, sometimes called lumbago.

Fibrositis of the joints is inflammation in the connective tissue around the joints themselves. Many times the joints of the hands or wrists are involved, and the stiffness is quite disabling. The individual suffering from this type of fibrositis has often noticed that he is stiffer in the morning than at night. He finds that as he moves about in the morning he limbers up. At the same time he may have noticed that if he sits down during the day this limbering-up process has to begin all over again. In other words, he becomes stiff when not active and tends to get better when he uses the muscles.

This is quite different from the case of one who is suffering from true arthritis, or bony rheumatism. In arthritis the more one uses the joint the worse the pain becomes. Arthritics usually find that they feel better after a good night's rest and can move about more freely with less pain. Not so with the individual suffering from fibrositis; he feels better when he is active.

Sometimes the tissue about the finger joints swells in fibrositis. A doctor must be consulted to be sure that it is muscular rheumatism and not bony arthritis that the patient is suffering from in such a case. Many a person has suffered from what he thought was arthritis, and may even have treated himself for this, when in reality he was suffering from fibrositis. This may be discovered by taking an X-ray picture. Arthritis leaves tell-tale marks in the bones. Fibrositis does not.

This brings us to the fact that a thorough examination must be done by a competent physician in order for one to know whether he is suffering from muscular rheumatism or bony rheumatism. A person who suffers from fibrositis usually does not lose weight, whereas those who suffer from infectious arthritis are generally run-down, lose weight, and may have a slight rise in temperature. Persons with muscular rheumatism do not have an increased temperature, and there is no sign of infection that will show in the blood examination.

For the person suffering from muscular rheumatism there are some simple procedures that can be carried out at home, which will help in alleviating the pain and stiffness. If suitable water treatments are carried out persistently, they often bring welcome relief. It is important that one know that he is suffering from fibrositis before he begins to carry out any measures at home, however, for it is possible to aggravate a true arthritis by treating it too vigorously.

If the fibrositis is located in the hands and wrists, then there is nothing better than alternate hot and cold hand baths. These can be taken in the following manner: Have two large basins, one for hot water and one for cold. The temperature of the hot water should be 110 degrees Fahrenheit or more. In fact, the hotter you can stand it the better the reaction will be as you change from hot to cold. To keep the cold water cold, you should have some ice cubes floating in it.

Begin the treatment by placing the hands in the hot water for a period of ten minutes. Then take them from the hot water and place them in the cold water for a period of from fifteen to thirty seconds. It may be that you cannot hold your hands in cold water for full fifteen seconds to begin with, but hold them in as long as possible. From the cold water return them to the hot. This time keep them in the hot water for only three minutes. Next place the hands back in the cold water for thirty seconds; then back in the hot for three minutes; then in the cold for thirty seconds and so on. Alternating back and forth from the hot to the cold water produces a vigorous increase in circulation. When you have changed from hot to cold six or eight times, dry the hands thoroughly. Now apply vigorous massage to the tender areas. If someone in the family can give massage

at the end of the treatment, so much the better. Usually a mild form of fibrositis can be relieved in a matter of only a few days if this simple procedure is carried out two or three times a day.

Should one suffer from fibrositis of the neck muscles, another form of treatment would have to be used, for it would be difficult to give one's neck an alternate hot and cold tub bath. For neck-muscle fibrositis one should obtain an infra-red lamp. Use it in the following manner: Place the heating element from eighteen to twenty-four inches away from the part to be treated. Apply heat for a period of from thirty to forty-five minutes. If the heat is too intense, it will cause red and white blotchy areas on the skin. This means that the heating element is too close to the part being treated, for the skin should develop no more than a faint pink blush. After from thirty to forty-five minutes of heating with infra-red, apply deep vigorous massage to the neck muscles. After the massage bend the head forward as far as possible, then to the right, left, and back as far as possible. Lastly, rotate the head, stretching the muscles of the neck to their limit.

In about fifty per cent of cases nodules may be found in the muscles, and can be felt when massaging the areas that are involved. These nodules are particularly painful. As long as they remain they will cause inflammation in the surrounding tissue, and the muscle will be sore and tender and will easily cramp or go into spasm. This is often seen in fibrositis of the low back muscles or in the muscles of the thigh. When there are nodules present, these must be rubbed away with deep heavy massage, using the ball of the hand or thumb.

We do not know the exact cause of fibrositis, but it is known that cold and damp weather aggravates muscular rheumatism and that it can be aggravated also by over-use of muscles when the fatigue products are not carried away as they should be. But, in view of the above-described treatments, something can be done about fibrositis even though we do not know its cause.

There have been some reports by medical men that vitamin E will help a person suffering from fibrositis. This vitamin must be taken in enormous doses and should be taken under the supervision of a physician if it is used in the treatment of this particular condition. In the ordinary type of fibrositis, however, most sufferers will find that the above-suggested simple treatment measures will be found adequate.

WHAT TO DO ABOUT LOW BLOOD PRESSURE

ALAN JAMISEN, M.D.

HOW often we have heard the patient say, "Doctor, the man who checks blood pressures down at the Ajax Market tells me I have low blood pressure. Should it be my age plus a hundred?" Such a question comes not only from misinformation but from the lack of basic knowledge in the subject of physiology.

In the first place it is doubtful that such a condition exists as an actual disease called low blood pressure. Persistently low blood pressure is entirely compatible with a normal state of health and well-being. Low blood pressure is a gift. High blood pressure is a disease or the result of one.

Blood pressure is maintained by a number of factors—the heart, the blood vessel elasticity, the blood volume, and the resistance to the blood as it passes through the blood vessel network. Variation in these factors may produce temporary or permanent changes in blood pressure. Generally speaking, there is a wide range of normal blood pressure. A pressure above 150 may be considered above normal, and a pressure below 100 may be thought to be below normal, but not necessarily abnormal. One hundred and ten is a good book normal. Up to the age of fifty years the formula of the age plus a hundred may work nicely, but beyond this age the results are only abnormally true.

Low blood pressure may be divided into three groups. First, the primary, which already has been mentioned, is a normal individual who lives happily with a blood pressure below 100. Second, there is the essential type, a very unsatisfactory term which actually means that the cause for the low blood pressure is unknown. Third, low blood pressure often occurs as a result of alteration in the factors which maintain it, and these may be termed secondary. Under this last head, conditions such as shock, acute fevers, chronic infections, heart muscle damage, adrenal gland disease, and simple change of posture should probably be placed, for they physically alter the four factors which support normal blood pressure.

By far the largest group of individuals who have low blood pressure belong to the primary or symptomless type. They are the normal individuals with a consistently low blood pressure. It is quite evident that this needs no treatment. Life expectancy not only is not compromised but is actually increased.

Essential low blood pressure, the type for which no cause can be found, may be associated with a vague group of symptoms which include headache, shortness of breath, rapid heart, chronic fatigue, dizziness, inability to concentrate, and digestive disturbances. However, the presence of one or all of these symptoms mentioned does not necessarily mean low blood pressure specifically. It is possible that the removal of some infection will reflect improvement in this group. We may read of such preparations as ephedrine, adrenal cortex, and strychnine as having something in their favour in the treatment of low blood pressure, but practically the results are very unsatisfactory.

Secondary low blood pressure forms a portion of the picture in a variety of disease conditions. Obviously the treatment in this group centres in the treatment of the primary causes, such as treating the toxic and mechanical factors seen in shock, hæmorrhage, or in acute infections, and in certain chronic infections. Naturally, if the general body resistance is low, there is likely to be low blood pressure.

In general we may conclude that low blood pressure is only a very unstable symptom, and never a disease. To the group of individuals who present themselves suffering from this difficulty, we may recommend the following in a general building programme to support normal body function, and in turn a normal blood pressure: (1) Building diet, high in protective foods, (2) vitamin therapy, (3) physical therapy, hydrotherapy, (4) moderate exercise.

A diet of 1,800 calories is considered maintenance for the average individual; one of 1,000 calories is a reducing diet;

and that of 2,200 calories is probably close to a normal diet commonly eaten. Three thousand calories constitutes a building diet. This latter diet should be made up high in content of the protective foods found in (1) green and yellow vegetables, some raw, some cooked, frozen, or canned; (2) oranges, tomatoes, grapefruit, raw cabbage, or salad greens; and (3) potatoes, other vegetables and fruits, raw, dried, cooked, frozen, or canned. High protein in the diet, in some cases up to the amount of 100 grammes daily, is recommended—one pint to one quart of milk daily, an egg, or cottage cheese, curds, or nuts and legumes at each meal.

Adequate vitamin therapy cannot be overestimated. Even though the vitamin content of our food may seem to be sufficient, the added vitamin therapy is well to consider. Vitamins are excellent adjuncts to any diet of the patient.

It is a well-known fact that the knowledge and use of water treatments have long been neglected. Applications of cold water cause a primary rise of blood pressure with a partial fall when the reaction occurs. However, because of the increased tone of the small blood vessels of the body, the blood pressure does not immediately drop to the abnormal levels.

During applications of cold water, mechanical stimulation of the skin by friction with a coarse cloth, or a fine needle spray, and exercise tends to raise the blood pressure. In contrast to this, when general hot applications of water are employed, there is usually a brief initial rise followed by a lowering of the blood pressure. With cold application there is blanching of the skin and constriction of the blood vessels with the consequent increase of the blood pressure.

Thus at home we have a very efficient means of increasing the body tone and also of elevating the blood pressure, by the simple use of such treatments as the salt rub, the cold-mitten friction, cold-towel rub, or the stimulating spray.

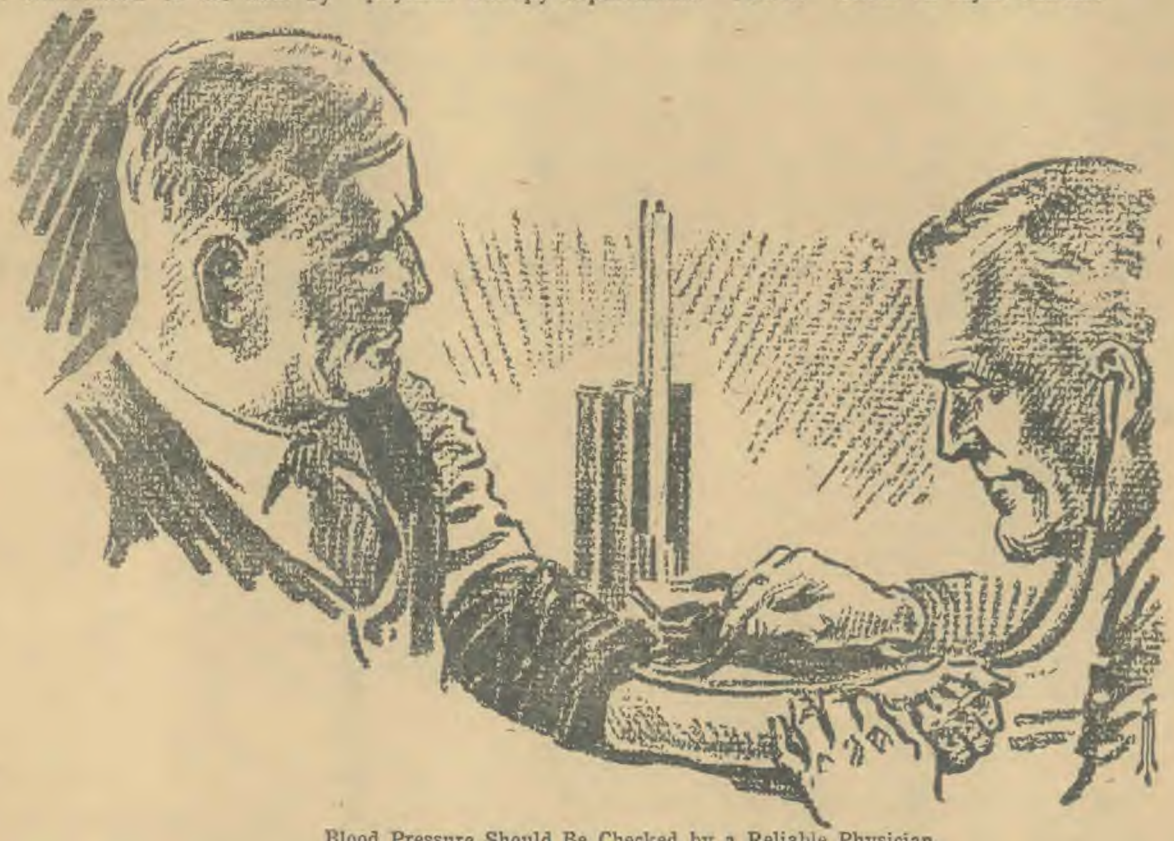
In the first two treatments mentioned, a coarse, open-mesh mitten for each hand is used. Common salt is then briskly applied to the wet body, causing stimulation of the skin and the underlying blood vessels.

In the second and third type of treatments the mittens or a course turkish towel is dipped in cold water. One can have a better effect by having a small piece or two of ice floating about in the water. Again rub briskly the entire body, one member at a time. Caution must be taken to keep the room temperature sufficiently high so that chilling will not occur.

The strong cold spray is more difficult at home and probably should be reserved for the treatment rooms in the physical therapy departments. The results are equal with the other methods, and the cold spray to complete the above measures, followed by a vigorous dry-towel rub, is good.

At the beginning of exercise there is a reaction which causes rise in blood pressure. This usually comes on almost immediately after work is started, and may be exaggerated by emotion. There is a gradual rise to a maximum in five to ten minutes after the beginning of exertion. With moderately severe exercise the change in the blood pressure averages between 60-70. This rise may certainly be regarded as purposeful and a necessary accompaniment of muscular work. It has been found that the blood pressure in the athlete rises only to a moderate degree with extreme work, but in the untrained individual a similar elevation of blood pressure is reached with only half as much exercise. This stresses the fact that exercise is a potent means of elevating the blood pressure, and for the individual suffering from low blood pressure exercise is very valuable. On the other hand, when one has high blood pressure, strenuous exercise or any undue amount of physical strain may be disastrous.

This brings us back to the beginning of our story, that it is better to have your blood pressure checked and treated by the family doctor rather than by the man who lets you know about it at the booth in Ajax Market.



Blood Pressure Should Be Checked by a Reliable Physician.

BURNING YOUR CANDLE AT BOTH ENDS

A. V. Borosini, M.D.

SUPPOSE that we had a pair of scales which permitted us to put into one pan all the energy needed for the digestion and assimilation of a meal and the preparation of food remnants for elimination, and to put into the other pan all the energy which accumulates from assimilation of the elements of the meal. We should find that after a substantial breakfast the scales would for at least six hours dip toward the side where the energy needed for digestive work and the recuperation and re-charging of the organs of digestion is placed. Only after all this has been accomplished would the scales veer gradually toward the other side, and it would only be from then on that the assimilated food elements of that breakfast could contribute their quota to our daily work. In other words, no "good" meal—in fact, no kind of food—can give us immediate energy for the job at hand, as so many persons mistakenly think. On the contrary, every meal weakens the system for some time, until all the energy which was needed for its digestion has been replaced.

Why is it then that we feel refreshed and strengthened right after we have swallowed the first morsels of an eagerly awaited meal? It is not because this food has, by some magic, immediately changed into energy when it enters the stomach, but because it engages the gastric juice, which otherwise would continue to irritate the stomach walls and perpetuate the pangs of hunger which made us hurry to the lunch counter in the first place.

Yes, digesting and assimilating a meal is quite a job for the body. To do it properly, an enormous amount of blood must be diverted into the digestive tract and its auxiliary organs. This diversion may not be noticed (especially not by young people), but it takes place even after light meals, though of course to a much less pronounced degree than after heavy ones. That is why we feel like taking a nap after a heavy meal.

As long as food is in the stomach it seems especially desirable to go easy on routine work. Those who don't—and they are the majority of workers—surely burn their candle at both ends. How this is being done can best be made clear by a few examples.

When we lived in Munich "in the good old days," we used to spend an evening now and then at a well-known restaurant. We were always served by the same waitress, and we could not help noticing that she became steadily stouter and that it was increasingly difficult for her to carry the heavy trays.

One evening she told us tearfully that the management had given her notice because of her obesity and that she would be without a job the first of the next month. I told her to come to my house the next morning and we would talk things over.

Upon questioning her during the interview, I learned that she never had a free moment from 11 A.M. until late at night, and therefore could never eat her meals in peace. She often had to interrupt her eating four or five times because guests were calling, and, in order to get at least some food down "to keep her going," she had acquired the habit of gulping a snack here and a bite there whenever she could do so, always washing down the morsels with beer or coffee.

Being of medium height, 5 feet 4 inches, she should not have weighed more than 130 pounds. Instead, her weight had gone up to 180 pounds. That meant she had to carry with every step, besides the heavy trays and glasses, an additional and quite useless weight of fifty pounds. No wonder her heart had begun to trouble her. It not only had to furnish the energy for her strenuous work, plus the carrying around of her overweight, but was compelled in addition to pump blood into the digestive tract to take care of the frequently gulped food and beer. She realized full well that she could not continue her work; in fact she felt that she was near a breakdown.

I explained to her the folly of these numerous snacks and meals, the importance of proper chewing and peaceful eating, and the foolishness of so much beer and coffee drinking, with all the additional heart action it implied. I advised a very light breakfast. When I asked her what would be the time when she could sit down and really enjoy a meal, she answered, "Not before midnight!"

"Midnight it is," I told her. "From now on take your principal meal after most of the guests are gone. Eat very slowly. Don't wash your food down. If you get hungry during the day, consider it as a habit hunger and overcome it with as little food as possible." Of course, she was to eat more vegetables and fruit and was not to drink with her meals. That was in the last days of June.

Two days after that interview my family and I went to the mountains, where we stayed until the end of September. We did not visit that restaurant again until the end of October. When we came to our table, we were disappointed to be served by a waitress we did not know, but who was obviously anxious to win our favour. Because of our disappointment we may not have paid much attention, since it seemed evident that our old waitress had lost her job, after all. Suddenly, right in the middle of her serving, the "new" waitress burst into tears, and, looking at us reproachfully, said, "But don't you know me? I am Marie, your old waitress!"

We were astonished. It seemed like a miracle that this shapely, springy, good-looking woman should be our Marie. Of course, we had a good laugh over the misunderstanding, which made her realize more than anything else could have, how much she had changed for the better. This, by the way, also seems to have been observed by a prosperous Munich painter, who married her a few months later and to whom she bore four children in a happy marriage.

A similar case was that of an entrails buyer who came to me from Rosenheim in Bavaria. In those days the innkeepers in Bavaria had their pigs butchered in their own places, and this man went from inn to inn, on his bicycle, to "buy" the entrails from them to use in making sausage casings. The country which he had to cover with his wheel is quite hilly; but he, being of athletic build and almost six feet in height, did not have much trouble in getting over the hills.

I have put the word "buy" in quotation marks, because that was not really the transaction. These entrails were not actually sold. It was a favour to the innkeeper to have the trader call for them. In exchange for the innkeeper's favour, the trader was expected to stop in the inn and spend money for food and drink. These frequent meals, plus numerous Steins, soon had their effect. The man became stout and began to be short of breath. Cycling over the hills, especially soon after one of those Bavarian meals, or snacks, became more and more difficult.

Then one day, shortly before he came to me, his heart suddenly struck as he was going up a hill on his wheel soon after leaving one of the inns. Together with a terrific pain in his heart he had cramps in the calves of his legs, and had to be carried back to Rosenheim.

He recovered sufficiently within a week to come to me in Munich on the recommendation of a friend. It was obvious from his story that he had had the fright of his life, and, rather than go through such an experience again, he would give up his trade.

I explained to him that not only his overweight, as he believed, had caused his heart trouble, but the strenuous cycling, together with the digestive work, had been too much for his heart. The cramps in his legs had the same cause, namely, failure of the heart to supply them with enough blood while digestion was going on.

When we considered what could be changed in his way of living, in case he should go on with his work, he explained that to get the entrails it was absolutely essential for him to eat and drink and buy cigars in the inns. I told him that what the innkeeper expected from him was to spend money in his place, but that he was not in the least concerned about ruining the man's health by so doing. "Buy all the food and drinks and cigars you are expected to pay for, but let others eat, drink, and smoke, and be on your way again with an empty stomach. Eat your principal meal when you come home from your daily trip and fight stomach hunger by neutralizing the gastric juice with your saliva by chewing some prunes or liquorice or a piece of dry bread.

The man went home, probably much in doubt whether he ever would be able to mount his wheel again.

Three months went by, and, having heard nothing more from him, I dismissed the case from my mind.

Then one day, as I was returning home from a morning jaunt in the Englische Garten, I was greeted in front of our door by a man whom I did not know. It was the entrails buyer from Rosenheim. He looked years younger. He told me he had lost his stoutness by following my advice and that he felt wonderful. He had no difficulty whatever in continuing his trade. In fact, he said he was much more successful, for wherever he appeared not only the innkeeper but also the guests welcomed him, because both knew that he would spend money on them.

To the point also is the story of the Bavarian barrel swingers. These men were a typical Bavarian institution. They were the ones who had to handle the heavy beer barrels, each containing more than a hundred quarts of beer, in breweries and restaurants. Their special task was to lift these barrels and place them with a swinging motion on a special rack, to make tapping of them easier.

These men were usually more than six feet tall and of athletic build—perfect specimens of the human animal so to speak. They were well paid, and, besides their pay, were entitled to all the food they could eat and ten quarts of beer daily, provided they consumed it personally in the brewery or in the restaurant.

Beginning their day with a heavy meal, which always included meat, they ate their principal meal at midday and a heavy supper in the evening. Between these three substantial meals, they used to eat three or four "snacks," which would have been considered meals in themselves by any ordinary person. With these repasts, and before and after them, they gulped down quantities of liquid, a practice about which a relative of mine once said, "This is not drinking; it is irrigation."

Let the Scales Help to Decide How Much You Should Eat.

None of these men, endowed by nature with such wonderful physique, could keep his job after about his thirty-fifth year. None of them lived much past forty-five years. They usually died from heart ailments. Why?

The story was always the same. One day, at the moment when a man was swinging a heavy beer barrel on to a rack, his heart would go on a strike. Imagine the fright, to a seemingly perfectly healthy athlete, of suddenly getting a terrible pain in his heart and feeling himself void of all strength! True, these men soon recovered from the shock, but for a fortune they would have refused to lift a barrel again.

The brewers knew that this would happen sooner or later, and they usually gave the man an easier job, at less pay, of course. But there was still plenty of food for him and also plenty of beer; and so, without their former strenuous activity, these men continued to eat and drink precisely as they had done before. Their entire digestive apparatus was geared to these enormous quantities of food and drink, and the heart, not being overtaxed with heavy muscular work any more, had for the moment no trouble in providing the blood for these "athletic" digestive organs.

Soon, however, it became evident that these quantities of food and beer were entirely out of proportion to the physical activity. The men quickly became stout. Their powerful muscles degenerated into fat. So did the heart muscle (they had hearts like oxen), and after a few more years it was unable to carry the burden of that extra weight and do the strenuous digestive work.

When they were brought to the hospital on account of heart trouble, they simply would not listen when it was explained to them that they should restrict their diet and use of beer. They thought they were being starved and that they would die from thirst. Eating and drinking such enormous quantities had become a firmly fixed habit with them, and they died as perfect examples of wasted body economy.

(Editor's Note: While Dr. Borosini's practice has been carried on in Europe, where customs differ in many respects from those in India, the principles emphasized in the experiences he relates are of such general application that we feel sure his article will interest and benefit many of our readers.)

CAN SICKNESS
IN THE

HAROLD

AS FAR back as 1858 Dr. Thomas Watson in lecturing before students and physicians at King's College, London, remarked: "Very many diseases have a mental origin. Excessive intellectual toil—domination of violent passion—frequent recurrence of strong mental emotion—vicious and exhausting indulgences—each and all will sap the strength and grievously impair the health of the body; and perhaps there is no cause of corporal disease more clearly made out, or more certainly effective, than protracted anxiety and distress of mind."

Another classical statement, made by Dr. James Russell and appearing in a *British Medical Journal* for November 3, 1860, indicates that physicians of the previous century had a remarkably accurate concept of the influence of emotional factors on the general state of health. "Under particular circumstances, mental influence may become a direct agent in producing disease, and the cases attributable to this cause may be classed under two heads—those in which the morbific agent consists of an intense emotion suddenly excited; and those in which the mental emotion has been less powerful, but has been protracted in its operation."

A modern illustration of the way in which the mind may influence the state of health is the case of the engineer who worked for a railroad which had a regulation that no one whose blood pressure exceeded 160 could operate an engine. Knowing of this regulation and realizing that his status with the railroad depended, in a sense, upon his maintaining a reasonably low blood pressure, this man became so panicky that each time his blood pressure was measured, the readings were above 160.

There was good evidence that his pressure was not maintained at this high level, but that it was temporarily boosted each time the poor man came near a sphygmomanometre. His nervous system was so organized that the delicate mechanism which controls the level of blood pressure had become sensitive to his anxiety. His high blood pressure was, therefore, of the functional type.

Functional diseases are those for which there is no obvious cause other than an unfortunate mental state. Organic diseases are those which are produced by bacteria, viruses, physical agents, or metabolic disturbances.

This division of disease into the two categories of functional and organic, is quite arbitrary. Actually, every disease has both a functional and an organic component. A broken leg surely falls into the category of organic disease. However, the patient with a broken leg is not free from the mental effects of his accident. What is more, functional disease, which is supposed to represent an altered function of the organs of the body, will so upset these organs as to make them susceptible to actual organic disease.

The railroad engineer whose blood pressure rose each time a reading was taken was still in that "reversible" phase of the disease, which permitted his pressure to return to normal whenever his emotional tension was relieved. Should his emotional tension persist, however, he would eventually reach the "irreversible" phase, in which his blood pressure would never return to normal. Thus, there is basis for assuming that many of the so-called functional diseases, if persistent, will become of organic nature and will result in actual tissue alteration.

It is striking to observe how many diseases fall into the category of functional disease. The percentage of cases will, of course, vary from place to place, but it is now recognized that at least one third of all cases of illness originate as personality problems. The exact percentage is difficult to establish, for the reason that functional disease, if persistent, will bring about such changes within the tissues of the body as produce organic disease. Also, many organic diseases are complicated by functional elements so that the symptoms of the disease are definitely increased and perhaps altered by the patient's own mental attitude toward his illness.

A given case of functional disease need not progress until it becomes organic. The functional disease may be relieved and the symptoms disappear. Incidentally, it is characteristic of a functional disease that its symptoms appear and disappear quickly, usually in relation to some emotional factor in the environment.

One patient who had been worried for several weeks about the possibility of cancer of the bowel, had developed a series of symptoms which so altered the function of the bowel as to suggest a chronic difficulty. Upon being thoroughly examined by a physician and positively assured that there was no evidence of cancer, this patient's symptoms were promptly relieved. In fact, following her visit to the doctor, she remarked: "I feel much better since the examination."

It is often difficult to say that a case of illness is purely functional. Those forms of disease which embrace large functional components include such ailments as urticaria (hives), increased acidity of the stomach, spastic constipation, mucous colitis, some common forms of urinary disturbance, certain sexual disturbances as frigidity and impotence, certain forms of irregularity of the heart, and even some cases of asthma. Of course, increased acidity of the stomach may eventually become associated with peptic ulcer (an organic disease); functional irregularities of the heart may eventually predispose to organic disease of the heart; colitis may finally produce chronic changes in the tissues of the bowel; and functional asthma may lead to actual changes in the tissues of the lungs. So it appears that these diseases may be part functional and part organic. They depend in large part, however, upon causative factors which lie within the realm of the personality.

Many persons have found it difficult to understand how conflicts within the personality or how emotional excesses of one form or another can produce symptoms of disease. It is commonly recognized that one's emotional state may easily influence the functioning of his various organs. For example, fainting is often the result of fright, or the sudden knowledge of a tragedy. Blushing is a simple example of the effect that one's thoughts may have on the tiny blood vessels within the skin. The pallor which results from fright or intense anger also represents an effect of the mind upon the size of the blood vessels within the skin. In the case of blushing, blood vessels are dilated; in the case of pallor, blood vessels are constricted. Goose pimples may be produced either by intense cold or by emotional states. Palpitation of the

ORIGINATE MIND?

SHRYOCK, M.D.

heart results from emotional stimulation and normally occurs when an individual is so anxious over the outcome of an enterprise that he can "hear his heart beating." Trembling occurs, even in a perfectly normal individual, when he becomes excessively self-conscious.

Vomiting may be due to an ordinary episode of indigestion, but it is often aggravated by emotional factors. Children who have been through some exciting ordeal are more subject to indigestion and vomiting than those who have followed a quiet tenor of life. Intense fright or anxiety can even result in incontinence of either the bladder or the bowels.

Even though a person tries to retain his composure and understands that the effects of emotional stimulation are really accomplishing no good, he still finds it impossible to prevent these manifestations. "State board diarrhœa" affects the young doctor writing his state board examination as readily as diarrhœa affects the soldier who is taking part in an invasion. Headaches often follow a shopping trip, or an altercation, or some other experience during which emotional tension is high.

All of these effects are within normal limits, but they illustrate the sensitiveness of the various organs of the body to changes in the mental state.

The function of every organ of the body is controlled by the nervous system. When for any reason the nervous system is temporarily thrown out of balance by any emotionally tinged experience, the function of the organs will be altered. And these alterations of function, if persistent, permit the development of disease.

The organs of the body are controlled by a different portion of the nervous system than that which controls the muscles of the arms and legs. The organs are controlled by the so-called autonomic nervous system which functions unconsciously without direction from the conscious centres of the brain. So, normally, the individual gives no attention to the rate of his heartbeat. Even so the heart automatically beats faster in response to the added demands of exercise.

That centre of the brain which is responsible for controlling the autonomic system is spoken of as the hypothalamus. It is located nearly at the centre of the head and serves as a sort of thermostat centre to control the various automatic functions of the body. When the body becomes cold, the hypothalamus stimulates those processes of oxidation which provide for the increase of body heat. When the individual is in warm surroundings or when he has been exercising to the extent that his body heat has accumulated, the hypothalamus is responsible for the stimulation of the sweat glands so that perspiration is poured out on the surface of the body to provide for its cooling.

The hypothalamus also controls the water balance of the body so as to maintain an optimum dilution of all body fluids. The hypothalamus maintains a dominant control over the sexual cycle (more obvious in women than in men). In fact the hypothalamus exerts an influence over all the organs, glands, and blood vessels of the body; but it maintains this control by way of a dual nerve supply—one set of nerves to each organ stimulating it to greater activity, the other set reducing its activity. In health a delicate balance is maintained between those nerves which stimulate an organ and those which cause its function to be reduced.

However, it happens that the hypothalamus is also concerned with the production of emotional states. Its nervous connections are such as to cause it to be readily influenced by anger, anxiety, fear, pleasure, and any other of those states of mind to which the human organism is susceptible. As the result of emotional stimulation, the delicate balance between the two sets of nerves which control each organ is altered so that the function of the organ is either increased or decreased for the duration of the emotional state. When the emotional state persists for long periods, as in chronic anxiety or conflicts within the personality, the abnormal function of the organs also persists. Herein lies the basis for all forms of functional disease. Even the fatigue from continuous overwork can so deplete the nervous reserves as to initiate some form of functional disease.

Some have found it difficult to understand how it is that functional disease so closely imitates organic disease. As a matter of fact, the human body has a limited number of responses to insult. When the balance of the nerve supply to a given organ is altered, the alteration will produce symptoms which follow a given pattern. The symptoms will be about the same regardless of whether the insult is emotional, chemical, or bacterial. So, the symptoms of functional disease may be identical with those of organic disease.

Of course, there are individual variations in the degree of susceptibility to emotional tensions. There are some personalities which are so stable that the organs are scarcely affected by minor anxieties, grief, or the wear and tear of a strenuous programme. On the other hand, there are those less stable personalities in which even minor variations of mood are quickly responsible for changes in the functions of the viscera. The people with these less stable personalities are the ones who remark: "I won't make my plans for tomorrow until I see how I feel." Such a person's state of health is so dependent upon the whims of his emotional life that he may be greatly handicapped in his adjustment to everyday life.

A few years ago Drs. Wolf and Wolff, as reported in the *Journal of the American Medical Association*, Volume 120, page 670, made a very interesting observation on a patient who had sustained such an injury to his abdominal wall as permitted the doctors to see the lining of his stomach. They intentionally provoked in the patient certain emotional states of anxiety and hostility, meanwhile watching the mucosa of his stomach to determine what effect these emotional states would have. They observed that, in response to intense emotion, the lining of the stomach became so congested that small areas of haemorrhage developed just beneath the actual surface. What was more, the vitality of these haemorrhagic areas was so reduced that they quickly ulcerated when exposed to the acid secretion of the stomach.

This gives considerable insight into the reason why it is commonly said that the patient with peptic ulcer has a personality type all his own. Ulcer patients are typically aggressive, ambitious, and resentful of anyone who attempts to dominate them. In other words, they are the persons who live a high-tension type of existence to the

extent that that portion of their nervous system which controls the functions of their organs is thrown out of balance. And because the stomach is so susceptible to minor changes in its nerve supply, it is often the first organ which will show signs of the damaging effect of emotional tension.

Another evidence that peptic ulcers depend upon unfortunate emotional states is that such an ulcer readily responds to a change in the patient's way of life. Rapid improvement usually follows freedom from mental and physical exertion; but once the patient returns to his strenuous mode of living, the ulcer is prone to recur.

The idea that attitudes of the mind and emotional states have their influence on the general health is not a new idea, nor has the recognition of this relationship been limited to members of the medical profession. Our everyday language contains many expressions which suggest this relationship. "A pain in the neck" may be only a slang expression, but it is an acknowledgment that a physical symptom may result from a mental attitude of intolerance. When a person contends, "I cannot swallow that," he is using an expression that had its origin in the observation that a mental attitude of repulsion may give rise to such tensions within the body as to interfere with its usual functions. "Hard to stomach" is another expression that had its origin in a recognition of psychosomatic relationships.

One patient, when asked who it was that griped her, was shocked into the admission that her symptoms of colitis were definitely aggravated, if not entirely caused, by her contacts with one of her husband's relatives to whose support she had to contribute.

A person may be so constituted that his stomach is the first organ to produce symptoms in response to some unfortunate mental state. Another person may suffer from heart disease under similar circumstances. Still another may react to a similar situation by developing symptoms referable to his respiratory organs. But the principle is the same. Under the stimulation of abnormal and unhealthy thought processes, that organ of the body which (in the individual case) is most sensitive to nervous imbalance will become the focus of disease symptoms.

Even though functional disease may be produced by simple circumstances, it is amenable, when properly evaluated, to simple methods of treatment. Herein lies the most encouraging feature in the whole field of psychosomatic medicine. Even Shakespeare possessed insight into the happy possibility of the simple treatment of functional disease: "A body, yet distempered which to his former strength may be restored with good advice and little medicine."

IT'S IN THE BLOOD

LILLIAN F. STEMPEL

DURING the polio season, a fifteen-year-old was rushed to the hospital for what seemed to be a typical case of infantile paralysis. The girl had fever, severe muscle pains, tender limbs—outward manifestations suggesting the dreaded crippling disease. But a routine blood count, taken immediately after her arrival at the hospital, changed the picture of the case completely and erased the lines of anxiety from the faces of her parents. Inquiry disclosed that she had eaten frankfurters previous to her attack. What she had was trichinosis (a disease caused by eating infected pork).

A blood study is a very important clinical aid in an emergency, but it is much more than that. It has a great value in helping your doctor to determine your everyday health. Physicians are coming to consider a blood analysis a necessary part of the periodic examinations of every child, especially at certain stages of his development. As a pediatrician aptly puts it, the blood is a vital organ, and it should be examined regularly, just as are the heart, the lungs and other organs.

Blood, you know, is really a tissue, about 45 per cent solid, 55 per cent fluid. The solids are the red and white cells and the platelets; the fluid part is the plasma. This remarkable tissue, circulating along its passageways, assists in performing every function of the body—respiratory, nutritive, excretory, protective. Along the intricate canals of the plasma, the precious cargoes of food materials, reduced to their simplest forms, reach their destinations. In the plasma, too, move the hormones, mysteriously regulating the precious movements of the organs.

An average-sized man has from five to six quarts of blood in his body, with about 5,000,000 red cells to the cubic millimetre. The number of red cells in a healthy individual varies with the time of day, the state of physical activity, the atmospheric conditions. Your red cell count is lowest in the early morning hours, and grows larger throughout the day. It increases while you are doing your daily dozen or when you are up in an aeroplane.

The average life of a red cell is about thirty days. It originates in the red marrow of the bone and, after considerable wear and tear throughout the body breaks up in the blood stream. A million red cells are being destroyed every second and a million must be manufactured every second to take their places. A diet sufficient in iron has adequate building material for keeping up this continuous production of red cells in the body.

The hæmoglobin which gives the blood its colouring is an iron compound with a remarkable capacity for carrying oxygen. The quantity of oxygen carried to the tissues is dependent on the amount of hæmoglobin in the blood. In normal adults the hæmoglobin content should be from 80 per cent to 100 per cent, and in children from 90 per cent to 100 per cent of the usual values required for these age periods. Anæmia results when the hæmoglobin content is below these norms. Anæmia may occur at either end of the production line, being caused, on the one hand, by increased destruction of red cells, or on the other, by a slowing up in the process of their manufacture. Anæmias caused by destruction of red cells are those in which there may be a sudden loss of blood following an accident, or in which certain poisons, like lead or arsenic, have gone into the blood stream.

Nutritional anæmia, caused at the production end by inadequate iron in the diet, frequently goes unsuspected in children. Physicians look for anæmia during the periods of rapid growth. It may show itself in various ways. It may be present in the child who is listless, who doesn't feel like playing with the other children. It may be responsible for poor work in school. In a fourth grade class, a boy's reading comprehension suddenly dropped below the standard for that group. A physical check-up showed that he was anæmic. He was given iron tablets, and by the end of the term he had become more alert and his reading ability was rapidly approaching the levels set for his age and class.

A fourteen-year-old girl who couldn't catch her breath while she was swimming or riding her bicycle, accepted the situation as one of the necessary inconveniences of her rapid growth during adolescence. Her mother was certain

she had a heart condition, until a blood test showed she had anæmia. Her low hæmoglobin content was insufficient to supply her lungs with enough oxygen while she was engaged in these physical activities, so that she had to gasp for breath.

Anæmia often goes unnoticed, too, among children who live in sunny climates, whose skins are tanned all the year round, so that they always look healthy. A thirteen-year-old girl from Texas came to New York recently, looking robust and tanned to a golden glow. On her complaints that she became tired easily, her mother took her to a doctor for a physical check-up. A blood test revealed that she was profoundly anæmic, so much so that she had to be given blood transfusions immediately. It was a condition, the physician thought, that must have had its beginning at least a year before.

The first step in the prevention of anæmia is the examination of the mother's blood before the end of pregnancy. Iron is stored during the last three months of pregnancy, and there is usually a supply to carry the baby along for about sixty days. At birth the infant has a higher hæmoglobin count than an adult, but this drops to a low level by the third month. So, when your child is three months old, it is time for his first complete blood count, with emphasis on the hæmoglobin. This is particularly important in the case of twins or other multiple births, where there is certain to be a low hæmoglobin content because the mother's iron supply has had to be shared by more than one offspring.

A mother may unknowingly produce anæmia in her baby by giving him an exclusive milk diet. This often happens when the child refuses solid food and the mother is satisfied as long as he has his quart of milk a day. It is true that milk is a complete food, but it is deficient in iron. Your child's iron requirements for the day are five milligrammes; a quart of milk contains only one-half a milligramme. Let your baby acquire a taste for iron-rich foods early in life. Egg-yolk and liver are excellent for their iron content. Apricots, beans, oatmeal, prunes, spinach, beets, dates and figs are good sources.

The white corpuscles of the blood constitute the body's defence army. Nature's remarkable protective system is such that the white corpuscles increase to meet any incoming foe. The normal white count is from 6,000 to 8,000 per cubic millimetre.

A child may have an increased white count in unsuspected anæmia, rheumatic fever, and appendicitis. Your doctor determines the type of infection by the rate of increase in the white cells and by the type of white cell which predominates in the arrangement.

A child who bruises easily may have purpura, a disease caused by defective platelets or an inadequate number of them. The platelets are the small bodies in the blood which play an important part in the clotting process. Purpura may indicate an infection in the body or it may be caused by a drug. It sometimes occurs after any of the sulfonamides have been taken. Secondary purpura is cured when the cause has been eliminated.

How are blood studies made? The simplest is the matching test for hæmoglobin. The doctor just pricks your child's fingertip, takes off a drop of blood and matches it with standard colours indicating various percentages of hæmoglobin content. One busy pediatrician lets his anxious mothers do the matching for their own children while they are awaiting their turn in his office.

Hæmoglobin tests are made also with samples of blood in a tube. The newest method for determining hæmoglobin content is by means of electrical tests. A complete blood count means a calculation of the number of red cells, the number of white cells and a differential smear, which is a picture of the different kinds and proportions of white cells. Most mothers are familiar with the procedure of the nurse sucking up blood from the child's finger into a little tube. Along toward the middle of the tube is a tiny bulb which is a mixing chamber containing a fluid that destroys the white cells. The blood is diluted with the fluid in the chamber, and then a drop is put on the surface of a glass slide and a cover laid on. The slide is marked off into minute squares so that blood cells in a number of squares may be counted under the microscope. White cells are calculated in the same way, but the blood is diluted in the chamber with a fluid that destroys the red cells and leaves only the white to be counted on the squares.

The differential smear is used to determine which type of white cells is responsible for an increase in the general white count, in order to tell what specific infection may be present. A stained blood film is examined under the microscope, and the types of white cells are counted in a manner similar to the one used with the liquid drop on the marked slide. It is the proportions of each type of cell, as well as the total numbers, that tell the story; for in some infections, the proportions of the different types may be altered, even though no change may take place in the total white cell count.

The blood sedimentation rate is a good index of activity of infection, particularly in rheumatic disease. This test is valuable, too, for children about to undergo tonsillectomies. Tonsils are removed usually during the spring months when a child's resistance may be lowered by an infection continuing over the winter months, but not sufficiently active to change the white blood count. Any such infection would be shown by the sedimentation rate. Whole blood is drawn and placed in a tube. The rate of the descent of the blood cells to the bottom of the tube indicates the state of infection present. Curves of the test are taken. When a child has rheumatic fever, the sedimentation curve is made frequently to determine when the infection has subsided so the patient can get out of bed.

Your doctor may feel that it is wise to have a complete blood count taken when your child is three months old, when he is six years old and then in the early teens. These are the years of rapid growth when the shadow of rheumatic fever may hover. The hæmoglobin test is usually taken at each periodic examination. In addition, there may be special times when a complete blood count is needed. It is particularly important after a prolonged ill-

Vegetables Are Important Sources of Iron and Other Minerals in the Diet.

ness, especially if sulfa was given. If, however, penicillin is used, repeated blood studies are unnecessary since this drug has no effect on the blood. However, the necessity of administering it by injection represents a serious handicap in the case of children who dread injections.

Sulfa should never be given without permission of your doctor. A preliminary blood test before its use indicates the condition present and may help the doctor to determine how much of the drug to give. An examination of the blood afterward will show how it may have changed due to the drug.

Too much sulfa can cause both red and white cells to deteriorate. Sulfa can destroy red cells and inhibit their production; and it can depress the white cells, eliminating the granular type almost entirely.

A pediatrician who had two similar cases at the same time, was able to determine by a blood count in each case whether sulfa was needed. Both children were in the same age group, from three to four years; both had sore throats, both were running temperatures. When the blood count was taken, in one case, it showed a 30,000 white cell calculation. The physician prescribed sulfa immediately, and the child rapidly responded.

The mother of the other child was anxious to have the doctor give sulfa, though the little girl's throat was only slightly red. The physician had the blood test taken first, and since the count was normal, felt there was no need for sulfa. The child recovered in a short time without it.

Although periodic examinations should generally include blood tests, your doctor may not feel it is necessary each time he sees your youngster for a check-up. He should be the judge.

During a check-up for summer camp, a physician decided to omit a haemoglobin test when she saw her seven-year-old patient ready to make a scene. "I'm not going to have my nurse prick your finger today," she said to the surprised child, "because I don't think you need to have it done now. But I want you to promise me that when I think it's necessary, you'll hold out your finger very bravely." The little girl smiled with relief. "Yes, I will," she said, and kept her promise.

If you are one of those mothers who can't stand the sight of blood, try not to convey the feeling to your children. Drawing blood for a test is a simple procedure, but it can become a struggle between the nurse and the patient in cases where the child's resistance has been built up.

The mother who has learned to face situations calmly will not be alarmed and will not convey anxiety to her child, when the doctor feels that a blood count is necessary. She will know that her physician wants to check his diagnosis by a marvellous method science has given us, of reading health history in a drop of blood. And if the health picture revealed is not a favourable one, its very discovery will be the first step toward a turnabout to good health again.

* * *

"Learning is wasted if the heart does not guide it."

* * *

Jill: "How does your wife manage to keep slim?"

Jim: "She does her own cooking."

THINGS JACK FROST CAN DO

ERNESTINE HONATH

(Frost is not seen on the plains in India; but in the northern hills of India and in northern countries there is always frost in wintertime. This story tells of some things that frost does.)

KAREN fairly flew out of the barn one very cold day. "Daddy! Daddy!" she called. Daddy ran out of an adjoining building, where he had been gathering hidden hen's eggs for Mother. "Karen, dear," he exclaimed, "you look frightened. What happened, child?" Karen straightened her hat which had slipped to one side. "I heard queer noises in the barn, Daddy. There were the strangest creaks and snaps and other sounds." Daddy took her mittened hand in his. "It is foolish to be afraid of little noises," he said. "Do you remember how the dark used to frighten you?" Karen nodded, remembering. A less frightened look came over her rosy face. "When you realized that God watches over us in darkness or in light, you were no longer afraid," Daddy continued. "You will not fear these noises, either, when you understand what made them."

He led Karen right back into the barn. "Creak—cre-e-ak!" came a noise, close at hand. Karen's eyes were wide and she pressed close to Daddy. What could be causing those creaks inside the dark barn? "The noises you hear," smiled Daddy, "are made by an old friend of yours—Jack Frost!" "Jack Frost!" repeated Karen. "That's right, dear. You see, Jack Frost is making the wood of this barn very, very cold. When wood gets very cold it draws together a bit or shrinks. As it does so it creaks. The cold beams in this barn are shrinking—and creaking—this very minute." "Oh, Daddy!" laughed Karen, "how strange!" Daddy, however, was going on: "These creaks make us realize how much work Jack Frost does. He makes the branches creak, too, as they shrink. And he pulls so hard that unwanted, dead branches are snapped right off. In that way he rids the trees of limbs they cannot use and makes it easier for the other branches to grow."

"Really?" put in Karen, surprised. "He makes rocks shrink, too," Daddy continued. "As they do so, parts of them crumble. Those round pebbles you like to play with were once part of great rocks. Jack Frost crumbled them from the rocks, and the brook washed them round and smooth. When Jack Frost crumbles rocks very, very fine they become sand."

Karen had not known that and her blue eyes were bright with interest. "Cold crumbles and cracks the earth fine in your garden, too. It has great strength. Jack Frost can even break the big iron nails in our barn, and he often does. Perhaps that was all the strange, snapping noise you heard."

Karen's rosy cheeks dimpled into a smile. "How foolish it was to be afraid! Those noises were made by the cold shrinking the boards in the barn. And they should only have made me think, 'Jack Frost is working hard today. He is doing many useful things.' I shall remember that the next time I hear creaking noises in the dark."

THE LITTLE GIRL WHO BECAME GREAT

MARGARET LOCKE

"CLARA! Clara!" David's voice was feeble for he was very sick. He loved his mother and his father, who were very dear to him, but in this sickness he did not want anyone around but Clara. When she would leave the room, he would moan and sob and call for her. The doctors gave him different medicines, but none seemed to do any good.

Finally they all left, saying they could do nothing for him. Everyone else said David could not live, everyone but Clara. She stayed by his side and cooled his fevered brow and gave him nourishing drinks. She prayed that God would spare him. She did not give him up.

Clara stayed out of school to care for David. The fever raged a long time, but finally it broke and left him very weak. Still he did not improve as he should. Finally, after a year had passed, David's father heard of a doctor who treated in a different way. The doctor came and took David to his sanitarium and treated him, and the lad began to improve rapidly. How thankful the family felt, and how Clara rejoiced that she had held on and done all she could for David when the others thought it was too late.

Whatever Clara undertook she did well. She was a good student as a little girl, and then, when she became older, she taught. She was young when she started to teach, much younger than most teachers, but she did splendidly. She had a school that no one else had been able to manage, for there were four big boys who were determined to run things and drive out any teacher, man or woman, who came to teach them.

Clara had a different way of treating them than the others had. She played games with them and asked them very kindly if they would do her favours. She was so patient with them that she won them over and they became quiet and obedient pupils.

Clara learned that boys and girls in New Jersey, U. S. A., had no schools in which to learn to read and write and spell and do arithmetic. That, of course, was many years ago. There were a few schools but they were only for people who had plenty of money to pay their way. Clara felt that there should be free schools for the boys and girls among the poor, as well as for the children of the rich. People said she would never succeed, but she did. Her schools were such a success that many of the rich took their children out of

the schools they had been attending and put them in Clara's schools.

War came—horrible war. Clara was a little older now, and though she was still small and dainty, she had lots of determination. She could not bear to see men suffer and die on the battlefield without proper care. It was the time of the Civil War in the United States of America. She pleaded for a chance to do something, but her pleas were refused because she was a woman.

But she persisted, and finally she was given a chance to go and help the wounded. Many times her life was in danger. Once when she was giving a drink to a wounded man the cup was struck from her hand by a bullet. Another time a bullet tore her sleeve. She kept on bandaging the wounded, giving cool water to the thirsty, and comforting the dying.

She became the founder of the American Red Cross, which does so much to help suffering people when there is a great need. There never is a tidal wave, an earthquake, a flood, a war, or any terrible calamity but that the Red Cross nurses are there to do what they can for people.

Clara Barton made up her mind when she was a little girl that she would do something that would help poor, suffering people. She aimed high, and her name is honoured as that of a great and much-loved woman.

BILLY'S BIG LESSON

ELLEN M. STEWART

"BE SURE to wait for little sister, Billy. I don't like to have her go to school alone," said Billy's mother as he was leaving the breakfast table.

But Billy was a disobedient little boy, and a few minutes later he was stealing out through the side door to join a group of boys on their way to school early, that they might have time for a ball game before school started.

Billy's conscience bothered him several times, for he was not really a mean boy. He merely disliked having to do anything which interfered with his pleasures, and little sister was always causing him to do these things. Mother always wanted him to wait for her in the mornings, which he usually did in spite of the inclination to run off and play. But this particular morning the temptation to slip out through the side door and leave her to come alone had been too great, and eight o'clock found Billy on the playground, all flushed from running, waiting for his time to strike again.

Suddenly there were shouts in the distance and a jumble of noises made up of hoof beats and the rush of wheels, and Billy heard someone say: "A runaway."

Bats and ball were flung down, and there was a stampede of boys to the fence. They arrived just in time to see a pair of powerful horses, hitched to a heavy dray, galloping at breakneck speed. A group of men came running behind them, and as they passed, Billy's heart almost ceased to beat.

One of the men was talking, and what Billy heard was this: "They could not tell how badly she was hurt; somebody had better stop and telephone Thompson."

Billy gave a little cry and without a word was over the fence and running wildly. Somebody was hurt, and someone was going to telephone Thompson about it; and Thompson was Billy's father's name. It must be little sister!

Half way home Billy passed their old cow, Flossy, limping painfully along; but he never paused. His breath was coming in gasps. He ran on and on, sinking down on the home steps at last with a sobbing cry, afraid to go in.

Mrs. Thompson came hurrying to the door. "Why, what in the world is the matter, Billy?" she cried. "Little sister!" gasped Billy, "Is she hurt?" "Why, no," returned Billy's mother. "She's waiting for you to go to school with her." And then Billy followed his mother into the house and with tears of relief and joy told her everything.

"Poor Billy!" said his mother. "And you thought the horses had run over little sister?" Billy nodded dumbly. "It was Flossy. They just telephoned your father." "Oh, me!" said Billy. "Even Flossy isn't hurt much. I passed her as I ran home, coming this way. But I've learned a lesson Mother." And he was about to hug his mother joyfully, but just then little sister, all rosy and sweet, came tripping into the room, ready for school, and Billy rushed for her little satchel. "I'll carry your books after this, little sis," he said solemnly, for he had learnt his lesson well.

Novel Way of Aiding Europe's Hungry

"DEAR Sir: I read every word about the 'Friendship Train.' It proves without question the American people's desire to give tangible aid to Europe. For those who cannot hook a car load to the train, there is still the individual food parcel."

While thousands read such "letters to the editor" in their newspapers as this one in the *Washington Post*, the last of four freight trains with 250 cars rumble to a stop on the piers across the Hudson River from New York City. In the skyscraper gorge of Broadway, New Yorkers watched the forty cars of food they had donated move to the city's waterfront. On the Hudson River, cars painted "Vive la France" and "Viva l'Italia" floated on barges past the Statue of Liberty to boats bound for Europe. Whistles blew, fire-boats spouted; the port city gave its best to a friend and hero.

The hero was food. The friend was the spirit of voluntary action that had brought produce from every region, every nook and cranny of the country. The idea that had moved the "Friendship Train" 3,100 miles across the continent, had struck as profoundly an American chord as did the "letters to the editor"; it was the idea of giving voluntarily without Government edict, without prodding or pressure; giving for the sake of need.

How Food Was Collected

The train, starting in Los Angeles, November 8, was scheduled to collect eighty cars in all during its ten-day trek. But the story turned out differently. Far-off Hawaii contributed a carload of sugar. Los Angeles teamsters' union members collected food free of

charge. Telephone companies installed special "Friendship-Food" switchboards. Railroads ran the train without cost. In California's fertile Central Valley, the scene shifted from city to farm. At dawn in Bakersfield, a thousand watched a French war bride dedicate the community's gift—a car of wheat. Fresno children timidly handed over boxes of crackers and tins of baby food they had collected. In Oakland and Sacramento, thousands standing in line to donate money for the "silver car," cheered as yardhands hitched car after car to the train. Twenty-three cars containing dried milk, beans, peas, fruit, flour and sugar, rolled across the High Sierra.

For ten days, stop by stop, county by county, state by state, the train lengthened. In Rock Springs, Wyoming, not a scheduled stop, the people had cars loaded and made the train stop. Kemmerer, Wyoming, sent trucks a hundred miles to the train.

Time and again the story repeated itself. Each community had worked up its own programme. Religious, civic, labour, business and veterans' organizations, schools, and clubs, all gave, collected, served, and worked. "We keep running into freight cars we didn't expect," exclaimed the harassed train leader. Two sections, fifty-seven cars strong, crossed the Mississippi, barely half way across the continent.

In Chicago, Illinois, spontaneously formed trains had come in from the Northwest and the South. Three sections had to be dispatched on different routes to New York, each gathering car after car on its eastward travel. Railroad men, on the phone day and night, added ten cars from Buffalo, eight from Cleveland, a car here and a car there, splitting a train in Pittsburgh and arranging schedules for crews working without pay. Hardly had the four trains reached New York when another 120 wheat cars started rolling from Texas and Oklahoma while others were forming. Food from off-train regions kept moving through the mail.

Significance of Friendship Train

Nobody asked how much. Compared to the $21,500,000,000 spent for foreign aid since the end of the war, and the amounts to be spent from tax money till mid-1948, the "Friendship Train" counted little in material contribution; but its value in other ways was unmeasurable. To the average American it was a chance to show his readiness to join in a neighbourly deed, and his interest in foreign policy.

International as the train was in meaning and in fact, the Government had no hand in it. The "Friendship Train" was the people's own in origin and action.

Columnist Drew Pearson, whose nation-wide article had spark-plugged the train, rode it all the way. He thought the American people had found a way of doing something about foreign policy. He thought what he had seen from the caboose was the "American way of making democracy live."

Wrote a Wyoming school boy: "We are sending this food to Europe—less fortunate than we—because God put us on this earth to be neighbours and live in peace. We can do this best by helping our neighbours as best we can." —*USIS.*

THE DOCTOR

R. K. Narayan

MANY a boy at eight years of age dreams of becoming a locomotive driver, and at eighteen of becoming a doctor. The first ambition fizzles out very soon for obvious reasons, but the latter, the desire to be a doctor, persists till the rigours of admission to the company of the elect drives him away to the hospitable, if laborious, history and economics group. And then he spends the rest of his life looking back with a sigh upon this abandoned ambition.

Doctors ever remain a favourite subject with me. I can sense one a hundred yards off. How? Not through observing the irrepressible stethoscope, sticking out of the pocket—that anybody with a pair of eyes can do. It is not even by sniffing the air for the aroma of disinfectant that surrounds a doctor like an aura. It is by sensing something far deeper. The impress of a profession on a personality is something subtle and can hardly be described in so many words. It may be compared to the convoluted grain one sees on a seasoned teak plank. Such a pattern on a piece of wood is verily its autobiography: if only we could learn to decipher these patterns, we should read in them the story of the birth of the plank as a plant, its growth, its forest companions, and of the varied saps that it drew up from the bosom of the earth, and all the buffeting it has had from the capricious wind and weather, as it struggled upward. I find that this simile is growing out of proportion. I fear that I may spend the rest of this evening talking of trees! I had set out to speak of doctors, and this simile came to my mind. No other profession (except a musician's or an artist's) soaks so completely into one's blood as the medical. For example, a lawyer can afford to forget his clients and their bundles of paper when the court closes for the day. So also the engineer. He might be engaged in building the most complicated bridge, but he can set aside his scales and figures and play a game of cards without thinking of the matter for a while.

But not so the doctor. He is all the twenty-four hours a doctor, and all the days of the year a doctor.

There is no such thing for him as forgetting his profession. On the day he stepped into his college as a fresh medico, he set aside every other interest and the system completely enveloped him. He acquired the habit of leaving home when all others were still asleep. Spick and span he was off on his cycle meeting the rising sun on the way. Thereafter he cut up cadavers, listened to lectures, took down notes, watched at sick-beds, and returned to his room only to burn the midnight oil in the company of a bleached skeleton or a part thereof, with the mighty Gray's Anatomy on his lap. It was a life of unremitting labour. His home, domestic relationships, and the outside world in general, gradually faded out as something unimportant and made him generally a nonconformist, so that his behaviour in society did not always appear quite normal. I think it was Dickens who said, "Blasphemous as a medical student." The medico exhibits a contempt for the orthodoxies of life, he is sometimes inclined to be loud, and deliberately jovial and utters remarks calculated to shock elderly persons. But all such behaviour must be viewed indulgently, because it is more than balanced by the earnestness with which he pursues the study of medicine. If he shows indifference to ordinary people, he has a wholesome regard, bordering on terror, for his masters. Thus he spends five years.

His next stage: He steps out into the world full of hopes and plans. But his real troubles start only now. What was till now only an academic affair suddenly becomes an unmitigated reality. It was all very well standing behind the surgeon and watching an operation, or discussing the intricacies of Materia Medica in the dining hall; it was a different thing striding through the wards as a house surgeon and cross-examining the duty nurse—in all this the sick man was only a partial reality, an object of study or training, belonging to an institution. But now, whether he has hung up a board as an independent practitioner or whether he accepts a job in a hospital, sickness becomes a responsibility. When he finds the first tongue put out at him, he is, frankly, disconcerted. I have it on the confession of many medical friends that a normally sensitive young doctor is seized with a desire to run away when he is face to face with his first independent case. I have made deep and exhaustive inquiry into this matter, and it seems to be the invariable rule for the young doctor secretly to wonder if he is going to send his patient home alive at all. But it is a passing phase. It is only a question of time before the doctor understands sickness and humanity and his own place in the scheme.

He realizes soon that much of his day's work consists in keeping up his patient's morale. He must choose his words with care and deliver them with the necessary softness and nuance like an actor. "Oh, doctor, when will I be able to move about like the rest?" asks the cripple. And he ought to answer it he can afford to be blunt: "I'm not an astrologer, do you see? It may take years. Don't ask how many years, I don't know it any more than you do. It's Nature's secret." Well, he cannot afford to say this, so he answers with a lot of cheer in his voice: "Say in about six months you should be able to run about."

Sometimes he is urgently summoned by telephone to the bedside of a chronic patient. He feels the pulse, looks under the eyelid, taps the chest, and looks solemn, while he feels like crying out at the patient: "You fat-head! Nothing wrong with you. It would do you good to eat less; it would do you good to swing your arms and walk three miles a day or run as if a tiger were behind you. You should exercise this miserable body of yours. It would do you good to think less and less of your bank book. I see nothing wrong with you. The remedy lies in your own hands." But he knows he can never say so. Not that he is afraid to speak the truth. But he knows that his patient will not relish it. It may make him more ill, so he unscrews his pen and writes down a palliative, whispering softly: "Have a light diet. Avoid all excitement, and try to get as much fresh air as you can." He is in duty-bound to give every ailment a name and administer the appropriate medicine for it, otherwise he is in danger of gravely irritating his patients.

Axel Munthe mentions in his book how a certain disease called colitis was very much in fashion in Paris at one time and how he came near to being lynched by his fellow professionals as well as by his clients when he attempted to tell them that there was probably no such disease as colitis.

A doctor has to give the public what it wants, very much like a film producer or a popular journalist. A new fad becomes the rage in each season, and every sort of ailment must be traced to it. If I remember rightly, "calcium deficiency" came into vogue about ten years ago. You suffer from redness of the eyes. Well, it is due to calcium deficiency. If you feel cramps at your ankles you are again a victim of calcium deficiency. You suffer from defective memory or feel like heaving a stone at your neighbour—that is again calcium deficiency. You have only to begin: "Doctor, I have ——" You don't even have to finish your sentence before you are told: "I am afraid you are in for it. Take a lot of calcium. . . ." Calcium deficiency may reign supreme for a season and then give way to vitamin B deficiency. During cer-

tain seasons the doctors will declare a lack of vitamin B to be at the bottom of all the mischief. The patent medicine manufacturer keeps his ears alert and the label on his bottle promptly proclaims that it fills up the latest deficiency. There are other medical fads too. At one time many doctors of a more surgical turn of mind, used to believe that a race of supermen could be created by the removal of tonsils. If it was not tonsils it was some gland in the body. You just scissor off the impediment, and lo, you become radiant and long-lived. For such a doctor a human being seemed no different than a tree, shooting off clumsy, ill-arranged branches, which need drastic trimming. It speaks for the hardihood of the human race that it has so far survived every kind of experimental fad tried on it.

I can now hear my doctor thumping his table and saying: "You ingrate! What is this you are saying about us? Do you think we are unscientific quacks? How do you think you were saved when your septic throat took you to the edge of the grave? Who, do you think, pulled you out of pneumonia? Do you think you were saved by your own wit?"

"Oh, doctor, I am so sorry you feel hurt. I'm not referring to you. I'm sure you are very good in your own way. When there is any real crisis I know you will roll up your sleeves and prepare yourself for a real fight with disease and pain. With your sterilizer, needle, knife and bottle, you will step into the arena. I know, at such moments, it will be a fight to the finish—the last round. Either the patient or the disease must go. You will tax yourself to the utmost. You will forget food, sleep, home and your family. When you succeed in the end, you will feel a joy unequalled in the world. When you see your efforts prove fruitless you will show a resignation exhibited only by the greatest philosopher. You will pick up your bag and mutter before going: "We did our best," the saddest words ever to come from human lips.

Well, I'm not referring to you. As in other things, there are different types even among doctors. You, the family doctor, are a type as much as the champion of vitamin or calcium, and I have said nothing yet about the specialist. He knows more and more about less and less. Is that not the definition of an expert? A human being is just an ear or a bone or a heart to him. He can only tackle the jurisdiction of which he is the master and not a hair's-breadth beyond it. A story constantly occurs to my mind which I shall write down some day. It is a modern fable. A man went about with an excruciating pain, say somewhere between his left ear and eye. He was packed off to the eye specialist who probed and found that the pain was not within his scope and turned him on to an ear specialist. The ear expert declared the pain had nothing to do with his department and suggested perhaps he should consult a bone specialist. The osteopath found all the bones in perfect order and advised him to see a mental doctor. The latter kept him under observation and declared that the pain was the result of auto-suggestion, and advised him to train himself not to think of it; he also threw in a suggestion, just to eliminate the possibility, that he had better see a dentist and have all his teeth pulled out. Thus goes on the story of the sufferer. I have not decided how it should end, but I am sure if it is continued it will run into a long serial. Even then I may not be able to conclude it satisfactorily, unless perhaps a doctor come to my rescue.—*The Indian Medical Journal*, December 1947.

YOU CAN'T LIVE WITHOUT PROTEIN

KENNETH L. BROWN, M.D.

PHYSICAL examination of more than 50,000 school children has revealed that more than seventeen per cent were suffering from clinically recognizable malnutrition. Other studies—of hospital patients, pregnant women, sick people, and well people—have revealed startling numbers of starving persons. Even in the healthiest people, body tissues, which are largely protein, are constantly wearing out and being replaced with new tissue. The material for this replacement can be derived from protein alone—protein of the best quality, containing adequate quantities of the essential amino acids.

As with the vitamins, we can have borderline protein deficiencies in which it is difficult to point the finger at any obvious specific symptom of the dearth of protein in the diet. However, the physician is able to check the amount of protein in the blood and determine whether a deficiency of protein exists. Special tests can also be made of the urine, to determine whether the body is in proper protein balance.

When the diet provides more than sufficient protein to meet the requirements of the body, the excess is consumed in giving heat and energy or is excreted until the output equals the intake. It is not possible for the body to store any considerable quantity of protein, as the reserves of protein do not exist as a pool or reservoir from which the body can draw its protein needs.

It has not been until recent years that investigators have determined the vital role of the compounds which form the chief structure of protein—the amino acids. They provide the building blocks necessary in bodily growth, repair and replacement of tissues, and other important functions.

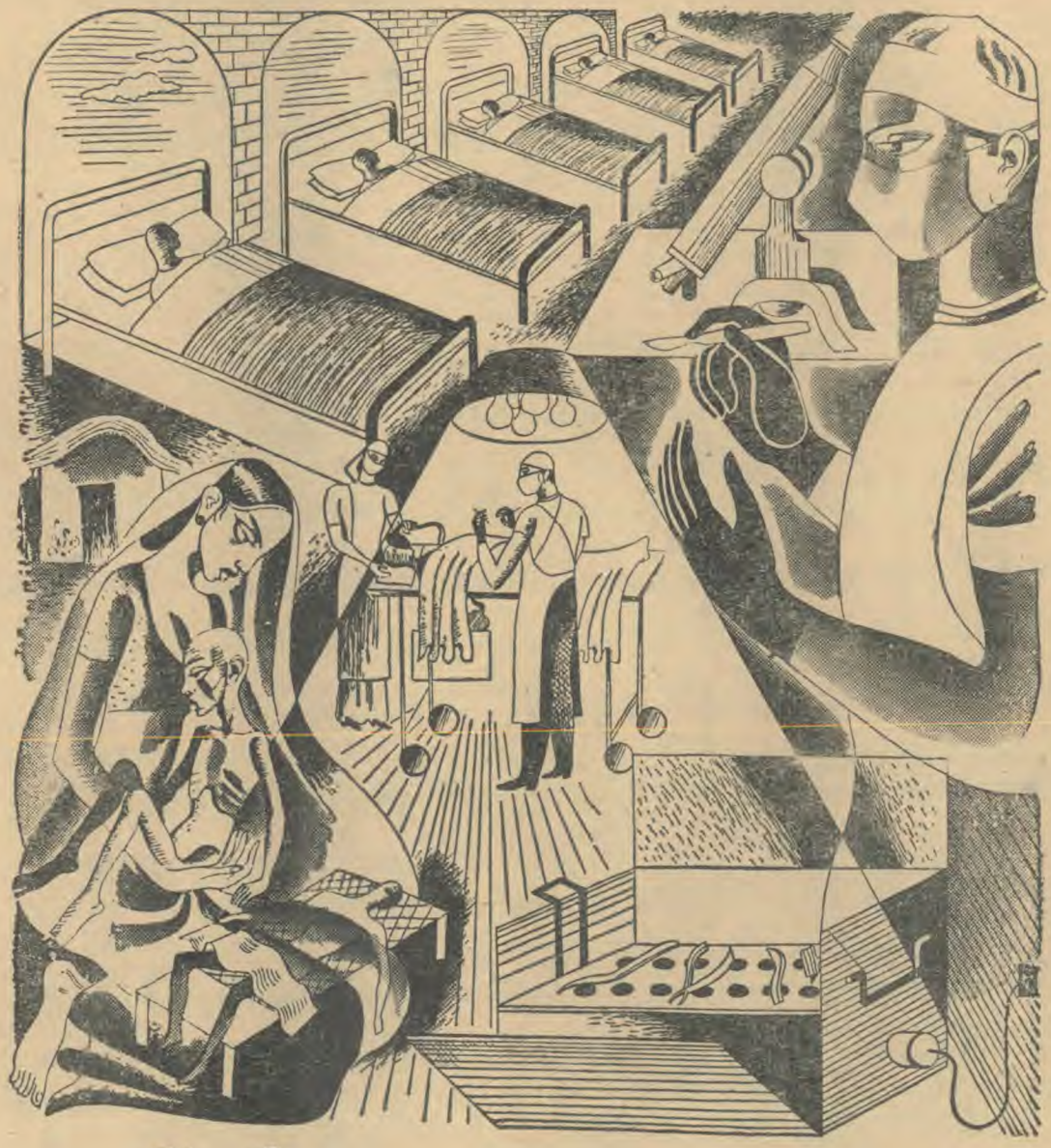
Of the twenty-three amino acids now known, at least eight are judged indispensable to normal tissue growth and optimal health. Their jaw-breaking names are lysine, tryptophan, phenylalanine, leucine, isoleucine, threonine, methionine, and valine, with two others, arginine and histidine, a doubtful additional two essential aminos. Because the body cannot make these amino acids from materials in the body, and because they are needed to construct new tissue, to provide muscle tone, and to regulate organs such as the thyroid gland and the liver, they must be obtained from our food. Chemists have succeeded in synthesizing or reconstructing a few of these essential amino acids, but only in small amounts and at prohibitive costs.

Measuring the Quantity of Protein

Persons suffering from protein starvation are liable to be susceptible to infection, and after injuries or operations their wound healing is slowed down. Blood clotting is better in patients with adequate protein blood levels. Ulcers, infections, œdema, stomach and intestinal disorders, and shock are much more frequently found in individuals who are protein depleted.

In burns the loss of protein is extensive. It is the major cause of death during the first forty-eight hours following an extensive burn. For this reason plasma or other quickly and easily assimilated protein sources are administered intravenously. After the critical period is over, proteins and amino acid compounds are administered in copious quantities in the diet.

In old people faulty digestion may prevent the body from properly using the protein of the diet. Lack of appetite, nausea, dental defects, or lack of teeth often cause inadequate intake of protein. Consequently, scientists have developed protein preparations which have been subjected to a process of predigestion. Now, in a flood similar to the deluge of vitamin products, a great number of protein preparations are being made. It is probable that the use of these protein preparations in overcoming low protein levels in the body will be counted among the recent victories of modern medicine.



Medicine. Providing adequate medical aid for the peasants and labourers is closely bound up with the country's material advancement.

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RECIPES

IMITATION MARMITE

1 cup boiling vegetable juice (tomato, celery or spinach, mixed); 2 cups thick brewer's yeast or dried yeast dissolved in water; 4 tablespoons Instant Postum dissolved in this boiling liquid; 5 tablespoons salt.

Cook all these ingredients slowly, stirring often until reduced to the consistency of paste. This paste keeps indefinitely and is very useful in the flavouring of soups, gravies, cutlets, etc. Only very little should be used at a time.

FAVOURITE VEGETARIAN PROTEIN FOOD

2 cups cooked red dal (cooked rather dry); 2 tablespoons chopped onion; 2 cups mashed potatoes; 2 tablespoons butter; ½ teaspoon sage, sweet marjoram or mixed dried herbs; 1 cup chopped nuts; ½ cup bread crumbs.

Place the onion, savoury herbs and butter into a small pan and saute for a few minutes to soften the onion. Mix this with the dal and the mashed potatoes; add the chopped nuts. Form into cutlets and dip in bread crumbs. Brown in a skillet until a light brown and serve with tomato sauce.

Tomato Sauce: 1 medium-sized grated onion; 1 medium-sized grated carrot; 2 tablespoons chopped parsley; ½ cup oil; 2 cups chopped tomatoes; salt to taste.

Boil all together for ten minutes and then force through a sieve. Return to the saucepan and bring to boiling point again. Add one tablespoon of flour previously browned and made smooth in a little water. If sauce is boiled down and of the right consistency flour may be omitted. While cooking, a little crushed garlic and jeera may be added, if so desired.

LEMON PIE

2 cups water; 6 level tablespoons cornstarch (or cornflour); 1½ cups sugar; ½ teaspoon salt; 3 eggs separated; 1½ tablespoons butter; juice of 2 lemons or 3 limes, and the grated outer rind of one lime or lemon; 1 baked 9 inch pie shell.

Bring the two cups of water to boiling point and pour gradually over the sugar, salt and cornflour, which have been previously blended. Stir briskly to prevent lumps from forming. Place this mixture in a double boiler and boil for ten minutes. Stir a small amount of the mixture into the beaten egg yolks and then add the eggs to the full mixture gradually, beating all the time. Return to the fire for three minutes but do not allow to boil. Add butter, lemon juice and rind. Beat thoroughly, cool, and pour into baked pastry shell. Cover with a meringue made by beating the egg whites stiff with one tablespoon of sugar. When this is spread over the pie, brown slightly on the top in a medium oven, taking care it does not burn. Enough for six persons.

PIE SHELL: 1½ cups flour; ½ cup butter or Dalda; ¼ teaspoon salt; 5 tablespoons cold water.

Mix flour and butter well. Add the salt and the water. Mix until a dough is formed. Roll out and put into a pie dish, covering the edges well. Bake in a hot oven until golden brown. Let cool before pouring in the lemon mixture.

NUT CHOPS

1 cup walnuts, chopped fine; 1 cup bread crumbs or cracker crumbs; 1 cup rich milk; 1 egg; 1 teaspoon savoury herbs; salt to taste.

Mix all ingredients together. Shape into patties and fry a golden brown on both sides.

COMBINATION FRUIT SALAD

1 small papaya; 3 plantains; 1 lb. seedless grapes; ½ cup orange juice.

Peel papaya, remove seeds and cut into small cubes. Peel and slice plantains. Wash grapes and remove stems. Mix all the fruit together and place in a fruit bowl. Sprinkle with sugar and cover the whole mixture with the orange juice.

THE DOCTOR SAYS

This question and answer service, free only to subscribers, is intended for general information. No attempt will be made to treat disease or to take the place of a regular physician. In special cases, where a personal reply is desired or necessary, it will be given if a stamped addressed envelope accompanies the question. We reserve the right to publish the answers to any questions sent in, if we deem them beneficial to our readers, though no names will be published. Address the Associate Editor (Doctor Says) "Health," Post Box 35, Poona 1, and make questions short and to the point.

COUGH AND FEVER: Ques.—"I have been suffering for the past year from fever and have also lost ten pounds in weight. I cough up a considerable amount of sputum and also suffer from insomnia and constipation. My skin hangs in folds like that of an old man. I am a bachelor and twenty-three years of age. Kindly help me and advise what medicine or tonic I can take to improve my health."

Ans.—Anyone who has a cough for over two weeks, is losing weight and feels feverish, should consult the best physician in his locality for a thorough examination and X-ray of the chest; for these are warning signs that you may be developing tuberculosis or some other disease.

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PREMATURE GREY HAIR: Ques.—"My hair began to grey prematurely when I was eighteen years of age and I am now twenty-eight years old. I received some treatment from a London hair specialist but this treatment had to be discontinued because of the war. I find my grey hair a great social handicap and am writing to ask you to prescribe an effective treatment for it."

Ans.—Greying of the hair, either prematurely or with age, seems to be a process over which man has no control. There is no medicine or treatment which will cure grey hair. Articles and notices declaring that science has found a cure for greying hair, appear from time to time in magazines and newspapers. Several years ago in an experiment, a substance was found which cured grey hair in rats, but many grey-haired people were greatly disappointed to find that this substance was not effective in changing the colour of grey hair in humans. The so-called cures advertised in the papers are best avoided. Dyes may be used but to be effective they must be used repeatedly.

COATED TONGUE; CERVICAL ADENTITIS: Ques.—"(1) A thick coating appears on my tongue in the early hours of the morning. I have been able to remove this with a tongue cleanser but after a couple of hours it appears again. My bowels function every day. Please tell me why my tongue becomes so coated and also what I can do to remedy this condition. (2) A cyst made its appearance on the right side of my neck and in two weeks' time had grown to the size of a tennis ball. The doctor made an incision in it and declared it to be tubercular cervical adentitis. I was admitted into a hospital for tuberculars, and after having my blood, urine and stools examined and my chest X-rayed I am told the results are negative. The cyst has now healed but is a little soft to the touch. I have been having slight pain around my ribs and produce a thick jelly-like sputum. Do you think other glands are affected and contrary to the results of the examination do you think it is tuberculosis?"

Ans.—(1) The most common cause for a coating on the tongue is constipation. However, it can also be caused by dietary indiscretions or by taking heavy meals late at night. (2) Cervical adentitis may be caused by a number of things and tuberculosis is a common cause. Usually more than one gland is involved. Surgery is often necessary and many times has to be repeated as new glands develop. Do not blame your surgeon if you have to have more than one operation for them. It is thought by many that tubercular adentitis is acquired by drinking infected milk. This is another argument for boiling all the milk for ten minutes before using it. This effectively kills pathological organisms which may be present. I cannot say whether any case is or is not tubercular. The diagnosis depends on the laboratory and X-ray findings.

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BUST DEVELOPMENT: Ques.—"I am nearing nineteen years of age and am very worried because my bust does not seem to develop at all. Please do not disappoint me but tell me of some good treatment which will improve my figure."

Ans.—In girls it is normal for the bust to begin to develop some time between the tenth and fifteenth years, depending on one's heredity and constitution. If the bust does not develop or develops only very slightly even though one appears grown in other respects, it is well to seek expert medical advice. In some individuals the lack of development is due to some lack of proper glandular function which can be remedied by proper treatment. However, this is a thing which requires proper medical guidance. One should not undertake to treat oneself by using any of the various "gland tonics" recommended in newspaper advertisements or by friends.

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YOGURT; MUSCULAR STIFFNESS: Ques.—"(1) After having read an article in your magazine on the value of Yogurt

in the diet, I desire to know from where I may purchase this commodity. (2) I developed muscular stiffness in my right shoulder in 1943. This stiffness went away for some time but has now made its appearance again. Is it possible to get Ketone treatment for this complaint?"

Ans.—(1) I know of no locality in India where Yogurt is at present being cultured. The curds usually prepared in this country are so similar to Yogurt that we are advising all our patients to use curds until Yogurt becomes available. (2) The Ketone treatment mentioned in our March of Medicine Department in October 1946, is still in the experimental stage.

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REMOVAL OF UNWANTED HAIR; PLASTIC SURGERY: Ques.—"(1) I have an excessive growth of hair on my forehead. Please tell me what to do to remove this hair permanently. (2) In the present communal disturbances my nose has been badly damaged, and as a result my face does not present a very pleasing appearance. Please give me the name of some competent plastic surgeon who could perform an operation to remove my facial defects."

Ans.—(1) There are various hair removers on the market. Some of them contain poisons which may seriously affect one's health. Others are very irritating to the skin. The most satisfactory method of removing unwanted hair is by electrolysis. This is a rather slow and tedious process and requires a skilled technician and a special machine. I am not sure that the method is available in India. (2) Plastic surgery is a special branch of surgery which deals with the correction of deformities, removal of scars, or reconstruction of lost or missing parts of the body. You can learn the names of those surgeons who are skilled in this work by writing to the registrar of the Medical Council in your province or to the secretary of the Medical Association in your city.

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ANAEMIA: Ques.—"I am thirty-eight years of age and my blood count is not up to standard. Please recommend a diet for me and also some other effective treatment for this deficiency."

Ans.—There are numerous causes for anaemia and each one requires different treatment. It would not, therefore, be fair if I suggested one at random for you. That is the reason this column does not attempt to diagnose or treat by mail. Our function is to advise and counsel. You should consult a physician as to what remedy is best suited to your needs. He may also suggest some special articles of diet for you, but in general the following foods should be taken every day by anaemia patients: 1. Two servings of a green and yellow vegetable and one other vegetable. Spinach, carrots, parsley and water-cress are particularly desirable. 2. One egg daily, the yolk being the important portion for anaemia people. 3. One citrus fruit, tomato or raw cabbage salad. 4. One other fruit. Raisins and apricots, either fresh, tinned or dried are particularly good. 5. Half a seer of milk or its equivalent in curds or cream cheese. 6. One serving of dahl, dried beans, peas or other legumes. 7. Three servings of whole grain cereals. Wheat, red rice, millet or other cereals prepared in any way you prefer, but if boiled, the water in which they are cooked should be used and not discarded. If these articles of diet are included every day, you may eat whatever else you like. It is well to omit highly seasoned foods.

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STOMACH ULCERS: Ques.—"A friend of mine said there was an article in one of the issues of your magazine on stomach ulcers. He cannot find the magazine and wants to know the name of the drug mentioned there which is now being used in the treatment of such disorders."

Ans.—Perhaps the article referred to by your friend was in our April issue. In that article the author mentioned the use of protein concentrates or amino acids as an aid in the treatment of some cases of ulcers. Stomach ulcers, as you probably know, are the result of a combination of causes which result in the stomach digesting a part of its own lining. Often the condition is associated with over-acidity of the stomach contents, and there is good evidence to show that an anxious or worried state of mind predisposes to, or actually causes, ulcers. Use of tobacco also predisposes to ulcer formation in susceptible individuals. Some authorities suspect that there is probably some vitamin lacking in most cases of ulcer, but I know of no experimental work to prove it. The modern treatment for ulcers includes the use of a great many acid neutralizers, some of which are quite effective. The success of these often depends upon strict adherence to a schedule, and also upon how well the patient is able to forget his worries. Surgery is often required. The amino acids or "protein concentrates" are only a useful aid in some cases. You should consult your physician as to whether it is desirable for you to try it or not.

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NEAR-SIGHTEDNESS; ENLARGED CALVES: Ques.—"(1) My sister is short-sighted and wears glasses. She also experiences an itching sensation in the corners of her eyes and has been using ointment

to remedy this. What causes her to be short-sighted? (2) This same sister would also have a perfect figure if the calves of her legs were not overdeveloped and appear to be out of proportion to the rest of her figure. Why should her calves have grown to this extent?"

Ans.—(1) Myopia or near-sightedness is a condition in which the eye is unable to bring distant objects into clear focus. Sometimes it is associated with some disease such as diabetes, but most frequently it is due to a refractive error in the eye itself. The proper treatment is to wear properly fitted glasses. If there is any suspicion of an associated disease, one should consult a competent physician. (2) If a person has enlarged calves but is otherwise healthy, no reason can be assigned except that God made them that way.

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LEUKORRHEA: Ques.—"What is the best treatment for leukorrhea? Can leukorrhea cause sterility?"

Ans.—Leukorrhea may be a simple thing that can be relieved by hot vinegar douches (one ounce of vinegar to one quart of water) taken every other day, or it may be due to some other condition. If this simple home treatment does not relieve the condition in ten days, one should have a careful physical and laboratory examination by a competent physician so that he can advise more individualized and specific treatment. Some of the diseases which produce leukorrhea do cause sterility, so the condition should not be neglected.

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OPIUM EATING: Ques.—"My father, aged seventy, has been using opium for the past thirty-five years. Whenever he does not take the drug he becomes tired and suffers from pains in his body. He seems to be quite healthy, but we want to know what to do to help him break this habit. (2) My wife has a small knot in front of her neck just below the chin. Can you tell us what this is?"

Ans.—Opium produces a false sense of well-being and relieves the aches and pains to which the body is subjected, but when continued over a period of time it enslaves the individual so that when he refrains from taking it he suffers from "withdrawal pains," and these pains cause him to resort to the drug again. Treatment of this habit requires expert and constant supervision; first to relieve the uncomfortable withdrawal symptoms, and second, to see the patient does not obtain the drug. You must consult the best physician in your vicinity and place your father under his care. (2) Swellings under the chin may be due to enlargement of the neck glands because of tuberculosis or infected teeth, or the enlargement may be a cyst of some type. In any case, the proper thing to do is to consult a surgeon who can advise as to its cause and tell whether surgical or medical treatment is necessary.

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HYDROCELE: Ques.—"For the past fourteen years I have suffered from shooting pains down my right side, which pains are particularly acute in my leg and foot. Because of this discomfort I feel like lying on the bed most of the time and have no inclination to do any desk work. In 1943 I underwent an operation for hydrocele of the right side but the pain is still persistent. I have pain on the left side also, but this is relieved sometimes by iodide injections. I am very keen on outdoor sports but hesitate to

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swim, walk, or take physical exercise freely, in case the pain will be aggravated by so doing. I am taking a vitamin B preparation on my doctor's advice. Please tell me what I should do to alleviate my suffering."

Ans.—The pain of hydrocele can often be relieved by wearing a scrotal suspensory. This can be obtained from a chemist's shop. Hydrocele is not made worse by walking or swimming. You need not avoid these exercises. For the cure of hydrocele, surgery is recommended. I would advise you to continue the tonic you are taking. Most of us do not get sufficient vitamins in our diet. You should include a good variety of vegetables, fruit, milk and whole grain cereals in your diet every day. As to the pain in your right foot and leg, I cannot ascertain the cause or treat it by mail. You should follow the advice of your physician in the matter.

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ORIENTAL WATCHMAN
MARCH SUPPLEMENT 1948

WILL ALLIANCES PREVENT WAR

AS POWERFUL as are the implements of present-day warfare, no nation feels adequate of itself to wage successful military action for complete victory. It must have the help of other governments to win. It cannot be the all-powerful "lone wolf"; it must run in the pack with other assisting powers.

This need for concerted international action is as evident in defensive conflict as it is in offensive. To protect itself against the assault of another hostile power or powers, it cannot afford to stand alone. Feeling this insecurity, it must yoke up with other countries for a common regional protection. Are not the statesmen of the Kremlin telling us that Russia must associate itself with the lesser powers in Eastern Europe for defensive purposes?

Even with the atomic bomb we are told that the smallest nation, if the possessor of this death-dealing instrument, can assure itself of victory; yet we have not ceased to hear about groups of nations being obliged to band together to oppose other groups. There must be an Anglo-American alliance in the West, it is claimed, to meet the growing challenge of the Soviet-Slav alliance in the East.

In this age-old habit of nations to join themselves together in alliances, leagues, and ententes, we have another potent cause for war, another evidence of the utter futility of entertaining any hope of permanent world peace. Reflection will at once reveal that this very allying of powers can produce only the seeds of suspicion, hatred, and hostility. David Lloyd George was right when, at the end of World War I, he observed that the tragedy of modern warfare is that no nation coming out of it learns how to avoid it.

When Germany, Austria, and Italy formed the Triple Alliance, did this formation hold back the forces of strife as the leaders of these governments fatuously supposed? No; it only aroused to higher pitch the fears of England, France and Russia, with the resultant World War I. When again, Germany, Italy, and Japan allied themselves, did this provoke peace? It did not! Yet we have not learned the lesson, if news reports are at all reliable. New "blocs"

are already forming, to be new foci of irritation and hostility.

Governments need to heed the prophetic warning of Isaiah: "Associate yourselves, O ye people, and ye shall be broken in pieces; and give ear, all ye of far countries: gird yourselves, and ye shall be broken in pieces; gird yourselves, and ye shall be broken in pieces. Take counsel together, and it shall come to nought. . . . For the Lord spake thus to me with a strong hand, and instructed me that I should not walk in the way of this people, saying, Say ye not, A confederacy, to all them to whom this people shall say, A confederacy; neither fear ye their fear, nor be afraid." Isaiah 8:9-12.

Secret diplomacy is another fruitful cause of war. "Open covenants openly arrived at" may be a shining ideal, but there is too much suspicion, lack of confidence, and jealousy among the countries of our world to make this possible. So long as selfishness is the supreme dictator of national policy and practice, so long as every nation is bound to work out its own will and way regardless of the wishes of other nations, there will be this secret diplomacy that is tricky, deceptive, and half-truthful, if not directly dishonest.

Can there be any wonder that the backlog of covert international operations results in bitter hostility? How can we attain international peace until nations are willing to be forthright in their relations one with another? The very concept of peace demands the removal of all those selfish reservations that the governments of earth cling to in order to effect their own schemes to the detriment of other powers.

The last cause of war that we shall take the time to consider is of racial minorities. Were this whole world peopled, say, by the Russian race, it is conceivable the world might reach a state of permanent peace. The one language, the one tradition and way of life would make the way easy for universal concord. But so long as there are Poles, with their language and tradition, Czechs with their language and tradition, Magyars, Finns, and many other racial minorities in Eastern Europe, there will be no permanent peace. There may well be an enforced peace, lasting as long as the Kremlin is powerful enough to hold the smaller people in subjection; but once let the governmental lid be removed, and the strong national patriotism of these racial groups will assert itself. And so long as these minorities are with us, just that long there will be no world peace.

What is going on now in India and Java ought to make this lesson plain. Put with this racial unrest the added factor of the rising assertiveness of the coloured races of the world, with their insistence that "white supremacy" must come to an end, and the picture is complete.

Here again we perceive that remarkable insight of the Bible, where we are told that in the coming kingdom of Christ, to be established at His second advent, "*the leaves of the tree were for the healing of the nations.*" Revelation 22:2. What all our talk and endeavour toward human freedom and democracy now is failing to accomplish in the brotherhood of man and the fellowship of all nations, tribes, races, and people, will then be consummated in the spiritual government of the redeemed.

WILLIAM G. WIRTH

FEARFUL POWER

DALLAS YOUNG

WHEN God created the elements of the earth He made them of atoms, minute creations so small that if a drop of water were magnified to the size of the earth each atom would be considerably smaller than a baseball. When the atom was discovered a few short decades ago it was so named because it was thought to be non-divisible. However, the world has learned to its sorrow that such is not the case. The atom may be divided (split), and in the dividing of it is obtained the power, the explosive force, that has brought fear and trembling to the hearts of world leaders.

The atom is composed of a nucleus or central core in which are particles called protons and neutrons. Revolving about the nucleus, as the planets of the solar system revolve around the sun, are the electrons. The proton carries a positive charge of electricity, the electron carries a negative charge which exactly balances the proton. The neutron is negative, which makes the atom itself neutral. It is seen that the elements of the earth are not as they appear: Atomic motion pervades all creation. In fact, the law of motion seems to be the first law of the universe.

There are ninety-two known elements. Their atomic construction is very simple, depending upon the number of protons in the nucleus. Hydrogen stands as the number one element, having but one proton. When God made helium He simply added another proton. Carbon has six protons in its nucleus, nitrogen has seven, oxygen eight, and so on to uranium, which has ninety-two.

The particles which compose the atom appear to be the smallest component parts of creation. God, in fulfilment of Daniel 12:4, has allowed men to delve into the mysterious force and power which He locked up in the bosom of the atom at the time when "He spake, and it was done." The power contained in the atom is almost incomprehensible. We are told that only a small fraction of the power of the uranium atom has to the present been released, yet the experimental blast in the New Mexico desert completely dissolved the steel tower upon which the bomb was suspended. The desert sand for a distance of four hundred yards around was melted into a jade-green, glass-like substance.

In his book *Dawn Over Zero*, William Lawrence tells us something of the atomic power contained in the elements which we handle daily. Says Mr. Lawrence: "Translated into terms of pounds and kilowatt-hours, this means that one pound of matter contains the energy equivalent of 10,000,000,000 kilowatt-hours.

"If this energy could be fully utilized, it would take only twenty-two pounds of matter to supply all the electrical power requirements of the United States for a year. One third of a gramme of water would yield enough heat to turn 12,000 tons of water into steam. One gramme of water would raise a load of a million tons to the top of a mountain six miles high. A breath of air would operate a powerful aeroplane continuously for a year. A handful of snow would heat a large apartment house for a year. The pasteboard in a small railroad ticket would run a heavy passenger train several times around the world. A cup of water would supply the power of a great generating station of 100,000-kilowatt capacity for six years.

"One pound of any substance, if its atomic-energy content could be fully utilized one hundred per cent, is equivalent in power content to 3,000,000,000 pounds of coal, or 1,500,000 tons." Page 23.

It is a little more than two years since the world became atomic conscious. As the news of the bomb-bursts that dissolved the two Japanese cities came, thinking people realized the significance of the dawn of a new, fearful, and wonderful age. Here was power that, rightly used, would do the world's work. But on the other hand, this power in the possession of selfish men and nations might well mean the destruction of the race. Men became fearful. Scientists who helped to develop the bomb became evangelists in their efforts to bring about some kind of control. Dr. Harold Urey said: "I am a frightened man myself. All the scientists I know are frightened." And again he said: "I am still a frightened man. The gravity of the world situation is frightening beyond words to express. Civilization has been brought to the brink of the precipice."

H. G. Wells, British historian, said before his death: "The world is at the end of its tether. The end of everything we call life is close at hand and cannot be evaded. . . . There is no way out, or around, or through the impasse. It is the end. . . . A series of events has forced upon the intelligent observer the realization that the human story has come to an end."

In the past two years we have witnessed the fulfilment of Luke's prophecy of the last days: "Men's hearts failing them for fear, and for looking after those things which are coming on the earth: for the powers of heaven shall be shaken." Luke 21:26. Without doubt the world has never in its history passed through a period when men faced the future with so great a degree of uncertainty. Heretofore at the close of a war people have felt more or less secure, but of course the ancients did not have the threat of atomic explosions. Today fear haunts the hearts of every household. We are continually being told that this is the end. Robert M. Hutchins, chancellor of the University of Chicago, thinks there is not much use in sending children to school any more. Said he: "Devoting our educational efforts to infants between six and twenty-one seems futile" because "the world may not last long enough" to give them training.

Effort after effort has been made in the two years since the close of the war, to bring the nations to agree on the terms of peace—all have failed. While in most nations we do not today hear the thunder of guns and the exploding of bombs, yet we are in the midst of a war nevertheless—a political war which may certainly end in a shooting war. Two great powers occupy the stage of the world's theatre. Soviet Russia with her satellites are the actors in the eastern theatre; while the United States, with her tremendous industrial capacity and the atomic bomb, occupies the western theatre. Russian leaders are moving along the lines of world domination and communistic indoctrination. In the light of this, conflict appears inevitable.

One Year After the Bikini Experiments

Life magazine for August 11, 1947, tells us something of what was learned in the Pacific blasts. There is much to the report, and none of it good. The last two sentences of fourteen pages of pictures and stories are gloomy indeed: "The only defence against atomic bombs still lies outside the scope of science. It is the prevention of atomic war." It is clear to the present time at least that science has presented the world with an uncontrollable agent of destruction.

For military reasons we have not been told much of what took place at Bikini. Here is a paragraph describing the under-water explosion: "Test Baker was set for 8:35 a. m. on July 25, the bomb suspended in the water

below the LSM-60. At the instant of detonation a great luminous dome welled up from the lagoon, the LSM-60 perched jauntily on top of it. A pillar of water rose a mile in the air and a billowing cloud rushed out from its base, drenching all but a few of the ships with a poisonous radioactive spray. Nine ships were sunk and eight seriously damaged."

We are astounded at a power so mighty that it can hurl a shaft of water a mile into the sky in the matter of seconds. The picture shows great battleships anchored nearby as minute things in comparison with the huge column of water. We are told further that if all the ships at Bikini had been fully manned, 35,000 people would have been killed. Those not killed by the explosion itself would have been killed by the radioactive spray which deluged the ships.

"On Able Day," according to the report, "the ships bore 3,030 rats, 176 goats, 147 pigs, 109 mice and 57 guinea pigs, distributed about the decks, cabins, pilot-houses, engine rooms, and gun turrets.... As expected, some of the animals were killed outright by the heat and blast of the Able Day bomb. Others died later from the various effects of the bomb's radiation: shock, internal hæmorrhage, and infections following the destruction of white blood cells. About half of the animals survived to be brought back to the U. S. laboratories for further study." However, many of those brought back have now died from the effects of radioactivity. The ships that survived, we are told, will be radioactive for years.

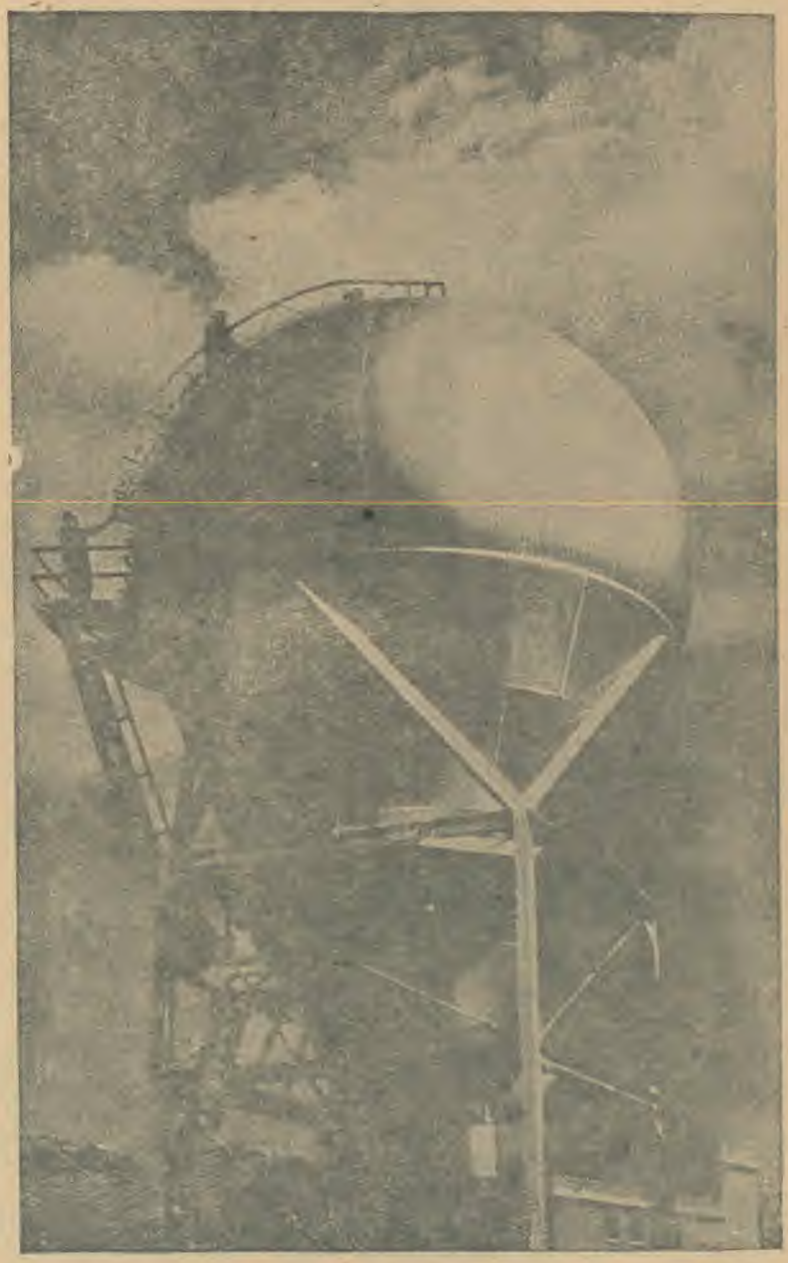
The Elements Dissolve

The God who created the atom-composed elements which make up this earth has foretold their dissolution when Christ comes the second time: "The day of the Lord will come as a thief in the night; in the which the heavens shall pass away with a great noise, and the elements shall melt with fervent heat, the earth also and the works that are therein shall be burned up. Seeing then that all these things shall be dissolved, what manner of persons ought ye to be in all holy conversation and godliness, looking for and hasting unto the coming of the day of God, wherein the heavens being on fire shall be dissolved, and the elements shall melt with fervent heat?" 2 Peter 3:10-12.

It appears from this that the God who made the atoms in the beginning will, when the time comes, do some "atom-splitting" Himself. We are living in times that are unparalleled in their gravity. Jesus, looking down the centuries, saw these days and foretold that men's hearts would fail them for fear.

The outlook, however, is not wholly dark. Jesus gave us the bright side in the next verses: "Then shall they see the Son of man coming in a cloud with power and great glory. And when these things begin to come to pass, then look up, and lift up your heads; for your redemption draweth nigh." Luke 21: 27, 28.

The present condition of fear is a signpost showing us where we are living in relation to the second coming of our Lord. We are told to "look up" when these things begin to occur—the Lord's coming is near. "Your redemption draweth nigh." Jesus will fulfil the promise He made to His followers so long ago—the promise that He would come again and receive them unto Himself. It is time now to make immediate preparation to meet Jesus in peace when He comes. A moment of time, as it were, remains—why not use it wisely in getting ready to meet the inevitable?



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THE SUNSET OF CIVILIZATION

A. S. MAXWELL

IT NOW seems to be the general belief of scientists that the most catastrophic effects of an atomic bomb are not in the force of its blast, but in the destructive qualities of the radioactive particles disseminated by the explosion. Some experts in atomic energy have expressed the opinion that if one hundred atomic bombs were to be dropped in the middle of Siberia—or a lesser number with greater power—the operation might well lead to the ultimate destruction of the entire population of the Northern Hemisphere. Radioactive particles, released in the upper atmosphere, would spread for thousands of miles, with disastrous consequences to people living even at immense distances from the scene of the original explosion.

Commenting upon this possibility, Stephen King-Hall recalls that in the 1880's a volcanic explosion took place in the Dutch East Indies of such enormous intensity that dust therefrom travelled over the greater part of the world, causing everywhere a magnificent series of sunsets. "The radioactive forces mentioned above," he says, "are quite capable of causing the sunset of human civilization."

No one who has studied the effects of the atomic blasts at Bikini, Hiroshima, and Nagasaki will consider the foregoing a remote possibility. The fact is that man, in his zeal for knowledge and his lust for power, has stumbled upon a way by which he can destroy himself. He has reached out his hand and touched the basic secret of the universe, and he has discovered that it is a dangerous and deadly secret without the knowledge of omniscience and the power of omnipotence to control it.

Whether or not man will succeed in destroying himself, utterly and completely, is a question openly debated today. The possibility of the depopulation of the globe through the atomic fission of carbon or hydrogen, or the slow destruction of the human race through the dissemination of radioactive particles, is one of the grave fears that haunt the minds and hearts of men. Because of it they are sure that the sunset of civilization is at hand.

Only the Bible can throw light upon this dark and dreadful picture. And when we turn its sacred pages and study its great prophecies, left on record "for our admonition, upon whom the ends of the world are come," we learn that, while the last days of human history will be marked by tremendous upheavals and frightful disasters, some of them no doubt man-made, the end will actually come about not through some atomic explosion, but by the revelation in glory and power of Jesus Christ. This is obvious from the words of the Master: "Then shall all the tribes of the earth mourn, and they shall see the Son of man coming in the clouds of heaven with power and great glory."

Civilization's sun will by that time have set and great darkness will cover the earth, but there will still be multitudes left to look up into the sky to see the returning Christ and mourn because they are unready to meet Him. Among them will be many who have remained loyal and true to Him and kept themselves "unspotted from the world." For these "He shall send His angels with a great sound of a trumpet, and they shall gather together His elect from the four winds, from one end of heaven to the other." Matthew 24:30, 31.

This will mark "the end of the world," in the Biblical meaning of the phrase. It will be sunset and night for human civilization; but, thank God, for all who have loved Him and sought to do His will, it will be sunrise and a great new day.

Sunset on the Sea. But When the Sun Sets on Present Civilization It Will Not Rise Again.