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PATRIOTIC?
THEN SHOW
IT BY YOUR
WORKS

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GROW MORE
FOOD AND HELP
YOUR COUNTRY
IN THIS TIME
OF DISTRESS

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PLANT A
VEGETABLE
GARDEN!

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EDITORIAL

MORE FOOD

"FOOD" has always been a "must," as our American friends say, but even so, perhaps some people do not give the subject generally as much attention as they should, at least, not until it is placed on the dining table.

There are, of course, those who "live to eat," rather than "eat to live" (even rationing may not altogether curb this propensity)—but perhaps most of us pay scant attention to the subject of food believing that the meal will be along on time, somehow or other.

We are now being somewhat rudely shocked into the knowledge that the production of food is not altogether "automatic." It is true, that God "makes His sun to rise on the evil and on the good; and sends rain on the just and on the unjust" but sometimes, for reasons best known to Himself, He allows a different condition to prevail. When the clouds withhold their rain and "the skies are as brass," all the gold in the world will not purchase the food that the good earth has not produced.

To ask "What is food?" may sound like a ridiculous question; nevertheless, when we stop to analyse the meaning of the word we may help ourselves to a better understanding of how to use it, and in what quantities and kinds and when. For all practical purposes there are two main functions of food—in the first place, as a provision for the growth and repair of the fabric of the body; and, secondly, as a source of potential energy which can be converted into heat and work. Substances which do not contribute to either of these functions cannot be truly regarded as foods, although, of course, they may be desirable or even useful adjuncts to the dietary. For instance tea and coffee are not foods. On the other hand ice-cream—as witness the recommendation of the United States Army chiefs, is an excellent food.

For millions in many lands, however, we have unfortunately reached the place where it is not a matter of "pick and choose," but rather a vital struggle to get a little,—not indeed to "fill the stomach," but to ease its craving to some extent.

When it comes to "filling the stomach," there is, of course, more to it than that,—what is the stomach to be filled *with?* From that consideration, we observe, emerges the matter of *calories*, which is nowadays a very busy word. Certain foods have more than others of these calories, (which we might term "standards" for estimating the energy value of foods.)

Obviously, a little care in the selection of the kinds of food we eat may prove to be very profitable in many ways—indeed, it may become a way of escape in times of scarcity. That is to say, there are some people who for centuries have been accustomed to a certain diet, and that diet often consisting of practically one article only. For more reasons than one that is a very unfortunate state of affairs. For instance, there are millions in India who subsist on a rice diet,—practically that one article alone. In times of scarcity they suffer severely as they have not the ability (and often not the desire) to adapt themselves to a new diet, even although it may be available. This point is one that should be borne in mind by the new government when it comes into power; for, while a foreign government might experience great difficulty in educating the people to better and more profitable food habits a government "of the people" ought to be able to accomplish something tangible.

In speaking of rice as a diet there really ought to be a good strong campaign to enlighten the millions in regard to this article. It should be borne in mind that no one article of food contains the different nutritive constituents in proper proportions. Some foods are too rich in protein; others contain too much carbohydrate and fat. The former statement is true of all animal foods and amongst the vegetable foods, of such articles as dried peas, beans, and lentils. Most other vegetable foods on the contrary, of which bread and potatoes may be taken as types, contain an excess of carbonaceous constituents.

Obviously, then, the proper diet will be a mixed diet, wherein the excess of a particular element in one article of food will be balanced by its deficiency in another.

Speaking more particularly of rice, it is the poorest of all the cereals in proteid, fat, and mineral matter. Rice has fully 76 per cent of starch. This starch is found in small and easily-digested grains.

When boiled, as is well known, rice swells up and absorbs nearly five times its weight of water. Some of its mineral constituents are lost thereby.

Courtesy N. Cooper, Seedsman, Poona.

Boiled rice has the following composition:

Water	52.7 per cent
Proteid	5.0 per cent
Fat	0.1 per cent
Carbohydrates	49.9 per cent
Mineral matter	0.3 per cent

Obviously, a diet which shows such a lack of proteid and fat is a poor diet. It is not adapted to be an exclusive diet. Rice should be fortified with eggs, cheese, or milk. Even to provide the daily carbohydrate need of an active man a daily consumption of about five pounds of cooked rice would be needed.

It is encouraging to note that the use of peanuts (groundnuts) is being advocated. This food is high in nutritional value, as also is the soy, or soya bean.

Then there are the vegetables. Millions in India do not get the vegetables they need. Vegetables are noteworthy for the large proportion of carbohydrates which they contain; but they also contain proteids and fats as well. In fact, vegetables, more than all other classes of foods, contain the greater representation of nutritive substances. In other words, if one should confine his diet to only one "kingdom," that of the vegetable kingdom would be preferable. One could live well and healthfully on vegetables (including fruits) indefinitely; whereas it would be difficult to live for any length of time on meat alone.

We could probably all of us do something in the line of growing vegetables,—some could do a great deal. Certainly it would be a good and patriotic work to begin to grow a vegetable garden. There are many people who would profit physically and psychologically if they should spend an hour or so each evening in the growing of vegetables. Even although we may not expect to subsist entirely from the products of our backyard garden, we might well provide ourselves with fresh vegetables that would be a pleasant change, a valuable help, and a good step toward conserving supplies that might be needed by others. And when we speak of *fresh* vegetables, let us bear in mind that vegetables that are *not* fresh have lost most of their food value, and may not even be worth purchasing. How nice it is to go out into the garden and bring in a good collection of really fresh vegetables!

"Well," you say, "I don't know the difference between a Golden Podded Wax and a Chalk's Early Jewel." Probably not; most of us were that way when we first started. Get in touch with a reputable seedsman. He will send you seed lists containing hints and good information. You will like it once you get started. Don't let your "dignity" get in your way. Whoever you are, you are not too big or too important to dig in the garden.

Speaking of "seedsmen," be sure to patronize a reliable firm. If you do it properly you are going to invest a fair bit of time, and some money too in your enterprise. Moreover, you are going to get interested in it; you are going to watch with a good deal of pleasure for the day when the seeds "come up,"—to use the more common term. You are going to be delighted as you see your vegetables forming shape and growing—that is—you are, if you have purchased *good* seeds. Don't trust the man who comes to your door with a few "chits" and *cheap* seeds. Better to give the poor fellow a rupee and send him away, than to buy his seeds and experience the chagrin of failure.

It is not a bad idea to get a "collection" of vegetable seeds which will provide a continuous supply of nutritious and health-giving vegetables. But whatever you do, get started in this truly patriotic work to help India.

CATARACTS

TRUMAN L. BOYES

ALMOST a third of the people over sixty years of age who are totally blind are blind because of cataracts. Blindness and cataracts, however, should not be too closely linked together, in spite of their association, since many people who suffer from cataract retain their sight. And, even though cataracts are the major individual cause of blindness, among cataracts themselves various forms must be distinguished and different treatments are called for. The word itself dates back hundreds of years; our distant forefathers, noticing that the whitened area within the normally black pupil resembled the white spray of a waterfall, described the opaque lens as a cataract, and this word continues in our use today.

The eye is a small, round ball about the size of a walnut. The circular, transparent area of the front part of the eye is the cornea. A short distance behind the cornea is the iris, of brown or blue colour, with a normally black centre, the pupil. Directly behind and virtually touching the iris is the crystalline lens. As more or less light comes within the eye, the iris changes in size so that a small or large pupil results, the size of the pupil being dependent on the amount of light outside the eye. The crystalline lens changes its shape according to whether the eye is focussed for distant or near objects.

Normally, light passes directly through the cornea and lens, just as it might go through two pieces of window glass. When the inside window-pane is similar to frosted glass, a condition exists comparable to the condition in the eye when a cataract is present. Frosted glass breaks up light rays the same way that a mature, "ripe" cataract does. Light can still pass through the frosted glass, or cataract, but reading through either is impossible.

Although a cataractous lens may prevent good vision, the inside, back portion of the eye called the retina, is not damaged, and removal of the cataract should give a satisfactory result. If the retina or back part of the eye has been damaged by disease, then removal of the cataract would be useless.

In the normal eye, the crystalline lens has a nucleus, or vital centre, which begins to age at birth. This aging process takes place spontaneously without any injury, progresses slowly, and is normal with increasing age. The eyes of middle aged persons undergo this normal, nonpathologic change, and it is corrected by the use of glasses. Such changes in the crystalline lens of an eye occur without pain and come on so gradually that the alteration in vision may not be noticed until it is fairly well advanced. These changes may even be so slow that never within the lifetime of a person will any treatment be required other than the progressive changing of glasses.

On the other hand, the rate of progression, especially in persons over fifty, may be fairly rapid, reaching its culmination as a cataract within a year or two. Normally from five to ten years are required before complete maturity of a cataract is reached. Definite knowledge of why cataract forms in one person's eye and not in another's has not yet been determined, although we know that certain diseases, notably diabetes, cause disturbed nutrition within the entire body and may promote the formation of cataracts within a few months.

Cataracts may occur at any age. The most common kinds are congenital cataracts in young children, cataracts due to injury to the lens, and the so-called senile cataracts found in the middle aged and elderly people. Congenital and senile cataracts are occasionally spoken of as primary cataracts, because they usually occur without other diseases of the eye. Their precise cause is not well understood. Many cataracts are called secondary because they start during, or after, some inflamation in the eye, or a disease of the general system. Such cataracts commonly occur in glaucoma, or hardening of the eyeball, and in certain diseases of the iris or retina.

A frequent question asked in regard to cataract is the influence of heredity. Heredity does play a part in many cases of congenital cataracts. In the commonest type of cataract, the senile, heredity has an indirect influence, since there is a definite family tendency toward longevity and cataracts affect a fair percentage of elderly people. The longer people live, the more apt they are to have cataracts.

The idea that it is necessary for an eye surgeon to wait until a cataract develops to a certain point before operating, is one of the prevalent false conceptions regarding cataracts. The eye surgeon classifies cataracts according to their stage of cloudiness, as beginning or incipient cataracts, immamature or unripe cataracts, mature or ripe cataracts, and over-ripe cataracts. In the days of our grandfathers, it was customary to allow the cataract to become ripe, or completely clouded, before removal was attempted. Under modern methods of treatment, the individual with a cataract can forget all about whether or not it is ripe. Today there is no need to sit around in a state of partial blindness waiting for a cataract to become ripe. The modern eye surgeon is able to remove a cataract as

(Continued on page 14)

WHAT THEY SAY!

"I am sorry to inform you that the March number is not received, but that of April is received. Kindly send same, as I cannot miss such a valuable magazine even for a month."—Miss A. R. Ceylon.

* *

"We were very glad to receive the March, July, September and November, 1945, issues of your magazine so kindly sent by post by you. They are very attractive, full of information and are very useful for the Committee and its Temperance Reading Rooms. The Committee would like to subscribe for three copies of your magazine for the use of its Reading Rooms." —The Secretary, C. T. C. Hyderabad (Dn.).

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"I just came across accidentally in one of the commercial firms' office in Bombay, your HEALTH magazine published by your above Publishing House. As it is the magazine giving views on medical subjects in which I am immensely interested, I would like to be a subscriber to it. . . . I am enclosing herewith yearly subscription for one year from January 1946 a cheque for Rs. 7-8-0 in advance."—J. J. P. Bombay.

NEW IDEAS ABOUT GROWING OLD

W. W. Bauer, M.D.

THE process of growing old has added two new words to our language. These are "geriatrics," which has to do with the care of the aged, and "gerontology," which is the science of aging. New words generally denote new thoughts and new interests. And so it is with this matter of aging. Old age is one thing, while aging is not quite the same. Aging begins with conception, while old age does not overtake the individual until some decades have passed. It has been estimated that the healthiest age is that of ten years, at which age only one in one hundred thousand dies.

Neither does aging progress at an even pace in all persons, nor even at the same rate in all parts of the same individual. Sir William Osler is generally credited with the popular philosophy that a man is as old as his arteries. This is only a partial truth. It might, with equal truth, be said that a man is as old as his eyesight, or his hearing. The fact is that one individual may be much older in one sense than in another, and it is common knowledge that some persons are actually older to all intents and purposes at fifty than others are at ninety. Occasionally one sees an individual who is facetiously but correctly described as having been born old.

Aging is in part a matter of attitude and spirit. It is a measure of the ability of a person to adjust himself to the changes which come with the passing years, and to live effectively at his age, whatever that may be. "Be your age," is the popular way of putting it, and is a very good way indeed. Living must be adjusted to physical and mental capacity. It is well known that the baseball player who survives to play effectively after thirty-five is the exception. The boxer is an old man at thirty. But the locomotive engineer, the captain of a ship, the director of a great corporation, the teacher, the preacher, the scientist, the philosopher gain effectiveness with experience and the mellowing which comes with age, provided the life preceding has been well lived and there is a proper philosophy of aging.

The war emergency has shown industrialists that old men and women can and do render effective and valuable service, and that their accident rate is lower than that of younger persons. Even if they cannot produce as intensively over extended periods of time, they are, nevertheless, exceedingly valuable not only for what they produce but for the stability which they afford to the organization, and the help they can often give to the younger and inexperienced workers.

Aging has too often meant being set aside as of no further use. Retirement, to which many have looked forward throughout their lives, proves a bitter disappointment, because it brings with it a sense of futility and uselessness, of being thrust aside by industry and by the young generation. It too often carries with it a sense of actually encumbering the earth. This need not and should not be. Proper preparation for old age should lead to a life of continued usefulness within somewhat narrower limits but with ample compensation in the knowledge that what strength can no longer accomplish, wisdom and judgment may often bring about.

This implies that for a successful old age there must be preparation for it in the years of youth. This is true not only psychologically but medically. The diseases which afflict the aged are frequently found to begin in middle age and not infrequently in youth. High blood pressure, heart diseases, hardened arteries, cancer, arthritis, diabetes, gout, and the other diseases which plague the aged cannot be cured when they are far advanced, but much can be done to prevent them and to arrest their growth if measures are adopted in time. The new interest in the aged should be a great benefit to the aged of tomorrow, and should offer some measure of relief to those old folks who live among us today.

Man instinctively pays little attention to health problems until his health or his security is menaced by them. It is only within the past forty years that attention has been paid to the appalling loss of life among newborn babies. Out of this grew the medical branch known as pediatrics, based on denial of the old idea that the child was but a small adult, and recognition of the fact that the child is nutritionally, immunologically, and physiologically different from the adult in many ways. Now we are able to recognize that the aged is not merely an adult grown old, but an organism changed in reactions and subject to different laws of growth and of reaction to disease. Out of this realization comes the science of gerontology and the practice of geriatrics.

Nutrition is of tremendous importance in geriatrics. Traditionally, the old person has lived on crackers and milk or toast and tea, carrying out the fallacious idea that old age is a second childhood. In a few instances, aged gluttons who have come to grief through their greediness, have lent emphasis to the popular idea that, with advancing age, food intake must be sharply restricted. This is an unfortunate fallacy. The aging individual needs and should have a diet representing all classes of foodstuffs. His lessened appetite, reduced digestive ability, and smaller need for energy due to curtailed physical activity, call for smaller quantities and a reduction in the strictly energy foods, such as the sugars, starches, and fats. Protein, vitamin, and mineral supplies must be maintained.

The calcification of aging arteries has led to ill-advised suggestions that milk is not only unnecessary but inadvisable in the diet of the aged; modern observation proves that the calcium requirement of the aged is not below that of the adult. Decalcification of bone, common in old age, demands a normal or perhaps an increased calcium intake in the aged, possibly with the addition of cod-liver oil or other vitamin D preparation. The only genuinely good sources of calcium in the diet are milk and cheese.

Protein is derived most commonly from meat, fish, eggs, cheese, dried beans and peas, lentils and soybeans. For those who do not choose to eat flesh, there is scientific justification in the statement of Dr. Edward L. Tuohy in a special article under the auspices of the American Medical Association Council on Foods and Nutrition, who says, "It is distinctly possible to be a well-fed vegetarian if milk, butter, and eggs and cheese are plentiful." In certain special cases, as in the gouty, it may be necessary to restrict certain kinds of proteins but in general, protein intake of the aged should be maintained.

There is a distinctly new attitude developing toward operations on the aged. It was long held that older persons and infants were poor subjects for operation; the former were supposed to be weak and the latter too small to react satisfactorily. It has long been known that babies do very well, and experience now shows that age in itself is no criterion of how well an individual will respond to surgical procedures, and endure the shock of anesthesia and of surgery.

Surgery is frequently necessary in later life, especially for the treatment of cancer and other tumours. Emergency operations are better tolerated if the individual is in a good state of health and nutrition. Aging persons who are wise would anticipate the likelihood of being called upon to meet surgical emergencies, and will maintain themselves in good health.

Walter B. Cannon has pointed out how the body maintains certain vital balances. He has called this procedure "the wisdom of the body," which is the title of his book, a book which should help every intelligent person to more sensible living through a knowledge of the wisdom by which his own body operates automatically if given a fair opportunity. In the aged, these balances continue to operate but within narrower limits, and are more easily upset. Especially is this true of the water balance. Old age has been defined as a process of drying up or wilting; that is the loss of water balance. Old persons should have an adequate fluid intake, to which broths, soups, and hot drinks contribute.

Aged persons must perform all physical acts with more consideration and moderation. Running for trains, working under high pressure, and severe emotional excitement must be avoided. While the diet should be adequate, rich and extravagant meals should be avoided. Above all, there should be cultivated a happy philosophy which enables the older person to participate in events as much as he can, and beyond that to be content to watch, to advise *if asked*, and to share vicariously the joys and sorrows, the ambitions and the achievements, of those with whom he is associated by family ties or by business or professional connections. Add to this, regular supervision by the doctor of his choice, plus reasonable compliance with the doctor's instructions, and old age need not be a hardship. It can be a joy.

"Grow old along with me!
The best is yet to be,
The last of life, for which the first was made."

—Robert Browning.

IS SALT KEEPING YOU AWAKE?

Adapted from the Journal of the American Medical Association

MICHAEL M. MILLER

* * * *

THE person who suffers from insomnia is a source of much amusement and revenue to the cartoonist. His pathetic efforts to get to sleep by taking pills, walking floors, and counting sheep have made him, unwittingly, one of the great comedians of our time.

But to the insomnia victim himself, it is no laughing matter. Nor is it to the doctor who tries to cure him. Lack of sleep goes hand in hand with increased nervous tension, and often there is a breakdown in health.

However, my purpose here is not to outline the ill effects resulting from insomnia—which are well known to all who suffer from it—but rather to tell about a radically new method of treating it.

The usual treatment is the administration of some sleep-inducing drug. Doctors do not approve of this, but regard it as a necessary evil. Drug-induced sleep is unnatural, and patients frequently feel poorly rested in the morning.

Furthermore, once the drugs—barbiturates, for example—are discontinued, the patient is often more excitable than before.

So obviously, if the advanced insomnia victim is to get his sleep, something must be done to assure that the sleep is a normal one. With this in mind, I sought for some satisfactory drug-free method.

I recalled experiments where patients, after receiving a larger-than-usual amount of ordinary table salt in an otherwise deficient diet, became not only full of pep, but excitable and even irritable. I wondered if the process could not be reversed—if, by depriving patients of salt, it would be possible to bring about physical fatigue, and a resultant desire for sleep.

Twenty hospital patients suffering from insomnia and nervous tension were made available for the test. They ranged in age from twenty to thirty-five years. All were put under special observation for a week before the salt-restricted diet was begun. No change was made in their normal activities. No medicine was given.

The result was that after four to seven days of diet exceedingly low on salt, most of the patients showed a gradual drop in nervous tension, less irritability and restlessness. They were able to fall asleep more easily, and found their sleep more restful. A marked tremor had previously been noticeable in the fingers of some; this began to cease. There was a consistent decline in blood pressure, and a moderate decline in pulse rate.

In addition, the patients became fatigued more easily, so that they usually decided to retire at an earlier hour, invariably falling to sleep within ten to fifteen minutes after retiring. Most of them slept straight through until awakened at 6 a.m. The maximum amount of sleep permitted was eight hours.

They tossed around less. If they did wake up for some reason, they fell asleep again readily. Formerly, they had experienced considerable difficulty in regaining sleep after awakening.

After two or three weeks on the reduced-salt diet, they began to have fewer dreams. Several patients not only slept well during the night but developed a habit of taking regular short afternoon naps.

In general, the patients appeared more relaxed, and in some instances even phlegmatic. Following the improvement in sleeping habits, there was improvement in mood. Incidents which previously caused great emotional disturbance no longer seemed to excite them unduly.

There was improved ability to concentrate, as revealed by the manner in which patients performed various tasks. One man who had been usually tense was able to concentrate satisfactorily on reading for the first time in the twenty-nine months he had been at the institution. Three of the patients who had had severe headaches experienced partial or complete relief.

Only three of the twenty patients failed to respond satisfactorily; in their cases the diet was discontinued. Two of these had been taking drugs so long that they had come to depend on them.

Of the remaining patients, thirteen were given salt (sodium chloride) pills, after they had been on the restricted-salt diet for some weeks. Within seven to ten days, ten of the thirteen developed sleep disturbances. This indicated that a return to a normal salt diet would produce tension and insomnia again.

Here are some typical case histories:

A woman of twenty-four, admitted to the New York State Psychiatric Institute, showed noticeable anxiety, a desire to be left alone, and was preoccupied with certain obsessions. Over a period of months she had had a dread of falling asleep. Apparently fearing that she might forget to breathe, she would go through prolonged periods of forced breathing, staring into space and crying intermittently. She had been given sedatives for five weeks at the Institute, with unsatisfactory results. The sedatives were abandoned, and a low salt diet was tried.

Salt may add savour to your meals but it steals hours from your sleep.

No improvement showed until the thirteenth day, when she appeared considerably relaxed, her anxiety reduced, and she slept for eight-and-a-half hours. From this time on she showed steady improvement.

And, what is more important, the improvement in her mental state paralleled her improved sleep. Her weight increased, she was calmer, and she started to play bridge and ping pong, which she had refused to do previously.

When normal quantities of salt were again placed in her diet, she showed a rather rapid return toward her former mental state, and began to experience insomnia again.

A forty-three year old man was admitted to Ellis Island Marine Hospital suffering from emotional irritability, restlessness, and insomnia, accompanied by dizziness, heart palpitation, and sweating. When first admitted to the hospital he slept only one or two hours a night.

A low salt diet was started, but there was no particular improvement until the fifteenth night, when he slept for seven-and-a-half hours. From then on he slept seven or eight hours each night, until the thirty-eighth day.

Now—and here is an interesting point—even with the low salt diet, he again showed signs of increased irritability, tension, abdominal cramps, restlessness, and insomnia. Analysis of the urine revealed that the amount of salt in his body had fallen far too low. Accordingly, the amount of salt in his diet was increased slightly (although still lower than in the average diet). The result was a fairly rapid improvement.

So this seems to be the problem in a nut-shell: to reduce the salt intake of insomnia patients, but not to reduce it too much.

It must be emphasized, of course, that this is a treatment which insomnia sufferers must not attempt on their own. The patient must be under constant observation in a hospital or clinic so that the necessary medical and chemical tests can be made.

Doctors who decide to try this new treatment should watch their patients for signs of excessive muscular weakness, listlessness, fatigue, intestinal cramps, nausea, or dizziness. It should not be used with patients who have diabetes, kidney trouble, or heart disease.

A word of caution must be added, too, as to trying a too rigid salt curtailment in hot weather, because in the summer months a great deal of salt is lost through perspiration.

While the patient is under treatment, no heat therapy should be administered, and excessive physical exertion should be forbidden.

But when properly handled, a low salt diet should produce no harmful effects whatever. And it has the additional benefit, when compared to use of sleep-producing drugs, of being non-habit forming.

Michael M. Miller, M.D., is associate physician of St. Elizabeth's Hospital Washington, D. C.—*Magazine Digest.*

TALL TALES ABOUT FOOD

Some things you may not know about foods you eat.

Condensed from *Today's Woman*

DONALD G. COOLEY

V. K. Vasudevan

London school children learning how to cook.

PROGRESS in the science of nutrition during the past few years has revised many popular notions about food. Some of the discoveries surprised even the scientists themselves. Of others you will probably say, "Why, I knew that all the time!"

Roast beef should be eaten rare because the rich red juices build blood.

The "rich red juices" have no special merit. Take your beef as you like it, as long as it isn't burned to a crisp.

Sugar is a superior energy food.

All common foods except salt and water supply food energy, which is measured in calories, or heat units, and has nothing to do with energy in the popular sense of vigour and endurance. Sugar and other simple carbohydrates are quickly digested; their chemical energy becomes quickly available in the bloodstream.

White eggs are more nutritious than brown eggs.

Eggs are eggs. Food value may vary slightly, but only according to the diet of the hen.

Fish is a brain food.

Fish contains phosphorus; so does brain tissue. But no food "feeds" a specific organ. Phosphorus from fish may end up in brain, nerves or teeth, along with phosphorus from milk, beefsteak, etc.

Fried foods are generally hard on the stomach.

Careful investigation finds no evidence for this widespread notion. Fat remains in the stomach longer than other food elements, but that does not mean indigestibility. Fried eggs are digested as easily as boiled eggs and the fat in a doughnut or piece of crisp well-made pie crust is utilized as readily as the same amount of fat in different form.

It is dangerous to eat acid foods with milk—strawberries and cream, for instances—because acids curdle milk.

If you can eat two foods separately, you can eat them in combination. If fruit acids don't curdle milk, stomach acids will.

We would all be healthier if we limited our diet to raw, "live" foods instead of cooked ones.

Some would be sicker. Sensitive systems are upset by too much raw, coarse-fibred food. Raw fruits, juices and salads are highly desirable in the average diet, but cooked foods in general are more digestible. Cooking softens the tough connective tissues of meat and bursts the starch granules of vegetables, enabling digestive juices to get at them. Minerals "lost" in cooking are not wasted if the juices and liquors are served. [Prolonged cooking *may* destroy certain vitamins.]

Vitamins contained in natural foodstuffs are superior to synthetic or drugstore vitamins.

Whether taken in food or capsules, specific vitamins are chemically identical. Many foods, however, probably contain vitamins not as yet identified—plus other elements essential to good nutrition. Synthetic vitamins are at best supplementary.

Drinking plenty of milk prevents tooth decay.

It helps, but innumerable milk drinkers with cavities in their teeth will deny this popular belief. Although milk is our best source of calcium and phosphorus, the principal tooth minerals, some element apparently necessary to bind the two minerals into sound teeth may be missing otherwise in the diet.

Butter contains certain necessary food elements not furnished by margarine.

The Council on Foods and Nutrition of the American Medical Association concludes that vitamin A fortified margarine is equal in digestibility and energy value to other food fats, and that it can be substituted for butter in the diet without any nutritional disadvantage.

Spinach is superior to other green vegetables.

Although spinach is rich in iron and calcium, it is now known that these minerals are partially present in forms the body cannot use. Spinach is a good source of vitamins A and C but other greens are of equal or greater nutritional value; but there is no need to overdo it.

It is a bad practice to drink water with meals.

Not unless you use water to wash down food without chewing. Water does not dilute the stomach contents to any extent but runs out quickly and is absorbed by the large intestine.

Whole-wheat bread is superior to white bread.

White bread is more easily digested; made with milk solids and enriched flour, it is an important source of minerals, vitamins, carbohydrates and calories. Whole grain breads contain valuable elements of the original grain plus coarse fibre that may aid elimination; but coarse fibres are not well tolerated by sensitive digestive tracts. Both kinds of bread are perfectly wholesome foods.—*Readers' Digest.*

TOMORROW YOU MAY BE YOUNGER

Condensed From

Ladies Home Journal

FROM the highly active medical front in Soviet Russia comes news of a spetacular new serum, ACS. Not since the discovery of penicillin in 1941 has any new medical substance created such interest. Developed by Prof. Alexander A. Bogomolets, who has devoted more than thirty years to the study of old age, the serum is the first to promise a brake against the degenerative processes and accompanying chronic diseases that begin past middle life. Such a brake would preserve physical and mental alertness for two to three decades longer than the present average. It would add not only length to life but also breadth and depth. Another Cinderella of medicine is about to step on the stage. The serum has already been applied with success in the treatment of thousands of suffering patients.

What is man's natural life span? Man grows old much faster than he should, through faulty habits of living —such as improper diet, strain on the nervous system, lack of proper rest, and similar outside factors. Buffon, the great French naturalist, found that the normal duration of an animal's life exceeds the period of its growth by an average ratio of 6 to 1. Applying this formula to man, Bogomolets reasoned that since man's bones continue their growth for twenty to twenty-five years, his normal life span should be from 120 to 150 years. Studies from entirely different angles by other scientists have led to identical conclusions. According to Professor R. W. Gerard, University of Chicago physiologist, "man's true life span is almost twice the Biblical three score and ten."

Bogomolets' lifelong search to determine the causes that lead to the gradual loss by the human body of its resistance to disease, and to check this loss, is a modern scientific odyssey. With a staff of sixty, he made clinical studies of nearly 30,000 men who had passed the century mark. What special endownment did these individuals have? He found that a number of them seemed to get a "second wind," manifesting itself in the restoration of lost or failing eyesight, the return of hair colouring, and a strong resistance to disease.

A colony of supercentenarians was discovered in Abkhasia, on the Black Sea near the Biblical lands where the original Methuselah lived for nearly ten centuries. In this strange "Methuselahville," thirty-five persons between the ages of 113 and 136 were found to be "brisk and lively."

In his studies, Bogomolets became more and more interested in that vast network of elastic tissue in the body known as "connecting tissue." This tissue forms the inner and outer lining of the body's organs. Since its function had largely been regarded as a passive one, very little attention had been paid to this connective tissue by biologists.

Bogomolets found that the connective-tissue cells in individuals who had reached ripe old age were invariably in a remarkable state of preservation. Further studies led him to the revolutionary conclusion that the structure and condition of the connective-tissue cells—particularly those cells forming what is known as the reticulo-endothelial system (present in the spleen, bone marrow and other organs)—determine the organism's resistance to infection as well as to senile changes such as hardening of the arteries, arthritis, degeneration of the kidneys, high blood pressure and even cancer.

He was supported by other facts brought to light in earlier studies. Though the blood supplies nourishment to the cells and also carries off their waste products, the cells of the various organs do not come in direct contact with the blood. Interaction takes place through the walls of minute capillaries that envelop the cells. These walls are closely knit with connective tissue, acting as the intermediary. It is a two-way transportation system, through which the cell obtains its food and disposes of its waste products. When such a system gets clogged up, the cells do not get proper food, and elimination of waste products is impaired.

Bogomolets came upon several other remarkable discoveries. This connective-tissue wall between the blood and the cells, he found, was the central power station of life, from which emanated the all-important biochemical activities for keeping the body young and protecting it against disease. It was, in sum, the veritable "fountain of youth" regulating the basic-metabolic processes of life. Resistance to disease is largely a chemical process.

In place of the maxim, "A man is as old as his arteries," Bogomolets offers another: "A man is as old as his connective tissue." The Caucasian Methuselahs reached their ripe old age because somehow they had managed to

keep their connective tissue young. Conversely, the majority of people grow old prematurely through the gradual destruction of the mechanism for eliminating the poisons that slowly accumulate in the connective-tissue cells.

If some means to stimulate the activity of the connective tissue were found, Bogomolets reasoned, two major ends would be achieved at one stroke. The stimulated connective tissue would become sufficiently young again to throw off its own poisons, and the rejuvenated tissue would once more resume the special roles it played when both it and the body were young. It would once again bring vital food to the cells, defend them against infection and, most important, once again replace dead cells with fresh living substance. In other words, the stimulation of the connective tissue would then rejuvenate the entire body.

It was only necessary, Bogomolets believed, to develop a serum to stimulate the most active components of the connective-tissue system—namely, the reticules, or endothelial cells. After years of work, with the aid of sixty assistants at the Kiev Institute of Experimental Biology and Pathology, he developed what is known as "anti-reticular-cytotoxic serum," or ACS.

Experiments began in 1937, first on animals and then on humans. A special clinic was established to treat only patients over fifty. The treatment consisted of small injections of serum and special instructions on diet. The patients' health and working capacity improved rapidly. Headaches, rheumatism, insomnia soon disappeared. As the methods of its use were further refined, it provided a defence against a number of the deteriorating diseases that come with age.

On June 23, 1941, Bogomolets announced that his life-prolonging serum was at last perfected. He was sixty years old on that day, but he insisted that he was far from being an old man. "It may sound paradoxical," he said, "but a man of sixty or seventy is still young. He has lived only half his natural life. Old age can be treated just as any other illness, because what we regard as normal old age is actually an abnormal, premature phenomenon."

The serum was made available to many hospitals, and reports came in that it was a highly promising weapon in preventing the recurrence of cancer after surgical removal, in ameliorating hardening of the arteries, high blood pressure, nervous and mental disturbances, and other diseases.

Bogomolets emphasizes that the serum is not a panacea, not even a cure for any specific disease. On the other hand, by stimulating and regenerating the connective-tissue cells, it restores to the body a considerable measure of the intrinsic resistance it had when it was young.

Many leading American laboratories have taken up the new trail, and one of the improvements already being worked on is the development of better means for obtaining the source material for the serum. At present it is necessary to use reticulo-endothelial cells of human spleen and bone marrow, taken from young, healthy individuals who died as the result of accident or from a non-infectious disease. Moreover, the material must be used not later than six to ten hours after death.

Such a method offers many difficulties. Fortunately, America is the land that gave birth to the art of culturing living tissues of animals, including man, in special media in glass dishes. With some modifications the same technique could be applied to growing limitless quantities of human endothelial cells from a tiny "seed."

When the Bogomolets antiage serum can be made available to the American people (some two or three years hence), it may offer the first serious challenge to Oliver Wendell Holmes' prescription for longevity: "Advertise for a couple of parents, both belonging to long-lived families, some years before birth."

D. D. T., THE WAR'S GREATEST GIFT

CONCLUDED

THE entomologist who ran the Panama test on adult mosquitoes objected to the fact that the DDT insect-killing bomb is both bulky and heavy, that it has to be used upright, that it cannot readily be refilled, that it is expensive. Whereupon he designed a small container resembling a cigarette lighter in size and appearance. His pocket sprayer weighs eight ounces as against the bomb's one-and-a-half pounds. It operates by a simple valve which turns on and off with no waste of the contents and can be held upside down, right side up or at any desired angle. Ten strokes will kill every insect in an average size room. It contains DDT plus a kerosene diluent and pyrethrum. It can be refilled at will. Its total contents of 100 grams will take care of 200,000 cubic feet whereas the bomb, which contains 500 grams and can be used only once, treats a maximum of only 150,000 cubic feet!

The ingenious little pocket sprayer is only one of the many simplified methods for using DDT in the home. The Orlando Laboratory has also tested DDT's effect when impregnated into standard materials. Since this insecticide is water-resistant through as many as eight launderings, underclothes treated with a single application at the beginning of the winter season will protect their wearer against lice until spring comes and typhus is no longer a threat. Metals, wood, many kinds of fabric, calcimine and oil paints have also been impregnated with DDT. Tests run at Orlando indicate that walls, tables and chairs treated with the insecticide will be poisonous for several months to all household insects which come in contact with them. If this method of interior insect control comes into general use, it might even obviate the need for the adroit pocket sprayer. Although DDT cannot free the world of insects, it can —by one means or another—certainly rid man's dwellings of annoying and dangerous pests. Since it neither smells nor stains, such a prospect is practicable as well as possible.

Experiments with preparations, formulations and methods of application have caused the Orlando scientists to draw two significant inferences about insecticides in general. First they have reversed former opinion on how much active ingredient should be used. Previously it was believed best to include only a trace of insecticide in a large amount of diluent. This was because old time dispensers released more liquid at a time—and therefore more insecticide—than was necessary for a given space. Thus a high concentration of the active ingredient was wasteful. Today, thanks to the pocket sprayer, to the aeroplane and other new dispensers, which release a spray so fine as to be almost invisible, the Or-

lando Laboratory has proved that the greater the concentration of DDT, the greater its efficiency. Also it has repeatedly demonstrated that a solution containing 20 per cent of DDT will—if the solution is thinly enough dispersed—cover four times as great an area as a solution containing 5 per cent of DDT. Since DDT is cheap to manufacture, the payload and labour economy thus effected is enormous.

Second, in contrasting adult with larval control of insect populations, United States Department of Agriculture scientists are of the opinion that the former will complement rather than replace the latter. In sparsely settled rural areas where breeding places are generally unknown, elimination of adult mosquitoes is the simpler method. In heavily populated areas where breeding places are easy to locate, it is more practical to control insects at the breeding point. Spraying insect larvæ once a week prevents the emergence of full grown adults. (When used as a larvicide, DDT must be applied as often as once a week in order to catch the new larvæ as they develop.) Because adult insects have a greater opportunity for transmitting disease in heavily populated regions than they do in the country, it is extremely important to keep them out of urban areas.

The Orlando Laboratory has not been content to rest on its DDT discoveries. Organized to utilize the services of a team of skilled men, it is also the centre of a vast national team which constantly seeks better insecticides, new insect repellents and chemicals which will eliminate insects, impervious to DDT. At the same time that the Orlando Laboratory was started, five American Universities and several major American pharmaceutical manufacturers pooled their brainpower and facilities for the purpose of removing pestilence from the world. The Universities and manufacturers do pure laboratory research. Every time they discover a new chemical or combination of chemicals, they send it to Orlando where the problem is to discover what it can do and how well. Before the War the United States Department of Agriculture tested about 500 new materials a year. Today they test an average of 500 a month and have on one occasion reached a high mark of 859 materials in a single four week period. Every one of these materials is tested for its repellent as well as insecticidal properties. From the 10,000 odd chemicals already investigated, Orlando has made many contributions in addition to DDT.

Among them are MYL (the pyrethrum louse powder), an insect repellent, a poison for use against mites and chiggers, an ovicide for lice nits and a preparation which alleviates the pain of insect bites.

The repellent, which is effective for three to eight hours, is called 622. A mixture of three chemicals, its use in combination provides protection against a wide variety of insects. It contains six parts of dimethyl phthalate, effective against anophelene mosquitoes, two parts of Rutgers 612 which is repellent to *Aedes aegypti* mosquitoes and two parts of Indalone which repels biting or stable flies. Oddly enough, these combine to make a single repellent far more powerful against each of the insects they affect than is any of the three when individually used. Furthermore, the three chemicals in combination are effective against other varieties of insects.

Mites and chiggers (chiggers are the larvæ of mites) occur in almost every part of the world. They are usually harmless, but in certain tropical areas such as the Pacific they are carriers of the deadly scrub typhus. Even when disease free, however, they are extremely unpleasant since they attach to the skin and leave a bite which takes up to a month to heal. Because DDT is slow acting, mites and chiggers are able to attach and bite before DDT has time to paralyze them. The Orlando entomologists have solved this formidable problem with two new miticides. The best and newest is benzyl benzoate, superior to dimethyl phthalate, the older one, because it will withstand contact with water. Benzyl benzoate has long been used as a scabicide, but no one before the Orlando group ever thought of searching another use for it. Besides testing new materials, this group believes in being open-minded enough to assume that long known materials might have additional undiscovered properties.

Benzocaine was found at Orlando to be an excellent chemical for destroying the nits of crab and head lice, but the men did not let Benzocaine rest at that. Humanly seeking something which would take the sting and itch out of all insect bites, they have developed a formula whose ingredients include the nit ovicide. While their unnamed Bite Remedy may lack the medical importance of their DDT discoveries, it will certainly comfort many people. Immediate relief comes from one application. It is a combination of four well-known chemicals: Benzocaine, methylealicylate, salicylic acid and ethyl alcohol.

Pleasant by-products of this sort turn up frequently at Orlando. Meantime the entomologists continue their search for the perfect repellent and the pluperfect insecticide. The Orlando Laboratory is one place where DDT is not regarded as the medical discovery which will solve all the world's insect vicissitudes. Even now the entomologists are at work on a chemical variation of DDT which may far outdistance 2, 2-bis (parachlorophenyl) 1, 1, 1-trichloroethane. With the universities and pharmaceutical houses shipping hundreds of new materials to Orlando every month, there is no telling what miracle tomorrow may unfold.

RINGWORM OF THE SCALP AND ATHLETE'S FOOT

F. PHILIP LOWENFISH

RINGWORM, which attacks the hair on the scalp and also causes athlete's foot, is not a worm that you can see with the naked eye, or anything that moves about as a fly or insect. Far from it.

This organism is a vegetable fungus or parasite that can be seen only under the microscope when the blister or scale from the foot, or an infected hair from the scalp, is removed for study. It reveals itself by many thread-like filaments called mycelium, and tiny, round glistening bodies called spores. Often the fungus may not be found, and cultures in test tubes have to be made to confirm the diagnosis. These tubes contain agar and honey or dextrose for the fungus to grow on. In about ten days to three weeks, a growth appears and, depending on its colour, behaviour, texture, and configuration, there are certain differentiating conclusions showing which species of fungus this growth represents. The animal form of ringworm of the scalp will give a canary-yellow colour to the test tube, while the human form of ringworm of the scalp will produce a rose-tinted colour.

Another diagnostic aid of great value in ringworm of the scalp is the Wood's light. This ultra-violet radiation, filtered through a bluish sodium-barium silicate glass containing about 9 per cent nickel oxide. It gives a brilliant green fluorescence to the infected hairs when the fungus is present.

The recent widespread increase in fungus infections of the scalp has emphasized the need for a simple effective method of treatment. From January 1, 1943 to May 1, 1945, there were admitted to the Vanderbilt Clinic of the Columbia-Presbyterian Medical Centre, New York, 928 new cases of ringworm of the scalp in which the diagnosis was confirmed by identification of the fungi by culture in a test tube. Of these, 97 per cent proved to be due to the human form of ringworm, for which the only reliable method of treatment is removal of all the hair from the scalp by X ray. The cure for the animal form of ringworm of the scalp is much simpler. This responds to local fungicidal preparations. Roughly, about 10 per cent localized cases of the human form of ringworm of the scalp responded to cure with local treatment. The extensive cases must be treated with X ray.

How does one know he has ringworm of the scalp? First, this is confined principally to children, and with the onset of puberty, the infection spontaneously disappears. Second, the mother, teacher, school doctor or nurse may discover round bald spots on the scalp, ranging from the size of a four anna piece to that of a silver rupee, or even larger. There may be one or several, and on examination with the Wood's light, or with the aid of the microscope or test-tube culture, the diagnosis can be made. The necessity for Wood's light examination in schools, both for diagnosis and follow-up, is established beyond question. A large number of patients have been discovered by routine Wood's light examination in schools and clinics; yet, when viewed with the naked eye, they did not show the slightest evidence of fungus-infection of the scalp. There is great need for routine examination in schools, at least every six months. That is the only way to ferret out and treat these human carriers. By no means is the task simple, but only by co-operation with the parents, teachers, nurses, doctors and clinics will physicians be able to diagnose and treat intelligently this difficult infection—meanwhile, searching for a simple and better method of treatment.

Ringworm of the foot, also known as athlete's foot, is a common ailment. One often hears these complaints.

"My feet itch. I have blisters between my toes and on the soles and heels of my feet. There are scales on my feet. My feet sweat. I have been troubled this way for years, and I don't seem to get much relief. I have used numerous salves and lotions and have bathed my feet in different solutions. I have gone to many doctors with little success. What shall I do?" This is a typical history patients give. They want to know what they have, how to prevent it, and what to do in the way of treatment. The popular conception is that the diagnosis of athlete's foot and the treatment are quite simple. Yet, of all the skin ailments, it is amazing what suffering follows the abuses of treatment. Why should this be? Too many patients jump to the conclusion that they have ringworm or fungus infection simply because they saw scales on the feet, and in treating them, irritated their skins and made matters worse.

Ringworm may affect any part of the smooth or hairy skin, the finger nails or the toe nails. The most frequent place is the toes. Because it is found between the toes of the feet in athletically inclined individuals who frequent gymnasiums, swimming pools, and shower baths, it is known as athlete's foot. Tiny blisters, cracks and scaling of the skin, moisture, itching and burning, are the usual complaints. The web between the fourth and fifth toes is most often involved; yet, the soles of the feet, particularly beneath the arch and around the borders, and heels, as well as the palms and fingers, are a frequent source of trouble. Since the primary focus usually begins on the toes, the toes must be cured to insure best results in other areas.

The factors which favour the growth of the fungus are: sweating of the feet, walking barefooted in our homes, at the beaches, in the swimming pools, in shower baths and gymnasiums, all of which tend to make one lax in the protection of the feet. Once the fungus gets a start between the wet toes, cramped in from the antiseptic sun and oxygen of the air, it has a rich soil to feed and live on. The organism may be lurking on the floors, on carpets or rugs, on the ground, in the sand, in the shoes or in hose; hence it is easily transferred to our hands and to other parts of the body. It is not enough to be clean in order to avoid this annoying infection. Athletes are clean, but they have their share of this distress. The wearing of your own slippers in the home and bathing shoes in swimming pools, gymnasiums and on the beaches is essential to prevent infection. If the toes are very well dried after a shower, bath, or swim, and an antiseptic foot powder used, both will help to prevent the possibility of this infection.

If treatment is to be successful, the feet must be dry, the blisters and scales must disappear, and the itching and burning must stop. Ringworm is a skin condition and does not get into the muscles or enter the blood stream. Hence, taking of medicines by mouth or injections have not been of value. It must be attacked locally at the source with antiseptic soakings, antiseptic lotions and antiseptic salves to kill the fungus.

Recent work in the treatment of athlete's foot with the fatty acids, such as propionic and undecylenic acid, have been valuable. These have been used in ointment, solution, and powder form.

Ringworm of the scalp and athlete's foot may be easy to diagnose, but are very difficult to treat effectively and, for this reason, doctors who are specially trained in this field should be consulted.

TOBACCO, FRIEND OR FOE?

PART 2

THE EFFECT OF TOBACCO ON THROAT AND LUNGS

LESTER H. LONERGAN, M.D.

* *

DO YOU remember the testimonial advertisements regarding the mildness and the soothing properties of certain cigarettes? And do you believe them? Dr. Arthur H. Steinhaus tells us Martinelli's experience. When this great singer insisted that reporters stop smoking in his presence, they reminded him that these were the very cigarettes he had endorsed. His reply was something like this: "It is true. Gaspies never hurt my throat, because I never smoke them." Apparently the Federal Trade Commission is not so easily convinced by such advertising as is the general public. The FTC charged that many such statements used are false; that testimonials are often written by the manufacturer and not even read by the one whose signature is used. Blake Clark (*Reader's Digest*, July, 1943) confirmed what we had suspected for a long time. "Interviews with athletic champions and other testimonials reveal many who received a $1,000 'lift' from the makers of Camels, but who do not smoke Camels; and some who have smoked only a single cigarette—the one they held while being photographed."

Substances in tobacco smoke responsible for the irritation produced in the throat and bronchial tree are (besides the heat of smoke itself) pyridine, ammonia, and nicotine, but especially the tars and resins—yellow-brown products of combustion, easily seen when a cigarette is puffed through a handkerchief. These tars are present in amounts usually over 2 per cent in cigarette smoke. Glowing cigarette-testimonial advertisements do not change the fact that smoking does produce an inflammation of the pharynx and larynx, with an associated hacking cough. This irritation is no less when those cigarettes are used which possess the "cooling" influence of added menthol. This drug, rubbed over a small area of skin, will indeed produce a cooling sensation, not because the local temperature is any lower (for the skin temperature is actually higher), but because this slightly irritant drug has the peculiar ability to stimulate the nerve endings which carry the sensation of cold. The smoke from menthol cigarettes may seem cooler. Actual test indicates otherwise, and the irritation produced is no less.

Major Gerald B. Webb has presented further evidence of this tobacco irritation. Among 3,288 soldiers examined, the majority of the smokers of the group showed evidence of bronchial irritation, by *rales*. In most non-smokers no such evidence was observed. Note his figures:

Among 2,632 smokers, those with rales numbered 1,883 (71.5%).

Among 656 non-smokers, those with rales numbered 177 (27%).

In other words, this evidence of bronchial irritation was found among the smokers over two and one-half times as frequently as among the non-smoking group.

This irritation was studied by Drs. Short, Johnson, and Ley, among 2,031 insurance policy-holders, at the time of their periodic health examinations. Among the smokers of this group, nearly twice as many gave a history of frequent colds as among the non-smokers (18% cf. 10.9%). Over two and one-half times as many smokers showed evidence of irritation of the nose and throat. (6.4% cf. 2.4%), and four times as many were troubled with cough (6.4% cf. 1.6%). Among the 139 of this group who had discontinued the use of tobacco, the single symptom listed most frequently as the reason for its discontinuance was "irritation of the respiratory passages."

An excellent study of the relationship of tobacco smoking to complications of the lungs after abdominal operations was reported by Dr. H. J. V. Morton, at the Hillingdon County Hospital, Middlesex, England. A total of 1,257 adults undergoing abdominal operations were studied. These were divided into three groups

(1) Smokers (over ten cigarettes, or one-half ounce of tobacco, daily,) (2) light smokers, (3) non-smokers. Following surgery, the pulmonary complications, such as bronchitis and bronchopneumonia, were reported as follows:

	Complication Rate			
	Men		Women	
Smokers	(175/300)	58.3%	(14/23)	60.9%
Light smokers	(57/180)	31.6%	(14/62)	22.5%
Non-smokers	(5/ 66)	7.5%	(58/518)	11.2%

"It is clear that the effects of smoking are an etiological [causal] factor of great importance. Not only is there great disparity among the bronchitis groups, in which some variation might be expected, but also in the more serious complication groups.

"The combined figures for all types of abdominal operations show that the morbidity rate for smokers taking more than ten cigarettes, or one-half ounce of tobacco, a day, is about six times that for non-smokers.

"Smokers are more likely to develop complications associated with serious constitutional disturbances." As a result of this continued irritation, there sometimes is produced a change in the mucous lining of the mouth, known as leucoplakia, which is characterized by the apperance of silvery-white, hardened patches on the mucous membrane. There were reported 316 such cases by Dr. Francis P. McCarthy, who found tobacco to be by far the most important

factor in its cause. And need we be reminded of another related fact—that prolonged irritation, though not the only cause, is one of the most important factors in the production of cancer? These silvery-white patches of leucoplakia, occasionally seen in the mouth of the smoker, may break down and undergo cancerous changes.

Drs. Freidell and Rosenthal studied eight cases of cancer of the mouth which developed after prolonged use of chewing tobacco at sites corresponding exactly to the areas in which the quid was held. They state: "In addition to the actual neoplasm [the cancerous growth], there were widespread areas of leucoplakia surrounding the tumour and partially covering its surface.... The leucoplakic changes are probably precursors [forerunners] of the actual neoplasm and represent the earliest changes. This is well illustrated in two subjects who transferred the quid from one side of the mouth to the other, after the developing lesions become too painful. In both instances, patches of leucoplakia appeared at the new sites."

At the University of Michigan, Wile and Hand studied 425 cases of lip cancer. In many of these cases, the tumour appeared on the site of the smoker's patch where the pipe had rested for years. In an address by the noted pathologist, Dr. Ewing, appears this statement: "Among preventable cancers, the most obvious is the intra-oral [mouth] group.... The use, and especially the abuse, of tobacco must be charged with a large share in the production of intra-oral cancer as well as of cancer of the larynx.... One may hardly aim to eliminate the tobacco habit, but cancer propaganda should emphasize the danger signs that go with it."

Roffo, at the University of Buenos Aires, showed that these tars which are present in the smoke contain a substance, benzopyrene, which causes cancer when applied to the tissue of experimental animals.

In a study of this cancer-producing compound, by E. J. Grace, is this comment: "In general discussions concerning the preventive aspects of disease, one must be appalled by the unbelievable indifference with which the profession as a whole approaches the problem of heavy smoking, and its potential dangers. In spite of increasing literature on the subject in which the possible connection of various disease entities with the absorption of toxic products from smoking is mentioned, there exists an apathy on the part of the profession which gives no great credit to our clinical acumen. This lamentable indifference is probably accentuated by the fact that about 80 per cent of the profession smoke and *ipso facto* the habit must be justifiable and be commendable. Such evidence, occasionally quoted by so-called authorities, and frequently backed up by commercial associations, is absolute rubbish and represents either abysmal ignorance of the magnitude of the problem, or purposely compromises a philosophy of good medicine.... The vasospastic [blood vessel constricting] action of nicotine is well known, but tar is a more dangerous element, probably of infinitely greater significance, because in this clinical compound, we have all the protential elements which... are capable of producing malignant tissue changes."

I. H. Pierce, at the College of Medicine, State University of Iowa, demonstrated that of the total tarry solids inhaled in smoke of a single cigarette, approximately 68 per cent, or 18 mg., were retained in the body. This means an added burden of .36 gm. per pack, or at the rate of a pack a day, over a quarter pound per year of these irritant tars and resins loaded on to the delicate mucous lining of the throat and lungs. Hence, with the marked increase in the use of cigarettes within the past three decades, we should not be too much surprised at a corresponding increase in primary cancer of the lung, reported by physicians in widely scattered areas of the United States.

From the University of Oregon Medical School, Drs. Menne and Anderson report an absolute increase in the incidence in recent years, and emphasize the probable role of tobacco smoke as a cause. Dr. William Boyd points out that the world-wide character of the increased incidence has been "phenomenal... during the last twenty-five years."

Dr. Chevalier Jackson, of bronchoscopy fame, reported an increase in cancer of the larynx and of the lungs of approximately 21 per cent and 37 per cent respectively, for the period 1934-38. He states "From our record, we can make the parallel statement that the proportion of smokers among patients with laryngeal cancer is very high.... This etiologic factor is important in relation to the study of incidence, because, in our experience, the proportion of men with cancer of the larynx to women with this lesion is ten to one. Among our patients about 95 per cent of the men were smokers of tobacco.... Now that smoking among women is becoming deplorably common, it will be interesting to note in the future the relative incidence in women."

CATARACTS

(Continued from page 4)

soon as the vision has been reduced to a point where it no longer permits the patient to continue his usual occupation. Many people ask why some cataracts are removed by one operation, and in other cases a so-called preliminary operation is performed. The reason is that the eye surgeon is trying to produce results with the least possible risk to the patient. If the cataract is a complicated one, or if the patient has only one eye, a preliminary operation is an extra safeguard of precious sight. In any question of this kind, it is best to follow the advice of one's own eye physician.

If a patient's general health is good, age does not deter the surgeon from operating. There is no surgical shock or severe discomfort in these operations, and they are done under local anesthesia. Cases that are not operable are those in which there is definite evidence of other disease in the eye, which would prevent a good visual result even though the operation was technically perfect.

After a patient has had a cataract removed, the period of disability usually averages about one month. From ten to fourteen days are required in a hospital. Operations for the removal of cataracts should not be done in patients' homes or doctors' offices, because the chances of complications are greatly increased when hospital technics are lacking.

It should be clearly understood that everything which interferes with or reduces vision is not a cataract. There are many other afflictions of the eye. When vision blurs or begins to fail, the first thing to do is to have a complete eye examination. Delay may be fatal to sight, and many eye troubles can be cured or arrested if cared for in time.

While certain drugs, especially some so-called weight-reducing medicines, or fat oxidizers, have been found to cause cataracts, none has been discovered which will prevent or always retard their progression. Numerous other wishful methods of treatment have been devised, such as eye exercises, heat and light, but no such treatment has been found that results in a predictable cure in even half the cases tried.

Nearly all eyes with poor vision as the result of cataract alone can be helped. Many of these eyes may gain normal vision, and most, if not all, may gain useful vision by the removal

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of the opaque, clouded lens. The method of removal has been so greatly improved that it results satisfactorily in nearly every case. Various methods for removal of a cataract are known. In early times, the lenses were depressed away from the pupil into the rear part of the eye. About one hundred years ago the modern method for removal of cataracts was initiated. At the present time, the crystalline lens, or cataract, is completely removed from the eye. Sometimes the outer of the two covers, or capsules, of the lens is not removed; this is known as the extra-capsular method. Sometimes the lens and both capsules are removed at one time; this is known as the intra-capsular method. The extra-capsular procedure has been practised for many years and can be used in every case of senile cataract. The intra-capsular method for removing a lens is a newer development, and, when it can be used, it has some definite advantages over the extra-capsular operation. The great improvements of local anesthesia within the past few years have immensely improved the results obtained in all these operations.

After the cataractous lens is removed, the eye cannot see well unless a spectacle lens of sufficient strength is used to replace that which was formerly supplied by the natural crystalline lens. A glass lens is now placed outside the eye and worn just as an ordinary pair of glasses. If a favourable result is obtained, one pair of glasses is worn for distance, and a different pair for near vision, or else a bifocal lens may be used, just as in ordinary life. The entire procedure may be stated simply as the removal of a useless, cataractous lens and the substitution of a clear, usable glass lens that is worn as easily as any other pair of glasses.

The prevention and cure of poor vision by the removal of a cataractous lens is a truly remarkable, almost miraculous, medical accomplishment. Words are inadequate to express the drama of restored sight. A person who can again use his eyes is elated with his freedom from dependence on others, and with the realization that the beauties of a world of colour and form and motion have been restored to him.

COMING NEXT MONTH

YOUR "NIGHTLY DOZEN"

* *

TOYS AND CHILDREN

* *

ACHING FEET

* *

YOUR VENTILATION SYSTEM

* *

GIVE YOUR EYES A CHANCE

* *

CROOKED TEETH

* *

GALL BLADDER DISEASES

* *

KNOW YOUR HEADACHE

* *

THE DOCTOR SAYS

* *

HOME AND CHILDREN

Even the common wire nail has been improved. The new type has a notch in place of the point and is claimed to be non-splitting.

* *

A new cement, for use in concrete flooring, is said to drive away insects, kill bacteria, and prevent the formation of molds. It also dissipates static electricity.

* *

An appliance manufacturer announces an electric washing machine that can also, by the use of attachments, wash dishes, peel potatoes, churn butter, and freeze ice-cream.

* *

A new household electric light switch can be set for delayed action up to three minutes.

"American Exporter."

* *

New Lamp Approaches Brilliance of Sun

Artificial light fully as brilliant as that of the sun has come within the range of possibility. In experiments recently disclosed, a microscopic source of light—not more than three one-thousandths of an inch in diameter—produced one-sixteenth of the sun's brilliance; the rays emitted could be viewed only through extremely dark glasses. The inventors, W. B. Buckingham and C. R. Deibert, both engineers of the Western Union Telegraph Company, in presenting their findings to the Optical Society of America at a recent meeting in Cleveland, Ohio, called the new "concentrated arc lamp" the means for hitherto impossible exactness in optical work and for great improvements in motion picture projection and in photo enlarging.

Normally light is produced by a flame, an electric arc, or the glow of a wire in a vacuum. Thus the source is limited by the melting point of the

material used. The concentrated arc lamp overcomes this limitation. The metal, zirconium, is lodged firmly on one of the two electrodes. As the lamp goes into operation, the zirconium melts, and the molten mass, tiny as it is, emits light ten times as great as that of the usual tungsten-filament lamp, or 65,000 candles per square inch. The rays, moreover, are parallel to each other, and no focussing is needed.

Another illumination improvement, giving three times the light of a traditional 1,000-watt incandescent lamp, is a new air cooled mercury vapour lamp. Fourteen inches long, but less than four inches in diameter, it is designed for sports arenas and high-ceilinged factories. Mercury vapour at a pressure four times that used previously fills a quartz tube which in turn rests in a glass bulb. The vapour-filled space inside the quartz tube is about the diameter of a cigarette and twice its length.

Seeing Through 15 Miles of Darkness

An "eye" that can penetrate 15 miles of darkness was invented by a group of chemical researchers under Dr. Donald H. Andrews at Johns Hopkins University at Baltimore, Maryland. Developed too late to be of use during the war, the "super-conducting bolometer" distinguishes itself by showing, with the help of infra-red waves and a scanning device such as a cathode ray oscilloscope, the actual out-lines of the object viewed. Previous devices using infra-red rays only registered the presence of an object on needle instruments.

In contrast also to radar sets, which emit high frequency waves and trace objects by the waves reflected, the bolometer is only a receiver. It registers waves emanating from a body warmer than its surroundings, is sensitive to impulses as short as one-thousandth of a second, and operates in temperatures as low as 432 degrees (Fahrenheit) below zero. The intensity of the heat emitted by the body shows itself in the relative whiteness of different parts.

Peace-time use of the bolometer is said to range from fire warning to iceberg detection and cancer research.

Forecasting Approaching Storms

Forecasting of approaching storms, hurricanes and typhoons at distances up to 1,000 miles has become a possibility through one of the most important observations on earth-motion made at the first atomic bomb test last summer, in the desert lands of New Mexico, in the western United States.

Dr. L. Don Lee, seismologist of Harvard University, recently amplified his initial report on the findings under conditions which for the first time duplicated a natural earthquake with energy sufficient for recordable results. The facts gathered differed widely from theoretical expectations. It turned out that the greatest part of the energy was carried in the earth by two hitherto unknown types of waves: the "coupled wave," and the "hydrodynamic wave."

These two waves, in the words of Professor Lee, are as "fundamental to seismology as atomic structures are to nuclear physics." Besides helping to predict storms by discovering "microseisms" or small quakes, they will help determine the proper use of blasting in oil prospecting or mining, to map buried bed rock needed for the support of large structures, and to devise ways to control vibrations from machinery.

Sulfa Drugs in Combination

Sulfa drugs can be made more effective by using them in combination with certain synthetic dyes, Prof. F. S. Thatcher of McGill University at Quebec discovered. The dyes found most effective in this way are known as methylene blue and brilliant cresyl blue.

Is Fluorescent Light Harmful?

Does fluorescent light possess harmful qualities not found in other forms of artificial illumination? The Council on Industrial Health of the American Medical Association says "No."

Following an investigation by a joint committee on industrial ophthalmology, the Council, through its secretary, C. M. Peterson, M. D., reports in *The American Medical Association Journal* of August 25:

"Fluorescent lighting is not harmful to vision. It should not cause eyestrain if properly installed and used."

It was found that the light from fluorescent lamps resembles daylight more closely than that from tungsten-filament lamps. "This colour resemblance to daylight," the Council reports, "is a desirable quality," adding:

"Infra-red energy found in fluorescent lighting as now manufactured produces no known physiologic effect except that due to heating. Fluorescent light generates less heat per candlepower than tungsten lamps.

"Glare occurs in any system of lighting.... Excessive light may produce symptoms of eyestrain in susceptible individuals regardless of source. Constitutional factors should be corrected as well as the amount and kind of light."

Improved Stainless Steel

A war-tested stainless steel with improved hardening quality and workability has been introduced into the peace-time market by the Carnegie Illinois Steel Corporation of Pittsburgh, Pennsylvania. "Stainless W" is a multiple-purpose alloy of the working steel class. It combines the vital industrial properties of high strength and corrosion resistance with improved stability in hardening processes by heat, which in the case of "stainless W" do not lead to warping or dimensional changes. The new steel is available in strips, sheets, tubes, and as wire, and is especially suitable for wrought and cas. forms in the machinery field.

Textile Developments

New developments in chemistry are about to bring great changes in textiles, according to the magazine *Industrial*

and Chemical Engineering. In the offing are new satin and silk-like fabrics; soft nylon thread for sweaters and wool-like socks; rayon which recovers fully after stretching, and soft, stain-resisting materials for upholstery. In a New Jersey mill, engineers have succeeded in turning raw cotton into fabric cotton without spinning or weaving; instead, a resin binder holds the fibres together.

A special form of fibre-glass yarn has been successfully used to fill root canals of teeth, according to the *Dental Digest.* The fibre glass has great tensile strength, high-dimensional stability, is non-toxic, non-irritating and permits observation of the canal filling by means of X rays.

Synthetic Vitamin A

Vitamin A, usually gained from fish-liver oil, and important for eye health and children's growth, has been produced synthetically since early in the war, Professor Nicholas A. Milas of the Massachusetts Institute of Technology revealed recently in the American Chemical Society. The biological potency of the new product is said to be 50 to 100 times greater than that of cod-liver oil.—*USIS.*

HOME AND CHILDREN

If a Talking Doll Could Talk

ADNA BYRD

WHEN I came from the factory to the big department store, I was the grandest doll of the big doll family. A little woman with a smily mouth and soft brown eyes unpacked me from layers of tissue paper.

"Oh," cried the little woman when she had brought me out to the light. "Did you ever see such a magnificent doll." Her smily mouth became smilier. And her soft brown eyes sparkled.

An admiring crowd gathered round. They used many "Oh's" and "Ah's" and exclaimed, "Isn't it a darling?" "Lovely." "A wonderful doll."

I was a grand doll. I stood fully twenty-nine inches tall. My figure was perfect. My face was lovely. Curls of real hair adorned my head and hung down to my shoulders. My clothes were of silk and beautifully made, and I wore pretty patent-leather slippers. When I lay on my back, my eyes closed, letting my long lashes touch my cheeks. I was a sleeping-doll.

The brown-eyed woman turned me over and I cried "Mamma." I was a talking doll. Indeed I was the very doll to bring joy to the heart of some little girl.

A man with a shiny bald head and a little twitchy moustache came. He had me all to himself then. He examined me as thoroughly as a doctor would an athlete before a contest. He put me through all my paces and seemed satisfied.

He called to the little woman who had been unpacking dolls as fast as her hands could work. She came and together they placed me on a shelf, with my arms held appealingly out. A bright light cast its beam down upon me. I was at my best.

"Lovely!" said the little woman.

And the man nodded his satisfaction. Then he placed a cardboard to my left.

"Oh, dear," cried the little woman. "We can never sell *that* doll. Seventy-five rupees for a doll!"

The man laughed.

"This doll," he said, "is to show. We have a thousand other dolls to sell. They will come to see this doll and buy the other dolls."

That was true. There were dolls to the right of me, dolls to the left of me, and dolls beneath me. There were all kinds.

Many, many people came. They admired me, but they carried away the other dolls done up in cardboard boxes, wrapped in pretty red paper.

Charming little girls admired me. They longed to hold me in their arms. And how I often wished I could leap down off that shelf into their eager arms. Oh, what fun that would have been! It is sad and lonely sometimes to be so wonderful and grand.

Days went by. Christmas drew nearer and nearer. Many of the dolls about me had been sold and carried away to become the treasure of some little girl. Only a few remained.

The little woman felt sorry for us. She clucked over us like a motherly old hen. One day I saw tears in those soft brown eyes as she stood regarding me. It had been right after the man with the shiny bald head and the twitchy moustache had come along and said, "You may pack away that doll this evening."

"Oh, Mr. Smith, please, let's show her another week. The children admire her so much."

"Ah, hum! Well you may show her until after New Year's. We have done well with our dolls this year—exceptionally well. We have only a few of them left."

"There will be last minute shoppers. I doubt if we'll have a doll left, except of course the big one. It is three hours yet until closing time."

People came crowding in, eager, hurried. Those last three hours were busy ones for the little woman. Yet no one wanted me, although I was the object of much admiration.

Christmas passed. I had been placed in the big glass window to show over the Christmas holiday, and there I was seen by many as they passed.

One day a lovely lady with a tall handsome man came walking slowly by. Their faces were sad and sorrowful. Then they saw me.

"Oh!" gasped the lovely woman. "Gerald, look at the big doll."

They stood admiring me a brief moment. Then the woman turned away. She began to weep.

"Oh, Gerald, I can't bear it. Gerald, if only we could rouse her interest."

"There, there, don't take on so. But I say, maybe this doll—"

The couple came back to look at me. It was late and the store was

closed. They left but they returned, and the man with the shiny head and the twitchy moustache was with them. His face was beaming and his moustache twitched and quivered comically. I felt sure something exciting was going to happen. The man unlocked the door and held it open for the handsome man and the lovely lady to enter. Then he came to the window and carried me to the counter, where he showed the man and woman that I could walk and talk and go to sleep. Oh, how I wished the lovely lady would carry me away in her arms! And she did!

She carried me to a car. We rolled away and stopped in front of a big building. The man and the lovely lady went up a stair, walked along a corridor into a beautiful room. A young woman dressed in white with a white cap on her head admitted them.

There lay a very, very sick little girl. There was no interest in her dear face. Her eyes were dull with suffering. The lovely lady carried me to the bed.

"See, darling, what mother and daddy have brought their little girl."

The little girl's eyes opened wider; a faint smile came on her face. She tried to reach up her arms to take me, but she was too weak. The lovely lady put me in her arms and folded them about me. Oh, how I thrilled to the touch of those soft little arms!

To make a long story short, that is how I came to go to the hospital to help a nurse coax a little girl back to health. For from the very hour I came, the little girl began to get better. When she slept I sat on the foot of the bed where I could keep watch over her. When she was awake she would hold me lovingly in her arms or watch me as the nurse would hold me on my stomach and I would cry, "Mamma." That delighted the little girl. But she liked to see me walk, too. Oh, we had great fun together!

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, and make questions short and to the point.

GENERAL DEBILITY: Ques.—"I am twenty-five years old, five feet six inches tall and weigh 112 pounds. Though I am not suffering from any disease I look sickly. Please suggest something to improve my health."

Ans.—The very brief description which you have given of your condition gives me very little information upon which to give you advice in regard to your health. Any one who has the appearance of being sickly would be well advised to have a careful physical examination, learning the condition of your blood, getting a urine and stool report to ascertain whether there is any kidney or bowel complaint, and submit this clinical laboratory report to a competent physician for advice on the basis of the information contained. If the clinical laboratory examination and the general physical examination reveals no specific cause for your apparent sickly condition, I can only advise some good tonic and a liberal intake of vitamins to supplement a good, nourishing diet.

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ALLERGIC TO MILK: Ques.—"When I take milk for sometime my eyes get red and the blood rushes to them. They become very irritable and I want to rub them. When I stop taking milk they become normal again. Can you help me out of this trouble?"

Ans.—I must state that the trouble which you have mentioned is one which I have not met previously. It is obviously some form of allergy which you have developed for milk. It would appear that the only safe course for you is to leave milk and milk products out of your dietary. I am not of the opinion that you will be able to get satisfactory desensitization to milk. This is likely a congenital thing and one concerning which there is very little that can be done.

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SUPERFLUOUS HAIR: Ques.—"Could you kindly inform me whether or not self-treatment, to remove superfluous hair by electrolysis, is possible, and where the necessary apparatus is available, the address of the stockists in India or abroad, and the approximate cost for the treatment?"

Ans.—The question you have raised in regard to depilatories is one concerning which there is still considerable question in the minds of conservative physicians. I should not consider it a safe thing to attempt the application of this treatment in your own home. Only in the hands of a skilled dermatologist would such treatment be really safe. Unfortunately such equipment is found only in the larger centres and is not of accessibility to those who are located in the districts. The equipment for carrying out this treatment is costly and it will be quite out of the question to be accomplished privately in your own home. I am sorry I cannot encourage you further along this line.

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ASTHMA AND SNEEZING: Ques.—"I suffer from asthma and incessant sneezing. The sneezing starts as soon as I come out of a cinema hall, or a closed railway compartment, also dust and perspiration, after strenuous exercise, brings on the sneezing. I shall be much obliged if you will kindly advise me if there is any method to remedy these conditions which are impossible to avoid."

Ans.—I must confess that in speaking of the question of allergy and its related conditions, such as asthma, we are dealing

with one of the most difficult problems in medicine. Some cases are more simple than others. If it can be learned that two or three very specific materials are responsible for the allergic manifestation, it is a simple matter to desensitize the individuals to these materials. On the other hand, tests to such common specific irritations as road dust, house dust, and the contacts in public conveyances, is indeed a very difficult one to carry out. Most ear, nose, and throat specialists might not be prepared to carry out the desensitization necessary to determine the primary offending material. This work is usually best done by skin specialists who are usually prepared to do this kind of work. If it is possible to gain any desensitization from these offending materials from any source, it will probably be from some skin specialist that you would get your greatest help. You mention the possibility of relief by cauterization. I would be inclined to question the advisability of this procedure as a means of desensitization. Some patients gain considerable benefit on a programme of heavy intake of vitamin C, ascorbic acid in any form, along with a moderate use of ephedrine nose drops to keep the nasal membrane shrunken down to somewhere near its normal condition. I am sorry it is not possible to give you more specific suggestions than this on so difficult a problem.

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TUBERCULOSIS OF THE BONE: Ques.—"Six months ago I had an abscess on my left thigh. It was operated upon but has not healed as yet, and there is a discharge of pus, and also pain. I consulted a bone specialist and he said it was due to tuberculosis of the bone and suggested a plaster cast and a complete rest for three months. But a nature therapeutist assured me that steam baths and wet mud packings on the thigh would cure the disease. He also suggested a diet of fruit juices, raw vegetables, and greens. Which treatment do you think is more reliable and to be followed?"

Ans.—Your physician who suggested the possibility that this abscess is due to tuberculosis of the bone, was certainly making a consistent and probably correct observation. However, it would be advisable to have careful X rays of the area involved to determine what portion of the bone, if any, is involved with tuberculosis. Such bone involvement usually shows up quite clearly in X-ray pictures, which are most helpful in diagnosis. In case tuberculosis is found, the plaster-of-Paris cast, which keeps the body carefully immobilized for a period of time, is certainly well advised therapy. As to your nature therapeutist's suggestion in regard to diet, I would say that this would certainly be consistent so long as you are getting a very complete and adequate diet. It would, of course, be impossible to combine his suggestions of steam baths with the obvious need for keeping the affected portion in a plaster-of-Paris cast. His dietetic suggestions are good as applied to the general maintenance of health, but, in any case, there is the need for a very complete, well rounded diet while recovering from this possible tubercular infection.

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CONSTIPATION: Ques.—"My mother suffers from constipation, and frequent headaches. Purgatives are of no use. My sister, fifteen years old, has occasional fever and headaches and vomiting. Four years ago she had a fall and fever followed. What is the reason and is there any cure?"

Ans.—In a case of this kind it is essential that attention be given to other matters than the intake of medicine. The patient should drink large amounts of water, preferably in the form of fresh lime and orange juice. She should have at least two glasses of pure orange juice daily. She must get a reasonable amount of exercise, such as that provided in vigorous walking or other body movements. She should include in her diet those things which will be inclined to loosen her bowels, whole wheat chappattis, figs, papaya and other fresh fruits and leafy vegetables. A considerable amount of papaya taken daily is definitely helpful. Add to this two or three vegetable laxative tablets daily. Your sister's condition is more or less a complicated clinical case. It would be quite impossible to give any suggestions without a careful examination and the necessary laboratory work. You should consult a good physician relative to her case.

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BREATHLESSNESS: Ques.—"I am unable to walk any distance beyond 100 yards, or do any work which is at all strenuous. It throws me into a state of exhaustion and I have difficulty in breathing. Doctors say there is nothing wrong with my heart, lungs, or stomach. I used to be a heavy smoker but have given it up. Please advise me as to what treatment I should take."

Ans.—After noting carefully the symptoms which you report, I feel that there is a strong possibility of some residual heart condition which is responsible for your shortness of breath. Anyone who is other-

wise apparently in sound health, who has had definite damage to the heart previously, and who is now suffering from shortness of breath and early exhaustion on even a limited amount of exercise, would have to think first of the possibility of the heart being the cause of this condition. As such cases are often extremely complicated and require careful observation from time to time, I would advise that you place yourself under the care of a physician in whom you can have absolute confidence as to his ability to deal with heart cases. He will be best able to advise you and guide you safely back to a reasonable degree of health.

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CHIKOOS; SUGAR-CANE; BANANAS; CITRUS FRUIT: Ques.—"1. What is the nutritional value of "chikoos"? 2. Is sugar-cane a good substitute for fruit? Is the juice harmful to old people? 3. Are bananas classed as good fruit or do they contain too much starch? 4. If citrus fruit do not agree with one suffering from chest troubles, would you please suggest a good substitute?"

Ans.—The information for which you have written in regard to the nutritive value of "chikoo" fruit is best obtainable through the Government Institute at Coonoor. If they are unable to give this information, I would not know to whom you could turn for an analysis of this food. One of the best texts issued by the Government of India giving information of this kind is now out of print, and we have no word as to when the new edition will be out. 2. No information is at hand as to the vitamin content of sugar-cane. Nutritionally it contains much the same carbohydrate value as some of the sweeter fruits. However, its value is limited to the carbohydrate content, with a small amount of mineral and some vitamin value. Under ordinary circumstances there should be nothing harmful in the use of this cane juice by elderly people. 3. Well ripened bananas are good food both for old and young. Bananas do contain a certain amount of carbohydrate in the starch form. This is not against them. They also contain a moderate amount of vitamins A, B, and C, and should be regarded very highly as an all round food. The bananas on the Bombay side are of excellent quality and may be used without fear by most people. 4. The recommendation of citrus fruit for chest trouble would be for the purpose of obtaining as much of the vitamin C content of this fruit as possible. If citrus fruit does not agree, it would be well to use ascorbic acid in any form available, as well as whatever fruits are most satisfactory to the particular individual concerned.

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EXERCISE: Ques.—"I am forty-three years old and have played hockey since boyhood, but have not played for the last four or five years, and I now want to start again. Do you think it will be all right to do so? Since 1941 I have been troubled by distention and stiffness of the stomach especially after meals. Kindly suggest some treatment."

Ans.—I have noted your description of your physical condition, particularly in regard to your general habits of life. You speak of the possibility of resuming your hockey. Hockey is at best a strenuous game, but I should say not too strenuous for a man of your age. However, having discontinued it for a time and apparently having taken on a bit of fat, I should feel it advisable that you start off more or less gradually and work up if you see that you tolerate it. This is a precaution in order that you should not abuse your heart which has not been used to strenuous exercise for some time. You should work up to heavier exercise by gradual stages and thus not endanger the integrity of your heart. As to the bowel condition from which you are suffering, it would certainly be advisable for you to have careful stool examination with the thought of learning as to the possibility of the presence of amœba. Your description suggests very much that way. If it is found, your physician will be able to prescribe the appropriate medication.

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SUPERFLUOUS HAIR: Ques.—"A woman in our family has a beard-like growth on her face. Kindly suggest some remedy by which this could be removed permanently."

Ans.—The only safe and satisfactory treatment for the superfluous hair on the face is by a special electric needle and it is a long and painful process. I do not know whether this treatment is available in India or not. I could only suggest that you contact leading skin specialists in any one of our larger cities to learn whether such treatment is available or not. It is not safe to experiment with medications of an unknown nature in these cases as there may be disfigurement resulting which will be worse than the original condition.

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VITAMIN A: Ques.—"Please recommend some grain, vegetable or fruit or dry fruit or any other foodstuff rich in vitamin A, at a low cost and obtainable all the year round."

Ans.—You have inquired as to what may constitute a low cost source of vitamin A. Perhaps the greatest yield of vitamin A per rupee of expenditure would be in a good grade of shark-liver oil. It is true that many fresh fruits and vegetables contain a reasonable amount of vitamin A, but not in such significant quantities as is found in the fish-liver oils.

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RUPTURE: Ques.—"Will you kindly give me your suggestion for a nature cure of rupture?"

Ans.—You have asked for a cure for rupture by some form of nature remedy. You must bear in mind that a rupture is the failure of the abdominal wall to support the organs inside, and actually constitutes a sort of blow-out at a weak point in this abdominal wall. As this is a structural failure, there is no chance of repair of this damage except by a structural repair of the condition. This, of course, requires surgery. I know of no cases where natural cure has been of any benefit in a frank case of rupture.

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OLIVE OIL; BLACK SPOTS BEFORE EYES: Ques.—"1. Is there any harm in taking olive oil daily? 2. My sister has weak eyes, and when she reads, black spots seem to move before her eyes. What should she do?"

Ans.—1. There would be no harm whatever in taking a moderate amount of olive oil. 2. As to the black spots which your sister notices moving in the air or on the book, I would say that it may be due to some particles sometimes found in the anterior chamber of the eye. They are more frequently found in older people, though they may appear in young people as well. They are ordinarily not of dangerous significance. However, if she is having trouble with her eyes, she should certainly have a careful eye examination by an opthalmologist.

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PITUITARY GLAND: Ques.—"Please suggest some exercise to invigorate the pituitary and thyroid glands."

Ans.—There is really no specific treatment for actuating the pituitary gland. If there is a pituitary gland deficiency, there is a substance available which can be injected to increase certain bodily functions which depend upon the pituitary gland. The same is true of the thyroid gland.

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VITAMINS AND MINERALS: Ques.—"As skin diseases such as eczema and others may be attributed to a lack of vitamins and minerals, please recommend a diet which will include a good amount of vitamins and minerals which would give relief to the above-mentioned skin diseases."

Ans.—There may be some relationship between the vitamin intake of the body and the ease of healing of certain conditions. It would be difficult to state that

eczema and other skin troubles are definitely due to lack of vitamins or minerals. It is true that epithelial integrity is, in some way, dependent on the presence of adequate amounts of certain vitamins, particularly vitamin B, though vitamin C is also in some way associated with speed of healing. Fresh vegetables, whole wheat and whole wheat products, and fish-liver oils are good sources of essential vitamins and minerals.

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UNABLE TO WRITE: Ques.—"Since 1929 I have had discomfort in my hand whenever I wanted to write. This went on until 1942, and then whenever I attempted to write the hand would twist round and would not write at all. I have consulted good doctors and psychiatrists, but they have not been of any help. I do not remember having had an accident or an illness which might have affected my hand. For all other work it is perfectly normal. There is no pain or visible unnaturalness. I smoke and drink occasionally and am a non-vegetarian."

Ans.—I have noted with much interest your report on the condition which has developed on the control of your right hand. It is quite obvious that this is a neuropathic problem and one which could be studied intelligently only by a highly skilled neurologist. You have, doubtless, already contacted a good neurologist, and it is quite doubtful if you will be able to find any remedy for this condition which you are carrying. Functional conditions of this type do not often yield themselves to any form of medication. If you have the opportunity of further consultation with reputable neurologists, it would, of course, be worth your while to have such examination.

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SQUINT; COLDS: Ques.—"My three-year-old son's eyes squint. Kindly give me some advice as to how to correct his eyes. 2. Four of my children catch colds very often. How can I prevent this?"

Ans.—Eye squint in a child is indicative of an actual deformed condition of the muscles of the eye. The child should be carefully examined by a skilled eye specialist. Such a specialist will be able to determine whether any radical procedures are necessary for the correction or whether conservative measures will be adequate. There is doubtless a good eye specialist in your mission hospital at Nagercoil; or failing this, the Madras General Hospital is one of the best eye institutions in the Orient. 2. As to the children who are frequently getting colds, it would be well to have the older ones examined to see whether there are chronically infected tonsils which might be the cause of this trouble. If such should prove the case, the offending tonsils should be removed. In the cases of the younger children, I would suggest that you give them large amounts of orange juice and that this be fortified by giving them regular dosages of vitamin C in any form in which your chemist may have it available. Give up to two or three hundred milligrams daily to each child.

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BLACK SPOTS: Ques.—"I have black spots on my face, and the medicines I have applied have all failed. What should I do for them?"

Ans.—I am sorry to state that there is no specific medication which will safely remove the deepened pigmentation of the skin. Many cases of attempted clearing of these spots have resulted in an aggravation of the condition. Such treatment, therefore, cannot be recommended.

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ANÆMIA: Ques.—"What should I do to rectify an anæmic condition?"

Ans.—Anæmia may be the result of a wide variety of causes. In India, hook worm, malnutrition, beriberi, amœba, and other causes may underlie an anæmia. There is little use to attempt to treat the anæmia until the cause has been discovered and cleared up. This can be done in a careful laboratory check-up by a competent physician.

?

SPECIALISTS: Ques.—"I shall be glad to know who are your specialists in 'thyroid excess,' or goitre."

Ans.—I fear you have gained the wrong impression as to the purpose of the "Doctor Says" column. It is not the intention of this magazine to conduct a free medical service. It is true that the service which we render medically is entirely a free one; however, it is conducted purely from the standpoint of discussion of specific subjects or topics which will be of interest to the reading public. If you have specific questions concerning your physical condition which will be of interest to readers generally, then send them in and we will be glad to give consideration to such queries. Please note, however, that it is not the intention of this department to act as a consulting medical service.

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ORIENTAL WATCHMAN
JUNE SUPPLEMENT 1946

THE MENACE OF MODERN MATERIALISM

Day of Reckoning at Hand

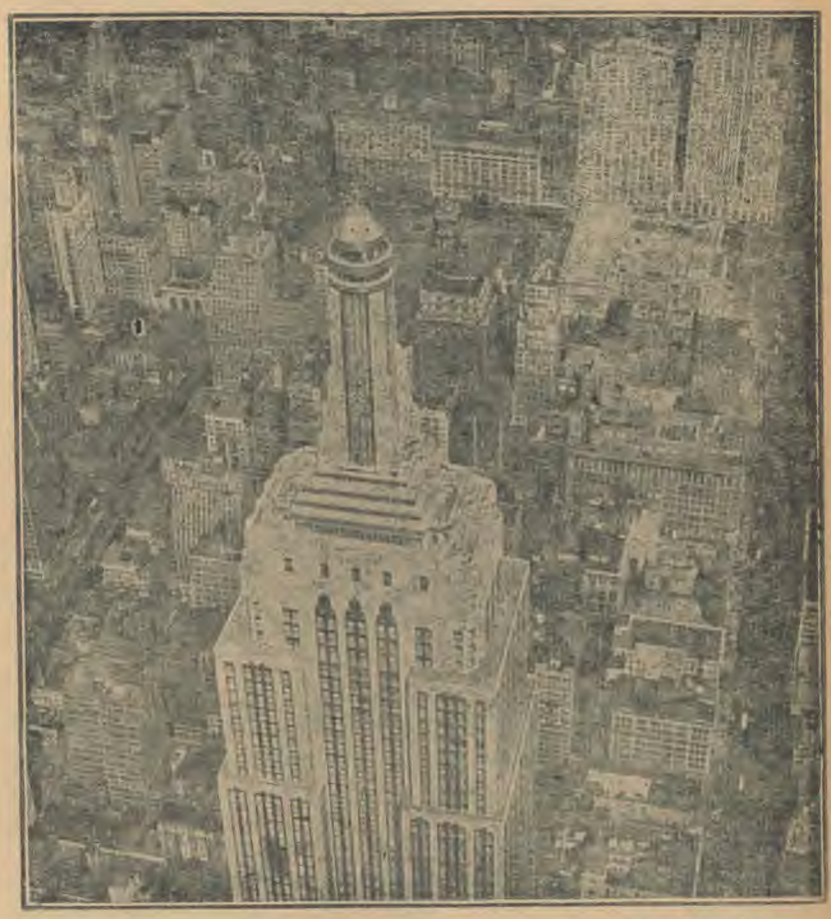
W. G. WIRTH

IN ONE of his exalted musings the poet Shelley longed for "such society as is quiet, wise, and good." It is at once evident that the English bard would be discouraged if he sought for that kind of society in the world of today, for in not one feature of the desired trinity of idealism does it qualify.

To get a realistic picture of the character of our social fabric, all we need to do is to resort to such an authority as J. Edgar Hoover, head of the FBI. He certainly ought to know, for it is his particular responsibility, and that of the valued organization he directs, to see that society is kept on an even moral keel, and that all contrary movements that would harm it are suppressed or denied development. In article after article in many of our popular periodicals and magazines, Mr. Hoover warns us that human society is in anything but a healthy character condition. And to make the picture darker, Mr. Hoover holds out nothing but anxious fears as to our moral status in the future. The FBI leader is no black-frocked preacher, with doleful tones and jeremiad gloom. He is a scientist, a student of human facts. He sees objectively. He knows full well that while there are many of us who are noble, upstanding citizens of the commonwealth, guided by sound moral and spiritual standards, there are all too many who—

> in the path of social life
> Do bask their spotted skins in Fortune's sun
> And sting the soul.

But if Mr. Hoover is substantiating facts, he is at the same time verifying prophecy. Strikingly—and how this *does* prove the inspiration of the Good Book—almost two millenniums ago the apostle Paul left this record: "This know also, that in the last days perilous times shall come. For men shall be lovers of their own selves, covetous, boasters, proud, blasphemers, disobedient to parents, unthankful, unholy, without natural affection, trucebreakers, false accusers, incontinent, fierce, despisers of those that are good, traitors, heady, high-minded, lovers of pleasures more than lovers of God; having a form of godliness, but denying the power thereof: from such turn away." 2 Timothy 3:1-5.



An aeroplane view of the top of one of the world's tallest buildings. The Empire State Building, New York City.

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With this undeniable portrayal before us, let us examine the pigments that go to the painting of this painful picture on the social canvas of our day. One of them is the intense materialism that has benumbed our moral and spiritual sense. As a result of our mastery in science and mechanics, we have forced the earth to supply to the full its minerals, its chemical elements for our use in industrial production and commercial exchange—and for our abuse in the increasingly devastating and annihilative operations of war. This plethora of materialistic *things* and *procedures* has sown the wild oats of human breakdown in the field of our daily living. Instead of safeguarding character as the finest expression of our being, it has put the emphasis altogether too much on secular career; instead of keeping on top moral motivation as the ascendant human virtue, it has caused us to degenerate to the regimentation of an all-too-apparent mechanical movement. It has tempted man to glorify his works, to the disregard of his soul.

It is small wonder that Dr. Alexis Carrel, in his best seller of a few years ago, *Man, the Unknown* wrote revealingly: "In learning the secret of the constitution and of the properties of matter, we have gained the mastery of almost everything which exists on the surface of the earth, excepting ourselves."—Page 2.

"We realize that, despite the immense hopes which humanity has placed in modern civilization, such a civilization has failed in developing men of sufficient intelligence and audacity to guide it along the dangerous road on which it is stumbling. Human beings have not grown so rapidly as the institutions sprung from their brains."—Page 22.

"Man should be the measure of all. On the contrary, he is a stranger in the world that he has created. He has been

incapable of organizing this world for himself because he did not possess a practical knowledge of his own nature. Thus, the enormous advance gained by the sciences of inanimate matter over those of living things is one of the greatest catastrophes ever suffered by humanity. The environment born of our intelligence and our inventions is adjusted neither to our stature nor to our shape. We are unhappy. We degenerate morally and mentally. The groups and the nations in which industrial civilization has attained its highest development are precisely those which are becoming weaker. And whose return to barbarism is the most rapid. But they do not realize it. They are without protection against the hostile surroundings that science has built about them. In truth, our civilization, like those preceding it, has created certain conditions of existence which, for reasons still obscure, render life itself impossible."—Pages 27, 28.

We cannot help but wonder what this outstanding French scientist would write in this book now in the light of atomic energy and the atomic bombs that struck Hiroshima and Nagasaki. Our materialistic might has indeed become wonderful. It has bewitched us into being content to make a heaven on earth through its conveniences and comforts, beclouding our vision of that only true and glorious "new heaven and a new earth" which a kindly God will give to His people, where "there shall be no more death, neither sorrow, nor crying, neither shall there be any more pain." Revelation 21:1-4.

Robert Louis Stevenson was wrong when he sang:

"The world is so full of a number of things,
I'm sure we should all be as happy as kings."

We have had "a number of things," but instead of their making us "happy as kings," they have magnified our cares, our selfish ambitions, our sinful competitions, our slavery to the flesh instead of freedom in the spirit.

Note this statement of John D. Rockefeller, Jr., one of our country's wealthiest and most practical men. If anyone knows what materialism is and what it has given us, it is he. "The real purpose of our existence is not to make a living, but to make a life."

With profound insight, this capitalistic leader recognizes that for each one of us life is divided into two factors, the *means* by which we live, "to make a living," as he puts it, and the *ends* for which we live, or "to make a life." Inasmuch as the ends are always greater than the means, Mr. Rockefeller knows, as we all must know, that it is only as we successfully attain them that life is made worth while.

We would not be misunderstood. Material benefits are not in themselves an evil. We have to live in this world, and if our living can be bettered by increased materialistic means, so much to the good for all of us. Our Lord Himself said: "All these things shall be added unto you." Matthew 6:33. The evil is in our allowing things to become our master, to cheat us from the possession of the higher values of life.

When Paul opened his category of the social evils of our time with the words, "for men shall be lovers of their own selves, covetous," he was directly referring to modern materialism and its blighting influence. Few men, of course, love money for itself. Most of us have common sense enough to know that it is what we can possess through its exchange, that gives it value. And since our scientific and mechanical age has given us vastly more things to enjoy, the demand has advanced to get hold of more and more so we can possess them. It is right here that one of our Lord's parables fits as a warning:

"He said unto them, Take heed, and beware of covetousness: for a man's life consisteth not in the abundance of the things which he possesseth. And He spake a parable unto them, saying The ground of a certain rich man brought forth plentifully: and he thought within himself, saying, What shall I do, because I have no room where to bestow my fruits? And he said, This will I do: I will pull down my barns, and build greater; and there will I bestow all my fruits and my goods. And I will say to my soul, Soul, thou hast much goods laid up for many years; take thine ease, eat, drink, and be merry. But God said unto him, Thou fool, this night thy soul shall be required of thee: then whose shall those things be, which thou hast provided? So is he that layeth up treasure for himself, and is not rich toward God." Luke 12:15-21.

The "night" is soon to come when Jesus at His return (for He will come "as a thief in the night," 1 Thessalonians 5:2) will make a reckoning with human society; and then what about our materialism and its fleshly benefits and pleasures? May it be that we shall lay up those spiritual treasures of faith, obedience, and hope that shall win us entrance into the better world.

CAN CIVILIZATION SURVIVE?

Does the Atomic Bomb Foreshadow the End?

W. L. Emmerson

THE smoke clouds have drifted away from the fearful scenes of desolation that once were the great Japanese cities of Hiroshima and Nagasaki.

But the relief of mankind everywhere at the submission of the last of the aggressor nations of World War II is overshadowed by apprehension at the fearful power whose unleashing brought hostilities to so sudden an end.

"We have felt, and reacted, emotionally, to the initial shock of the atom bomb," says the London *Tribune*. "Now we are beginning to *think* about it."

The imagination reels at the thought that these last two bombs of the war held an explosive power 2,000 times greater than the largest bomb previously known. These two engines of death were equivalent to the 10,000 tons of high explosive dropped during the whole air onslaught on Berlin. And they did not merely reduce their targets to ruins, they actually "vaporized" everything at the point of contact.

The United States War Department is not exaggerating when it says that the atom bomb is "a tool of unimaginable destructive Power . . . potentially destructive beyond the wildest imagination."

If ever a new war begins with "a rain of ruin from the air," of which these are but small trial samples, it must spell the doom not of cities, nor even of nations, but of civilization itself. Indeed, Dr. Roy Marshall, Director of the Fells Planetarium, Philadelphia, actually envisions the possibility that "atoms released by a bomb might bombard other atoms, so that disintegration of matter might proceed indefinitely," and bring about the disintegration of the world itself!

No wonder that Dr. C. E. M. Joad, contemplating what General Carl Spaatz has called "the most revolutionary development in the history of the world," described it rather as "the greatest single disaster in the history of mankind."

Unless, therefore, humanity can find an immediate solution to the problem of periodic war, it now faces the certainty of total annihilation in the not-distant future.

"Man has made a thunderbolt," says one leading writer; "unless he can control his own invention—*finis mundi;* the world is destroyed."

If war continues now, warns Field Marshal Smuts, "there will be no more history."

Of course there are those who dismiss from their minds the thought of the threatening calamity and discourse of the "glittering prospect" unfolding before mankind possessed of this "basic power of the universe." It has "set our feet," they say, "on the shore of a new world" in which factories, railways, motor cars, ships, and aeroplanes will run on thimblefuls of atomic fuel; in which transocean atomic rocket planes will half circle the earth in an hour; in which the standard of living will be incredibly increased, want will be abolished, and there will be leisure and pleasure undreamed of for all.

But this is surely the most ostrich-like and dangerous of wishful thinking, and may be dismissed as criminally irrelevant in the face of the stark realities of atomic energy's first horrible use.

There are others, less culpable but equally blind to past history, who assert their belief that the sheer frightfulness of atomic energy will bring war to an end.

One cartoonist vividly portrays a crestfallen Mars remarking to bloated figures representing an arms king and a war profiteer: "Things are looking black, boys. Who will dare to start another war now?"

But all past experience goes to show that new powers of destruction have intensified rather than inhibited the warlike propensities of mankind. War was made not less but more terrible by the invention of gunpowder. The aeroplane, which was to bring the nations into friendly intimacy, has developed into the superbomber. The motor car has turned into a death-dealing tank.

Nobel, the inventor of dynamite, and Maxim, the orginator of the machine gun, were both confident that their inventions would curb or even end war.

The dread apparation of the atom bomb, as it "mush-roomed" out above doomed Hiroshima.

However, they proved but the forebears of the rocket and the atomic bomb.

Increasingly destructive weapons of war, far from reducing the possibility of further wars, have always been eagerly seized upon and added to nations' armouries for the advantage they would confer in the next conflict.

But, argue the incurable optimists, this time we will make sure that the new weapon is under control so that it cannot run amuck in the earth. What a hope! Despite every effort of America and Britain to conceal the processes of manufacture, the atomic bomb is already "loose in a lawless world." Its principles are common knowledge. They have been discussed for years in scientific circles. And now that the dread secret that the atomic bomb is a practical proposition is out, it can be but a few years before every nation will be able to make it, and continuous research will ensure an even more fiendish efficiency and destructiveness.

The atomic bomb cannot be kept as a "police weapon" in the hands of "a few passionless supermen pledged to use it to preserve the peace of the world." It is equally useless to talk of "outlawing" it, for future war-makers would brook no restraint.

Realizing that there is no possibility of keeping the new weapon from possible future aspirants to world domination, many are emphasizing the urgency of building up a world organization which will dispose of the arbitrament of war and keep the peace of the world for all time.

"The production of this terrible menace to our very existence makes it imperative that a world authority for the prevention of war be established without delay," writes Joshua Wedgemond in the London *Times.*

Unfortunately, however, as the same journal remarked in a notable editorial the day after the dropping of the first atomic bomb, while "reason will tell mankind that war is necessarily, with certainty, suicidal, . . . reason will no more avail than the appeal to fear."

Through the centuries the appeal to reason has resulted in an infinite variety of organizations for peace among the nations, but through some deep-rooted unreason in human nature they have always gone to pieces in the crisis.

In the present century the League of Nations was launched under the noblest auspices, but it failed. Now we have the United Nations organization which

President Truman has said is "determined that there shall be no next war." But it is freely admitted that while this new league may quite effectively restrain the small nations, it would immediately be dissolved by any fatal cleavage between the great powers from among whom any future aggressor would be most likely to spring.

So the United Nations organization is no more likely to prevent a major conflict among the great powers than in any other carefully reasoned scheme of world security.

Another group of people, desperately concerned about the future of civilization, here strive to make their voices heard. We know all that, they say, and that is why the only hope for mankind is a world state. While the nations hold on to their independence, "national sovereignty" as they call it, the possibility of their falling out can never be eliminated, and sooner or later is inevitable. The peoples of the world must be united into one world state, and then perpetual peace will be attainable.

But how is this highly desirable unity to be achieved? Who is going to be head of the world state? Would the world be willing to have a British president or an American or Russian or a Chinese? Would even a rota of presidents be acceptable to the diverse nationalities on the earth?

On what kind of constitution would the world state be based? Would it be after the Anglo-American democratic model or the Soviet communist model? Or again, could a synthetic constitution be devised which would meet the views and desires of all mankind?

We need go no further, for it must be obvious that while human nature is what it is, such an assimilation of the multifarious peoples of the earth into a uniform world-wide state is absolutely inconceivable.

For years H. G. Wells has written and lectured about the inherent sanity of mankind and of his conviction that universal enlightenment would one day bring universal peace. But as he has grown old, even he has come to doubt the efficacy of the recipe in which he once had unbounded faith.

"Human history," he wrote in one of his latest books, "becomes more and more a race between education and catastrophe." And he is sadly coming to the conclusion that catastrophe is winning.

The fact is, the atomic bomb has provided the final confirmation of the Bible's dictum about human nature. The explosions at Hiroshima and Nagasaki did more than blast away two great cities. They shattered forever the doctrine of inevitable progress, and mankind stands today on the edge of the abyss to which that fatal fallacy has brought him.

Is there then no hope for our world? Will God permit the earth He created "to be inhabited" to go down in utter and eternal ruin? Will He not step in and wrest from man the power which he has grasped and so misused?

Yes, that is precisely what God is planning to do. When His Son was on earth He outlined to His astonished disciples in one of His great prophetic foreviews the course of this God-rejecting world right on to the very place to which we have come, and then He told them what would happen next.

Luke thus records His words: "There shall be . . . distress of nations, with perplexity [this last expression translated literally means, "with no way out"]; the sea and the waves roaring; 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 21:25, 26.

Then comes the staggering announcement: "And then shall they see the Son of man coming in a cloud with power and great glory." Verse 27.

That is what is going to happen in the moment of earth's direst calamity.

"The kingdoms of this world," which man has proved himself so impotent to order in righteousness and peace, will be taken over by God Himself to become "the kingdoms of our Lord and of His Christ."

He won't, of course, take them over as "going concerns" as some seem to imagine. No, He plans to sweep away with the besom of destruction the wreck which man has made, and rebuild from the foundations.

Listen to what Peter says: "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. . . . All these things shall be dissolved. . . . Nevertheless we, according to His promise, look for new heavens and a new earth, wherein dwelleth righteousness." 2 Peter 3:10-13.

God will not wait for man, in his last terrible experiment, to "vaporize" the earth. He Himself will step in and dissolve the doomed earth and all the works of sin which have brought it to the edge of the abyss. And in its place He will make "new heavens and a new earth" wherein to place those whom He has plucked, as brands from the burning, out of the world which has passed away.

None can know "the day nor the hour" when this stupendous climax of history will take place, but Jesus did say: "When ye see these things come to pass [universal distress, sickening fear, a consciousness of inescapable calamity], know ye that the kingdom of God is nigh at hand." Luke 21:31.

"These things" are precisely the things which we are seeing today. We may, therefore, be sure that "the kingdom of God is nigh at hand," "even at the doors."

How urgent is the warning that "these things" bring to us! How will it be with you in the day of His appearing? Will you be swept away with "the kingdoms of this world" or will you be among those who are delivered from the kingdom of darkness and translated "into the kingdom of His dear Son" to possess the renewed earth forever? Now is the time when you must choose whether you will be on the side of sin or on the side of the Lord. Will you not receive Him and be received of Him now, so that in that day "your calling and election" may be sure?