

# Programs for Our Future Eating

By Bion R. East

What will you be eating tomorrow? Recent researches of the dieticians reveal significant deficiencies in the average American diet. Dr. East outlines the plans and programs of the experts to supply painlessly the missing vitamins.

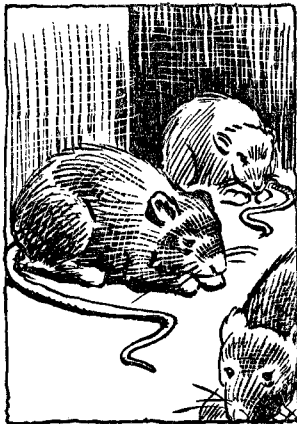
**D**URING the World War, the price of butter was high. The people of Denmark, the great purveyors of dairy products to the world, took advantage of this situation and greatly increased their exports of butter. In consequence, many of their own children had to be fed on skimmed milk instead of whole milk, and margarin made from vegetable oils and pork fat instead of butter. It is probable that few in Denmark gave much thought as to the possible effects of this change in the children's diet; but, by a somewhat curious coincidence, experiments carried out in American nutritional laboratories a short time before showed that it might have the most serious consequences.

A typical experiment bearing upon the Danish situation is the following:

Two groups of rats, of the same age and general physical condition, are fed upon a carefully chosen diet, which is the same for both groups except that all the fat supplied to one group is in the form of butter while for the other group it is in the form of lard.

With the "butter" rats, all goes well. They thrive exceedingly and lead long and active lives.

But with the "lard" rats, the case is very different. Shortly after the experiment is started, they stop growing and usually begin to lose weight. Gradually, they become less and less vigorous, and huddle, with ruffled fur, on the floors of their cages. They now become highly susceptible to bacterial infection. Sores break out in various parts of their bodies; bronchial and lung troubles are apt to develop; the eyelids usually become swollen and inflamed, and unless this inflammation is checked, it may spread to



the eyeball and cause blindness. If the animals are continued on the "lard diet," they invariably die within a few weeks. But if they are given butter in ample amounts before the harm done to them is too great, they usually recover in a surprisingly short time. Thus it is shown that there is in butter—but not in lard—a substance that is absolutely essential for the maintenance of health in

rats. This substance is now known as "vitamin A."

The Danish children who were deprived of butter fat proved that vitamin A is also necessary for human beings. Many of them developed the characteristic eye trouble and other symptoms of vitamin A deficiency, some of them lost their eyesight and some died. Fortunately there were physicians in Denmark able to cope with the situation. Administration of cod-liver oil, which is rich in vitamin A, proved effective in almost all cases; and later, when the Danish Government rationed butter so that all children received some regularly, no further cases of eye trouble developed.

By similar methods, nutritional science is carefully analyzing the properties of our foods, is determining precisely what elements are essential to human health, and upon the basis of this information there is being constantly developed the programs for our future eating. So far, about forty "essentials" have been discovered. Included in the list are nineteen different kinds of protein derivatives, glucose (a form of sugar), eleven mineral elements and at least six vitamins. Each of us must receive regularly a sufficient amount of every one of these substances in order to maintain health. If any one is lacking, or is supplied in insufficient quantities, the inevitable result is disease.

There is, in fact, a specific disease connected with a lack of each of the "essentials." These diseases differ from what is commonly meant by the term. They are not primarily due to germ infection, like pneumonia, or to the improper functioning of some bodily organ, like diabetes—they are simply forms of starvation, and they can be of any degree, from a fatal severity to an almost unnoticeable mildness, depending upon the degree of deprivation.

Paradoxically, the mild cases of these deficiency diseases are far more serious from a public health standpoint than the severe cases. The latter are comparatively rare, and when they do occur are assured of prompt treatment. But millions of people may be badly handicapped by mild forms of some of these diseases without any one being aware of the fact.

Fortunately, research has found that the great majority of the "essentials" are abundantly supplied in common foods and that disorders due to a lack of them occur only under exceptional circumstances. The eye trouble of the Danish children, due to a lack of vitamin A, is a case in point. This ailment is very rare because vitamin A is widely distributed in nature, and it became widespread in Denmark only because of the abnormally restricted diet due to war conditions. But on the other hand, it has been conclusively demonstrated that the great majority of

Americans do not normally receive adequate amounts of all of the "essentials" and that, as a result, we have, as a nation, been deprived of our birthright of perfect health.

The discovery must be classed among the most important made by science. We now know the true causes of many ailments and weaknesses which are brought about by a civilized mode of life, and, knowing the causes, we can correct their evil consequences. The work of the nutritional scientists, therefore, means better health for many of us, and, especially, for our children.

Two great public health problems due to nutritional deficiencies have already been satisfactorily solved. The first of these is the vitamin C problem.

Vitamin C is a substance contained in many fruits and vegetables, especially in oranges, lemons and tomatoes. It is called the "anti-scorbutic" vitamin, because a lack of it brings about the dreadful disease known as scurvy.

Until recently, scurvy was chiefly a disease of distress. It was the scourge of armies on short rations, beleaguered garrisons, the crews of vessels on long voyages, explorers and colonists, but it was rare among people living normal lives. It was therefore a matter of surprise to physicians of about thirty years ago when the number of cases of infantile scurvy suddenly increased in both Europe and the United States. We now know what happened. Raw cow's milk contains enough vitamin C to protect from scurvy most infants receiving ordinary amounts of it. Heating, however, tends to destroy this vitamin, and so when it became common practice to pasteurize or sterilize cow's milk by heating it, large numbers of infants were deprived of this protection.

As soon as this situation was clearly understood, a worldwide campaign was inaugurated to teach mothers the simple remedy—feed babies orange juice or tomato juice as well as milk. Everyone interested in public health and human welfare joined in this campaign of education, and so successful were their efforts that scurvy has been practically stamped out in most civilized communities.

The chemical element iodine provides another case of a widespread dietary deficiency that is now being corrected by science.

Less than one ten-thousandth of one per cent of the weight of the average normal human body consists of iodine, but unless this minute quantity is provided, the thyroid gland enlarges and the condition known as simple goiter results.

The sea is a great reservoir of iodine salts, and those who live near enough to the sea coast to drink water into which dried sea spray has been carried by the winds are rarely troubled with goiter. The same is true of those who live in districts where the soil is formed from rocks comparatively rich in iodine. But in places remote from the sea and where the iodine-content of the soil is low, simple goiter is apt to be prevalent. To mention an extreme case, it was reported a few years ago that many of the men, most of the women, almost all the children and a large proportion of the domestic animals living in a certain western valley had enlarged thyroids.

According to a "goiter map," based on data gained from the military service examinations during the World War, about half of the United States is iodine-poor, the

Great Lakes region and the Pacific Northwest being especially deficient in this respect.

The public health problem in iodine-poor areas is to supply every man, woman and child with small amounts of some iodine compound, such as sodium or potassium iodide.

A careful study of this problem was made in Michigan about ten years ago. It was first proposed

to treat the water supplies with iodine salts, but it was realized that this method was not of general application because it would benefit the cities only, and it was essential to reach the rural districts as well. Chocolate iodine tablets, given to the school children, proved effective, but failed to reach two very important groups—expectant mothers and pre-school children. The final decision was to persuade the salt manufacturers to put out an iodized table salt. This type of salt is now in general use in iodine-poor districts and the consensus is that it is proving highly effective in preventing the development of simple goiter.

It is to be noted that the iodine compound in iodized salt plays the part of a food and not a drug. Its primary purpose is not to *cure* simple goiter—which is a medical problem—but to *prevent its development*—which is a public health problem. Iodized salt is the first example of a food product deliberately fortified with a needed nutritional element—a practice which will undoubtedly be extended and may, indeed, foreshadow the "scientifically prepared food of the future."

Beyond doubt, the most pressing of all nutritional deficiency problems for the United States at the present moment is that of vitamin D. Though this vitamin is needed to build strong, normally developed bones and sound teeth, nevertheless, a large proportion of our children—at least half of them, and perhaps more—are not receiving it in sufficient amounts. Consequently it is of the utmost importance from a public health standpoint to put immediately into effect plans for distributing this vitamin in adequate quantities to the public at large.

There is a vitamin D problem in this country because we who live here obviously have interfered somewhat with Nature's plans. She intended us to get vitamin D from the sunlight. When the ultra-violet rays from the sun fall on the skin they develop this vitamin in the body. Those who live in the tropics receive an ample supply of vitamin D from the sun, but most North Americans do not because they live in latitudes where the sunlight is weak for a large part of the year. We also have darkened our skies with smoke, and we spend a large part of our lives behind window glass which cuts off the ultra-violet rays.

The penalty for this violation of Nature's plan is the disease known as rickets. This is a disease of infancy and is characterized by poor bone development. In severe cases, the legs may be bowed, the chest contracted, and other deformities may appear; in mild cases, the symptoms may be unnoticed by untrained eyes, but the consequences may be serious, including an increased susceptibility to lung



troubles, increased tendency for the teeth to decay and (in women) pelvis so narrow as seriously to interfere with normal childbirth.

There is abundant evidence proving that adequate amounts of vitamin D prevent rickets when taken in connection with the other nutritional needs of the infant. Considerable data have also been accumulated showing that vitamin D helps to prevent tooth decay—the most prevalent and pernicious disease that affects mankind. Unfortunately, vitamin D is a rare natural product. Vegetables have none of it and only trifling amounts have been found in eggs and some other foods. Cod-liver oil, however, happens to be rich in it, thereby explaining this oil's long known efficacy in the treatment of rickets.

In working out a plan to distribute vitamin D widely to the public, advantage is being taken of a process developed at Columbia University by which the natural vitamin D content is extracted from cod-liver oil. This concentrate is free from the disagreeable fishy taste and odor of the oil, and can be added to plain milk, evaporated milk, bread, and other foods, without in any way altering their flavor. Such "vitamin D" foods, as well as others reinforced with vitamin D artificially prepared by exposing certain substances to ultra-violet light, are now available in many parts of the country. As knowledge of the value of these foods has grown, the demand for them has increased; and though the process will necessarily be a slow one, there is reason to believe that within a few years they will come into general use, and that rickets, like scurvy, will cease to be a public health menace.

Next we have the calcium problem. After having carefully analyzed hundreds of family menus, nutritional scientists have come to the conclusion that many Americans are not getting enough of the element, calcium, in their present diets.

With children, a calcium-deficient diet is a very serious matter, for calcium is one of the chief constituents of bone, but even adults need definite amounts of this element—about an ounce a month—in order to retain full vigor. There is, as a matter of fact, some evidence to indicate that premature old age may often be the result of a diet too low in calcium.

Calcium occurs in a number of foods, including cauliflower, cabbage, lettuce, oysters, clams and cheese, but by far the most important source of supply is milk. Those who drink a quart of milk a day need feel no concern about their dietary calcium; but those who do not (and they obviously are many) stand in real danger of calcium deficiency, because it is difficult to obtain sufficient amounts from any other dietary source unless certain green vege-

tables, salads, cheese, or sea food are consumed in amounts that are abnormal from the American point of view.

The present remedy for this situation consists in administering certain compounds of calcium in tablet form; but a suggestion for a different solution to the problem lies in the fact that calcium is already being added to bread and some other kinds of baked products. Such addition is not being made for dietetic purposes but to assist in the baking process. Thus, calcium is a constituent of many baking powders; it is employed in the manufacture of self-rising and phosphated flours; and it is also used in connection with stimulants, or "activators," for yeast. It has been shown that the calcium residue in self-rising biscuits actually does possess nutritional value, and so it is possible that bread, fortified with calcium (and also with vitamin D), may be the "staff of life" of the future.

In addition to the foregoing there are other dietary deficiencies now being studied. It is a well known fact that the soils of large areas of this country are poor in phosphorus and that fertilizer of high phosphorus content must be used in order to secure good crops. Since the people inhabiting these areas secure the greater part of their food from the local soil, it is possible that many of them do not get enough phosphorus in their diet. The same may also be true in regions poor in magnesium, manganese, or other elements, just as it is known to be true in the case of regions poor in iodine.

Cases of phosphorous deficiency are well known to members of the medical profession, and laboratory experiments show that a lack of dietary manganese and manganese has serious consequences.

If it is found that soil deficiencies do have an effect on the health of human beings, public health authorities, in addition to taking other steps, will undoubtedly co-operate with their agricultural colleagues in determining the proper kinds of fertilizer to use in various districts to the end that the public will have better foods.

These considerations are at the moment merely matters of speculation; but at all events it is evident that we are entering a new era in nutrition and that more and more attention is being given to the nation's diet.

We have still much to learn about *what* we ought to eat, and *how much* of each element we should eat, but the discoveries already made in this field are of such vital importance that work along these lines is being carried on with increased activity in every part of the civilized world. This work holds out great promise for the human race.





# Men of Russia

By James E. Abbe

American business and diplomacy are preparing today to meet and deal with the men of Soviet Russia. Who these men are, where they come from, what they are like is told by James Abbe, an American journalist, formerly employed by the Soviet photographic trust.

**T**HE Modern American Marco Polo, who goes to Moscow for the opening of the "Recognition trade fair" better slip a pair of skates in his sample case, in preparation for the hard game of trading with the Bolsheviks which is just ahead.

The purchasing agents for the U.S.S.R., largest firm on earth, form an extremely hard boiled ice hockey team which gives and asks no quarter. They may occasionally cut figure eights, do graceful arabesques before and after the game, by way of demonstrating the ideals which are deeply embedded in their efforts to establish a hundred per cent socialistic civilization; but there's no fooling when they start pushing the puck of profits toward their opponent's goal.

It is possible that some American business men will recall when the world was startled with the announcement: "Money Done Away With In Russia." But that was in the early days of "building socialism." That "ole devil" money, the root of all evil, the poker chips of the game of commerce for thousands of years, has since come back with a bang! Business is business in Russia; and the men who run it are business men. Some of them are Russians, but most of them of other bloods, and practically all of them have prison records in capitalist regimes.

For the moment on the grounds of expediency, they have relinquished their efforts for a world wide revolution. They feel, with reason, that they safely can wait until the next World War drives an exhausted humanity to communistic experiment. They have bent every effort towards preparing for that war, and they will gamble on riding through the storm with the expectation of sitting pretty after it has spent its force. They are sincerely and heartily in accord with the United States in not coveting one foot of another nation's territory; and for the same reason. Neither of them needs more territory.

Prison life usually imbues the prisoners with a hatred for the class which imprisoned them. In considering the men of Russia, it should be remembered that it isn't often that ex-prisoners get a crack at the society which punished them, but they did in Russia.

The really elite of Bolshevik Russia today are to be found in the membership of The Society of Ex-political Prisoners. This society, a mere sixteen years after the

revolution, has achieved the social standing of our own D.A.R., the Sons of The American Revolution, or the less known but still more exclusive Order of the Cincinnati which takes in only descendants of the officers of our American revolution. Russia's Society of Ex-political Prisoners admits only those who served at least six years in Tzarist, or foreign, prisons. Five years and eleven months won't do. There are no known exceptions to this rule.

There are no membership dues. But the society is a self-supporting unit, economically independent through the proceeds of its factories and farms, with its country home, town club house and hospital. It sets an excellent table in a land where food is scarce. And the table is set with china which bears the crest of the order: a barred prison cell window, draped with manacle chains. The club walls are covered with paintings and photographs of the less pleasant side of prison life under the Tzars, with the photographs of those dead and alive, who endured imprisonment and torture in the cause of overthrowing the Romanoff dynasty. Belief in communism is not even a requisite to membership. Any bomb thrower, agitator, or anti-Tzarist whose efforts merited and were rewarded with the required six years in prison is eligible. Joseph Stalin's photograph is prominently displayed on the club house walls.

It isn't suggested that because of their prison records, the rulers of Soviet Russia are a criminal class, for it must be remembered that political crimes committed in the cause of an ultimately successful change of government have a way of getting written into history as deeds of heroism. It is merely that ex-prisoners become perforce realists. The men of authority in the U.S.S.R. face the situation in the way it demands, and mean business when "business is *business*."

Moscow is the market place of the often-mentioned "one sixth of the earth's surface." But for all of its recently constructed buildings, tram cars, automobiles, crowds of pedestrians, it still retains the aroma of an Asiatic trading post.

The two gigantic cabarets (Yar and l'Hermitage) in which money was squandered by visiting merchant princes in the old regime, are today a cinema studio and home for visiting peasants, respectively. But "merchant princes" from Europe and the United States, their salesmen and resident representatives, may be seen in the bar of the Metropole Hotel. Lincoln cars bring foreign business men to the entrances of the National followed by motor