YOU ARE EATING POISON BY THE PLATEFUL!

Despite warnings by medical and public health officials, thousands of tons of chemical insecticides are saturating America's food supply and threatening our very lives.

by E. K. ROOSEVELT

■ RECENTLY a 30-year-old farmer, in tip-top health, sprayed his barn with DDT and lime. A week later, he noticed his gums were bleeding, a sore throat, spotted tongue and spots all over the rest of his body. Two weeks later our farmer was one of 10 statistics on accidental fatalities from DDT poisoning as described in one recent issue of the Journal of the American Medical Association.

In case you now have the urge to tell your wife or the hash house cook to be sure to give the fruit and vegetables a thorough washing—forget it. The modern pesticide is so efficient it can penetrate that potato down to the core. And what about your beef steak and glass of milk? Nothing much you can do there either, they come from cattle that've eaten sprayed crops.

As far back as 1954 the Department of Health, Education and Welfare analyzed the meals an average American eats every day and reported that every particle of food including apple pie and coffee with cream contained DDT. It also found that almost everybody in this country has some DDT stored in his body fat. So you can accept it as fact that you're getting on your plate—unseen and unasked for—your share of DDT which is only one of more than 180 different chemicals, 42-million tons of which are sprayed on crops each year. Some of these chemicals, such as DDT, aldrin, chlordane and lindane, are known liver poisons.

Simultaneously with the introduction in 1945 of these compounds—known to chemists as chlorinated hydrocarbons—there has been an unprecedented rise in hepatitis in both cattle and man. Liver poisoning in cattle has been definitely traced to these compounds. In a period of three years the number of cases of hepatitis in humans had tripled, according to the New York Times, February, 1955.

According to a 1956 report issued by Congressman James Delaney following hearings on the Food & Drug Laws, there are other questionable pesticides.

WARNING!

U.S. Selective Service reports that from World War I to the Korean War—a period of 32 years—draftee rejections have increased from 21.3 to *52 percent*. Authorities warn that if this rate of degeneration continues, ". . . within 25 years nearly 75 percent of our nation's manpower will be unfit for active military service."

BULLETIN!

ADD THESE POISONS TO THE OTHERS THAT ALREADY SATURATE YOUR FOOD:

Thimet; this organic phosphate is closely related to "nerve gas," most fearful weapon in any arsenal. *Endothal*; already commercially available in bulk as a "defoliant," this is a substance that destroys unwanted weeds. In laboratory tests, *endothal* was found to "interfere with normal cell division in the human embryo." The *Journal* of *Heredity* voices fears that the unrestricted use of such insecticides ". . . may effect unwanted genetic changes (*mutations—"freaks"*) as early as the next generation."

Reprint No. 10 2
Price - .10¢

LEE FOUNDATION FOR NUTRITIONAL RESEARCH
Milwaukee 1, Wisconsin

With selenium, for example, animal experimentation has shown that three parts per million in the diet—a dosage that can be found in unwashed apples—will produce cirrhosis of the liver and that if feeding is continued animals may develop cancer of the liver.

In the case of phenyl mercury compounds, used extensively on fruit and vegetable crops as fungacides, testimony before the Delaney Committee showed that small quantities taken into the body led to measurable storage in the kidney, resulting in damage to that organ.

Benzene hexachloride (B-H-C) is known to have toxic properties similar to DDT, differing, however, in that it appears in the brain tissue of the experimental animals to which it has been administered.

The Food and Drug Administration itself has found that a pesticide called aramite induces cancer when eaten by animals. In 1956 the Rome Symposium on Potential Cancer Hazards from Chemical Additives and Contaminants to Food Stuff said that a "carcinogen [a cancer-producing substance] at any dosage level, for any species of animal, following administration by any route should not be considered innocuous for human consumption." Nevertheless, FDA has permitted the sale of food containing small amounts of this pesticide and the citizens of this country are eating this food without knowing what it contains.

What is responsible for this state of affairs? Weak laws, lack of public education and a powerful chemical lobby bent on making a profit regardless of how they may effect the health of the American people. Only if considerable public pressure is brought to bear can our legislators be induced to pass adequate legislation to prevent this purposeless addition of chemicals to food.

It is a healthy sign, however, that some of the nation's more responsible chemical firms and food growers are themselves taking the initiative as a result of the sensational testimony that came to light during the Food & Drug hearings conducted by Congressman Delaney.

Legislative counsels for the National Grange (the oldest national farm organization in the United States), and the Grocery Manufacturers of America testified before the Delaney Committee that changes were required in our laws to meet the problems created by the development of new chemicals.

Some manufacturing and farming groups have even gone so far as to

This farmer is soaking his vegetable produce with *chlordane*—five times more poisonous than DDT.

withdraw entirely from the production and use of chemical sprays. Only last May, William T. Thompson, president of the Thompson Chemical Corp., announced that the manufacture of DDT and other insecticides would be stopped because, he said, he feared that they might have serious effects against human health and also because in the long run they did no good, but rather led to the development of poison-resistant strains of insects. The answer, according to Thompson, lay in fighting the bugs through developing and using products that were "chemically selective"—that is they would kill the pests, but *not* the useful insects that prey on these crop destroyers.

Walter Pretzer, president of the National Vegetable Growers Association, conducts greenhouse and truck-gardening operations without chemical dusts or sprays. Countless home gardeners are also finding it safer and easier to fight bugs by practicing crop rotation, by bringing back the natural biological balance of the soil by using cover crops and by adding humus from compost heaps.

The whole question of the use of DDT is now much in the news because a group of New Yorkers – many of whom are socially or financially prominent—have filed suit to prevent the government from carrying out further mass aerial spraying of DDT.

The legal action was triggered when the U. S. Department of Agriculture doused three million acres of New York, New Jersey and Pennsylvania with three million pounds of DDT to stop an anticipated infestation of gypsy moths.

The plaintiffs contended that there had been no measurable stripping of foliage or loss of leaves from gypsy moths. They say many federal and state scientists agree with this and "the only experts who defend the practice of mass sprayings . . . are government men who dare not contradict the official 'line' to which they or their superiors have strongly committed themselves, and experts in the employ of the huge insecticide industry."

The plaintiffs include Mrs. George (Jane N.) Nichols, a daughter of J. P. Morgan, who has a herd of 52 milk cows at Cold Spring Harbor, Long Island. Mrs. Nichols has protested that milk production from her cows had fallen off following the spraying, and further contamination of her milk, which is distributed commercially "would be ruinous."

It is noteworthy that the U. S. Department of Agriculture and other government agencies do not tolerate *any* measurable DDT in milk, even while dousing pastures and dairy herds with the poison. Nevertheless, the government sought unsuccessfully to block the application for a trial on the grounds the spraying was completed and therefore the issue was "academic."

The government's action in this instance and its acceptance of the irresponsibility of various manufacturers who grow rich by making test animals of the population at large has led to the formation of the Committee Against Mass Poisoning.

This committee, which has its headquarters at 3100 Chrysler Building in New York City, is not composed of faddists or nature food "crackpots." It has been constituted a special committee of that austere scientific organization, the New York Zoological Society, and it has as its chairman no less a figure than Robert Cushman Murphy, internationally known naturalist.

Interviewed at his Setauket, Long Island home, Dr. Murphy spoke out against our present laws permitting tolerance levels of various pesticides. ["Tolerance" means the lowest amount that a person can consume without producing any apparent poisonous effects in his body and the U. S. Public Health Service specifies certain optimum allowable amounts of certain chemicals composing the sprays.] Dr. Murphy argued that "tolerance" of DDT, as of radioactive substances, properly begins not at seven parts per million or any other figure—but at zero.

"Don't get the idea that the DDT we are taking in will kill us right off the bat," the naturalist explained. "Not at all. But it will lower our resistance to other illnesses and shorten our lives, especially if we are now young."

Even if tolerances could be established for humans at the levels set by law, the consumer is still not getting full protection since the law for tolerance was passed at a time when only *one* insecticide was used on each article of food. A recent report by the U. S. Public Health Service states that when two or more chemicals are used on one item of food, which is the usual case today, the toxic effect is increased.

And what happens to the chemicals sprayed on the soil, don't they disintegrate and disappear? Unfortunately, they do not. A study in 1955 by the Entymology Research Branch of the U. S. Department of Agriculture, Yakima, Washington, gives a clue to where we can find most of the insecticides used on the farms during the past 10 years.

Examination of the soil revealed that 3½ years after treating the soil, approximately 50 percent of the DDT, 14 percent of B-H-C and lindane, and 15 percent of the aldrin were found in the surface six inches of the soil. Similar tests were made in Illinois, New Jersey, and Georgia with similar results which shows that these insecticides have accumulated in the soil rather than disintegrated.

There is another reason why legal tolerance levels for insecticides on plants do not give a true picture of the amount consumed in foods: you also get chemicals with each glass of milk you drink or your luncheon hamburger. Dr. Dendy, chief chemist Texas Research Foundation, sought to determine if cows were absorbing DDT from contaminated feed. He found that the lean part of steaks had 4 p.p.m. (parts per million) while the fat had 40 to 60 p.p.m. As the reader probably knows if he recalls his high school chemistry, these chemicals are fat soluble. They dissolve in fat and therefore are found in greater concentration in vegetable oil, such as peanut or cottonseed oil, and in human and animal fat.

Many foods also contain higher amounts of the chemicals and cannot be adequately checked with the Food and Drug Administration's present facilities. For instance, according to Dr. W. Coda Martin, chief of the Geriatrics Clinic, Metropolitan Hospital, New York, "recent private analysis reveals that eggs contain 40 parts per million or more of DDT, cheese 150 parts per million, bread 100 parts per million, and stewed fruits 69 parts per million."

Furthermore, the setting of tolerance figures from analyses of pesticides does not take into consideration the fact that human beings react differently to the same amount of drugs and chemicals according to their age, hereditary factors, constitution, past medical history, allergies, climate, etc. This fact has caused some responsible food companies to take measures to avoid contamination of their food stuffs by these chemicals.

Dr. L. G. Cox, a chemist with the Beech-Nut Packing Co., one of the larger food preserving companies, told the Delaney Congressional Committee investigating chemicals in foods that his company was spending $100,000 every year to keep pesticidal residues out of food.

Dr. Cox said: "We have found that chlordane, as a soil residue, contaminates carrots. Thus, we avoid the purchase of carrots from areas where chlordane has been used commercially.

"We have encountered considerable difficulty in obtaining peanuts free from (B-H-C) benzene hexachloride. Peanuts are grown in rotation with cotton on which large amounts of B-H-C are used for insect control and remain in the soil.

"Sweet potatoes from South Carolina were contaminated with B-H-C.

"In 1951, we rejected apples from New York State contaminated with B-H-C. (Today they use more parathione as B-H-C produced a change in the taste of foods.)

"Rejected celery from California—also sweet potatoes from California."

Even the Beech-Nut Company with all the chemical procedures available to it was unable to free the food it uses from the chemicals!

"We found," continued Dr. Cox, "that these chemicals tend to penetrate into the edible portions of the foods. Due to this penetration, we were unable to develop any washing, peeling or inactivation procedure which will remove B-H-C."

With such statements in mind, it is a cinch that whoever prepares your meals won't be able to eliminate all the poison.

Even more alarming is the effect these chemicals may have on your infant son or daughter, also on coming generations on a long term basis.

A study frequently cited by those who pooh-pooh the possibilities that these chemicals may be harmful is a Public Health Service report about voluntary prisoners who were fed 200 times the usual amount of DDT found in our foods today. The body storage of DDT increased from what is today considered a normal level of 7-11 p.p.m. to 234-340 p.p.m., but after 18 months trial the men did not reveal any pathological changes.

A hasty conclusion might be that consumption of DDT is not a health hazard, but this short-range study does not take into consideration the fact that today babies begin to absorb DDT from birth from the mother's milk and later from cow's milk and other foods. The baby will continue this intake three times a day as long as he lives. The question still to be satisfactorily answered is *what are the long-range effects of these chemicals on human health?*

Scientists have already shown that DDT interferes with the complicated enzyme system (that is the system of chemical "catalysts" or activators) that enable cells of the body to pick up oxygen. A typical experiment illustrating the chemical's action appeared in the A.M.A. Journal of March 1951 and described how DDT concentrations of 3-30 p.p.m. were shown to inhibit the rat heart-catalyst, "cytochrome oxidase," and interferes with the process of phosphorylation. All this means that when the foreign element of DDT is introduced in the body and reaches certain concentrations, body cells can't get vital oxygen and that, according to Dr. Henry Goldblatt, spells trouble. Dr. Goldblatt, who is associated with the Cedars of Lebanon Hospital in Los Angeles, periodically cut off the supply of oxygen to a piece of rat's heart in a test tube. He found that the cells gradually changed under the microscope until they had all the features of malignant or diseased cells.

Other researchers have confirmed the danger of cells being deprived of oxygen.

Dr. Otto Warburg also noted how a normal cell can grow into a cancerous one when periodically deprived of its oxygen supply over a number of years.

We may live out the life expectancy of 67 years assigned us by vital statistics, but what of our children? What effect will the interference with the important oxidative enzyme system caused by insecticides from birth have on your daughter or son? Experimental evidence with animals have already demonstrated that any such interference with the fetus (that is the manner in which the baby to be gets oxygen in the early embryonic stage of development), will cause structural changes in the tissues and organs of the body, as well as a marked increase in congenital deformities.

In a speech made at the 1957 Convention of the Natural Food Associates Dr. Martin observed "oxygen deficiency to the cells as produced by the insecticides is a non-specific form of stress and it was shown by Ingalls in 1947 that the lack of oxygen is a specific cause of congenital deformity."

Dr. Martin went on to observe that a particularly horrible form of congenital deformity, Mongolism, occurs at the eighth week of embryonic development. He noted that a recent report from the Foundation for Retarded Children states that there is a mentally retarded child born every 15 minutes in the United States today.

Could Mongolism or other deformi-

ties present from birth be due in whole, or in part, to an interference with oxidation by the cells?

Neither Dr. Martin nor any other doctor can definitely state the cause of mental retardation. However, according to Science News Letter, December 22, 1956, it has been discovered that the brain of a mentally sick person uses a lower than normal amount of oxygen.

The $64 question asked by Dr. Martin is, "Will the continued accumulation of the insecticides in the fatty tissue of mothers during pregnancy, which acts as an inhibitor to the oxygen supply to the cells, cause an increase in these congenital anomalies in the future?"

If so, this might indeed be a case of unfitting the unborn.

While not all doctors and research men go so far as to suggest that insecticides might interfere with heredity, some are puzzled by the increase in degenerative diseases. They wonder if a lack of proper nutrition may play a part in the picture.

Selective Service reports that from World War I to the Korean War—a period of 32 years—there has been an increase of draftee rejection from 21.3 percent to 52 percent, an increase of about one percent a year. Even this marked increase of rejections is not a true picture of the health of today's youth since physical standards for draftees in 1918 was very high, while in 1950 they were markedly lowered as the essential manpower could be obtained only by reducing the physical standards with respect to some psychiatric and physical conditions.

If this appalling speed of degeneration continues—at the rate of one percent per year—then within 25 years, within the lifetime of most of us, 75 percent of the nation will be physically or mentally unfit for active military service. Surely, a chilling thought, as we face Russia's formidable manpower resources together with her rapid technological advances.

What is more, if insecticides play a role in sabotaging our nation's health it is more than likely they will continue to do so on an increasing scale. Last year pesticide production reached 42 million tons with total farm chemical sales of $290 million as reported in Chemical Week, October 27, 1956. By 1975 the chemical industry expects sales of $1 billion. At the same time, in view of our unprecedented population growth and expansion there is expected to be an increase of farm acreage from a 1950 level of 1.184 billion acres to only an estimated 1.280 billion acres by 1970. The chemical industry expects an increase of 248 percent in the use of chemical pesticides from 1954 to 1975—this in spite of the fact that there will be only about 10 percent more land to soak up this veritable sea of chemicals!

The result can only mean mounting costs to the farmer as well as a health hazard to the nation. Furthermore, as insects develop immunity to the insecticide more toxic ones must be developed. Chlordane, for example, is four to five times more toxic than DDT which was one of the first chemical sprays introduced at the end of World War II. Chlordane is stored in human fat at a much faster rate. Dr. Arnold J. Lehman, director of the FDA's Division of Pharmacology, told the Delaney Committee *in 1950* that he would "hesitate to eat food that had any chlordane on it whatsoever."

Now a substance has been developed that coats the seeds so that it later enters the system of the plant when the seed begins to sprout. Called "thimet," this organic phosphate chemical is related to the Army's nerve gas. If an insect bites the plant and is killed, what about the animal or human that eats the plant?

Endothal is another "chemical of the future." It is already commercially available for use as a "defoliant," to remove leaves. This chemical, as well as Lindane, has been shown to have "mutagenic" activity. It interferes with normal cell division in the human embryo and thus causes mutations or changes in the pattern of heredity. Would it be possible that these new chemicals would also cause the birth of an increasing number of freaks? An issue of the Journal of Heredity (July-August 1956, "Cytological and Genetical Effects of the Defoliant Endothal") voices fears that these insecticides may effect unwanted genetic changes in the next generation.

Nevertheless, in spite of the possible dangers of chemical sprays, it is obvious that farmers must take some action to check the five billion dollars of damage that pests do to their crops each year. This is argument enough for manufacturers of pesticides and for the average farmer, who have failed to consider the mounting volume of evidence that:

1.) Pesticides don't do the job that they are supposed to do and;

2.) Pests are better controlled on a broad basis by combating them with their natural predators and other factors that nature herself uses to maintain her state of balance in the life cycle.

The following statement, from a meeting of the Executive Board of the World Health Organization in June 1956, gives a clear and concise answer to the question of whether insects are being controlled:

"The conclusion was that the development of resistance to insecticides has become a serious public health problem. Thirty-two countries have reported insect resistance to DDT and other new insecticides.

"About 35 species of insects, including various types of malaria bearing mosquitoes show immunity to DDT in some areas of Greece, Lebanon, Indonesia, Saudi Arabia, Panama and Mississippi. Body lice, vectors of typhus, can no longer be controlled with DDT in Korea, and five other countries report that satisfactory control is becoming difficult.

"Fleas, responsible for plague, are manifesting resistance in certain parts of South America. But worse still, a strain of mosquitoes that spread Yellow Fever has shown itself extremely resistant to DDT in Trinidad. The destruction

Disease Center, Logan, Utah, has declared that in this country, too, the insect problem is mounting because of the increase of breeding potentials and because of the development of insecticide resistance.

According to Walter P. Nickell, a naturalist at the Cranbrook Institute of Science, not enough is known about the long range effects of DDT and other insecticides. They kill the beneficial insects, he said, even the soil bacteria, and in general upset the balance of nature.

It was the non-selective chemicals, for example, that brought on the first outbreak of the cottony-cushion scale in the orange groves of California since it was brought under control by the little beetle vadalia in 1890. That this should have occurred is understandable when we consider that harmful insects are normally held in bounds by the predators and parasites which prey on them. The trouble usually comes when nature's intricate system of checks and balances is upset—for instance from the introduction of insects not native to the area which are left unchecked by their natural enemies, which existed in their original environment.

Horticulturists R. H. Kelty and C. M. Harrison of Michigan State University also point out the danger of blanket applications of powerful insecticides over large areas which in some cases reduce all insect activity to zero. The application of insecticides to control harmful insects must be carefully controlled or beneficial insects, particularly the solitary bees and honey bees, may be exterminated also.

However, until the use of more scientific methods becomes widespread and we learn to work with nature instead of against her, it is more than likely that certain pesticides will continue to be used. Meanwhile, what can you do as a citizen to insure the safety of our food? Through letters to Congressmen, through your local political and civic organizations you can support legislation that would provide for:

1) Zero tolerances for pesticides shown to be cumulatively poisonous and;

2) Extension of labelling laws to compel a declaration of the chemical content of sprays used. Such a provision would enable the buyer to make his choice.

Finally, when shopping at general food stores:

Regularly request non-sprayed foods—your grocer may add these foods to his regular line if enough people demand them.

Cut down on fatty foods such as butter and cream. These chemicals are fat soluble and therefore more concentrated in fats and oils.

Wash your vegetables and peel all fruits before eating to get off some of the pesticide residues. Most of the spray is concentrated in the peel.

Eat only lean meat.

And eat fish—the only food still not contaminated.

END