

NUTRITION

Radiation for Better Food

Drying and curing were the sole methods for preserving food before the advent of refrigeration and canning. Now radiation promises to help in the preservation of food.

➤ **SECOND ONLY** to the actual growing of food crops, the health of the world depends on how well these foods can be processed to preserve them from spoiling after they are harvested. Food processing of one kind or another has been used for thousands of years but now it can be depended upon to keep foods wholesome and nutritious for months or even years.

The atomic age has brought in two new developments which promise to make great contributions to food preservation.

The first is the use of antibiotics to slow down the growth of the microbes in processed food. These microbes ultimately cause food to spoil. The antibiotics have limited uses at the present, but at least one of them, Aureomycin, is used on poultry or fish. They are still very much in the development stage and health authorities are naturally cautious about them until their effects are better understood.

One reason that their value may be limited is that resistant strains of the microbes may be produced over a period of time, causing the antibiotics to lose their preservative value.

Perhaps a more significant development in food processing is the use of radiation to preserve food, Dr. W. H. Cook, director of the division of applied biology, National Research Laboratories, Ottawa, Canada, suggests.

Gamma, beta and X-rays from atomic

reactors and electron generators are able to kill microbes and can sterilize foods without heating or partially cooking them, as the canning process does. Naturally, the foods would still have to be kept in sealed containers so that no more bacteria could get to them.

Some foods develop unpleasant flavors when sterilized with high doses of radiation, but these sometimes can be overcome by irradiating at low temperatures or by adding acceptable chemicals that prevent the flavors from developing.

Low doses of radiation, although not able to sterilize completely the food, also have certain advantages for processing some foods.

Potatoes and onions can be kept from sprouting, and at least some of the bacteria on meat can be killed with these low doses. For meat processing, low doses of radiation may become a valuable supplement to the refrigeration techniques already in use.

Today, the two most widely used preservation methods are canning and refrigeration, which are supplemented by the drying and curing methods that have been practiced for centuries. Canned foods retain their value for years, but the food is necessarily cooked. Quick freezing, on the other hand, provides a fresh, ready to cook product, but requires special facilities for maintaining low temperatures during processing, transportation and storage.

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TECHNOLOGY

USSR A-Power Hits Snags

➤ **RUSSIAN ATOMIC** power developers are both looking to and looking like their American counterparts, W. Kenneth Davis, director of the Atomic Energy Commission's division of reactor development, has revealed.

Mr. Davis made his peaceful atomic comment before the Midwest Regional Conference of the Council of State Governments meeting in Cleveland, Ohio.

Discussing the Russian effort, he said an interesting feature of the Soviet power reactor program "is that it looks more and more like the U. S. program.

"It now appears that the Russians are lagging in technology and may hope to obtain guidance through U. S. advances which, of course, are available throughout the world. It is also significant to note that their judgment has not led them to other types of reactors or to greater emphasis on natural uranium for power reactors."

The AEC expert pointed out that the Reds' proposed pressurized water reactor is

"remarkably similar" to the PWR we are building at Shippingport, Pa.

Mr. Davis also noted that from recently received information it is estimated that the Russians will have a total capacity not much over 1,000,000 electrical kilowatts from their planned plants. This, he said, is a far cry from the 2,500,000 kw they were boasting about a year ago.

The Russians, Mr. Davis said, have probably come face to face with the realities involved in a nuclear reactor program, where even the simplest of nuclear power plants can present formidable technical difficulties.

Soviet planners who boasted last year, Mr. Davis commented, were "naive" about their own program.

He cautioned the audience that one should not become complacent about the nuclear activities of the Russians, or in any other field. A rational estimate of their capabilities is likely to be correct in the long run. "However," he concluded, "we would be

silly indeed to let unsupported and irrational claims as to their capabilities distort and warp sound United States policies and programs."

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PHYSICS

Atomic Scintillation Subject of Conference

➤ **ONE OF** the methods of detecting atomic and other radiation, liquid scintillators, will be discussed at a conference Aug. 20 to 22 at the Technological Institute of Northwestern University, Evanston, Ill.

The theory and application of this type of apparatus will be covered at the conference, including coincidence counters, single channel counters, chemistry of liquid scintillators, and applications to biology and medicine, industry, archaeology, physics, chemistry and engineering.

Dr. F. Newton Hayes of Los Alamos, N. M., has been in charge of organizing the program.

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ENGINEERING

Engineer Defends English A-Power Plan

➤ **THE BOTTLENECK** to England's dream of becoming a great nuclear power is a shortage of scientific manpower, W. R. Wootton of Babcock & Wilcox, Ltd., London, told the American Society of Mechanical Engineers meeting in San Francisco.

A shortage of technical knowledge, as has been suggested, is not the roadblock to England's ambitious plans for creating a gigantic nuclear power industry over the next two decades.

Defending England's atomic energy program against American criticism, the English engineer denied the atomic power stations in his country are inefficient and becoming obsolete. The British program, he emphasized, "is by no means a stop-gap adopted by a country with a dire shortage of coal and oil."

The English, he charged, know what they are doing. Again defending his nation's program against its American critics, Mr. Wootton pointed out the current British nuclear plants will still be built 25 years from now. Calder Hall, where a power reactor is now in operation, has advantages of simplicity and safety not found in more advanced types of reactors. British industry is sticking to this type of reactor, he added.

Some American atomic power experts have criticized the British for racing into the utilization of peacetime nuclear power and held that our policy of slow, cautious development is the right road. They point out that although nuclear power may be economically practical for England, we do not know enough about it to justify a rapid development program in the United States.

Mr. Wootton re-emphasized the shortage of trained engineers and scientists in England as the "most serious obstacle" in the path to atomic power.

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