3. Prevention of trichinosis, serious pork-borne disease, by irradiating hog carcasses.

4. Making bones, heart tissues and other materials from "banks" used in human replacement surgery safe for use by irradiating them with gamma rays from cobalt 60.

This was evident from reports to the International Conference on the Peaceful Uses of Atomic Energy in Geneva.

The cold sterilization of food promises to usher in as radical a revolution in food preservation as the invention of canning or heat sterilization. Profs. B. E. Proctor and S. A. Goldblith of the Massachusetts Institute of Technology told the conference ionizing radiations can destroy all sorts of microorganisms that cause spoilage in food. They can produce potatoes that can remain fresh for months and never sprout wastefully. Insects are killed by relatively mild doses of radiation, so that stray contamination is prevented.

Even the changes in color, taste and texture that sometimes occur with heavy radiation may be obviated by treating food, when it is frozen, in an inert atmosphere, or by addition of materials that would pick up the undesirable materials resulting from the radiation.

Food sterilization will come into wide use commercially within a decade, it was predicted.

Bread, rolls, cake and other bakery products will be one of the first foods to be kept fresh by atomic radiation, R. G. H. Siu, R. G. Tischer and B. Morgan of the U. S. Army Quartermaster Corps told the conference. This application will follow shortly after the waste rays are used to obviate insect damage and prevent potato sprouting.

Over 30 human patients have received successful bone grafts from the University of Michigan Hospital bone bank which sterilizes the bones on deposit there with gamma radiation. Michigan studies also show that cold radiation sterilization can treat at one time a whole load of medical supplies in tightly closed containers, replacing the present standard sterilization method using hot steam that damages many substances.

Meat that may carry trichinosis and other dangerous parasites can be made safe by use of gamma rays from cesium 137 isotope, a by-product of atomic reactors. At a cost of less than a quarter of a cent a pound, one plant, designed at the University of Michigan, could process 2,000 hog carcasses per day, obviating the danger of this disease that has forced widespread emphasis upon cooking all pork thoroughly. For trichinosis there is no successful treatment for the human victim.

Clean Up Contamination

➤ USE OF ANIMALS and fish to clean up radioactive contamination around atomic power plants was suggested by scientists of the General Electric Company working at Hanford, Wash.

STANDARDS DISPLAY—The nation's standards of length and mass are now regularly on display for the first time in the newly modified standards vault at the National Bureau of Standards in Washington. Here, Drs. Lewis V. Judson (left), chief of the length section, and A. V. Astin, director of the Bureau, prepare the platinum-iridium alloy standards.

While the dangers near Hanford have been kept to a low level, with little contamination of the Columbia River whose water is used to cool reactors, the scientists are working out methods of getting rid of the poisonous fission products in case they do get loose on a large scale, either there or at other atomic plants.

The chemicals they are most worried about are the radioactive iodine isotope 131, strontium 90 and phosphorus 32. They are formed as a consequence of "burning" of uranium or plutonium.

Crops can be contaminated either by the radioactive material falling on the maturing plants or being deposited on the soil from which it is absorbed by growing plants. Then animals eat the crops. Radioiodine loses its punch within weeks, but radiostrontium remains a potential hazard for several years.

The strontium is concentrated in the bones of animals that eat food containing it. If an area is contaminated too much, J. H. Rediske and F. P. Hungate suggested, it might be possible to feed the crops grown on it to animals, let the strontium accumulate in their bones and then sacrifice the animals and store their bones for safety.

In a similar way, fish might be used to collect and store radioactive materials until they decay and become safe, R. F. Foster and J. J. Davis proposed for unusual situations. Birds concentrated large amounts of radiophosphorus picked up from contaminated rivers and swamps in their egg yolks, skeletons and muscles.

At Hanford atomically "hot" strontium is kept in large tanks until it cools down, but this might be highly expensive for atomic power plants.

Science News Letter, August 27, 1955

INVENTION

Pioneer Atom Inventions Receive Patents

➤DR. ENRICO FERMI, the late Nobel Prize winner in physics, and Dr. Walter H. Zinn, director of Argonne National Laboratory, received patent No. 2,714,577 for a nuclear reactor that has a cooled shield, a composite rod for use in the reactor's active core, and a method for introducing foreign materials into the reactor's active part for neutron bombardment. At the same time, Dr. Zinn received patent No. 2,714,-668 for a simple device that responds to neutrons from the reactor to act as a safety regulator.

Both inventions are an integral part of the celebrated nuclear reactor invented by Drs. Fermi and Leo Szilard that heralded the atomic age.

Patents for the early atomic inventions were applied for in 1945, and were issued ten years later. Rights for the atomic devices were assigned by their inventors to the U.S. Atomic Energy Commission.

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