



HIGHER FIREPOWER—Shown here is the firing test of the Navy's new three-inch, rapid-fire anti-aircraft gun that can fire proximity-fused ammunition much faster than those used in World War II.

PUBLIC HEALTH

Radiation Gives Safe Pork

Trichina worms in larval stage are prevented from maturing, and thus reproducing, by exposure to gamma rays from cobalt-60. No cure now known for trichinosis.

► **GAMMA RAYS** from radioactive cobalt-60, now used to combat cancer, may become the means for ending human infections of dangerous trichina worm parasites from infected pork products, two Michigan scientists have revealed.

The often lethal parasites are contracted by humans from eating infected raw or undercooked pork. But exposure of meat to 20,000 roentgens of irradiation from cobalt-60 will prevent any larval trichina worms present from maturing. This keeps them from growing and reproducing in humans eating infected pork, and so human infection is prevented.

Drs. H. J. Gomberg and S. E. Gould, working at the University of Michigan's Memorial-Phoenix Project, Ann Arbor, reported these findings in *Science* (July 17).

No specific cure for trichinosis is known, though the trichina parasite has been estimated to infect about 18% of the entire United States population. Treatment is only symptomatic and general.

Until the discovery of irradiation as a means of controlling the parasites, thorough cooking or quick-freezing at very low temperatures was about the only sure way

of preventing trichina infection from infected pork products. The U. S. Bureau of Animal Industry requires all uncooked pork products to be stored for 20 days at 15 degrees below zero Centigrade (zero degrees C. is freezing) to control trichina worms.

Without irradiation or quick-freezing, pork products should be cooked 15 minutes for each pound of meat to insure freedom from the parasites.

When infected meat is eaten, worm cysts in the meat are dissolved in digestive juices, and the worms are freed to mate. After mating, the male trichina worms die, but the females burrow into the intestinal tract where they give birth to from 1,000 to 10,000 larval worms each in about six weeks' time.

The microscopic larvae get into the blood and lymph systems of the host, and are carried throughout the body. Later they enter tissue, especially the diaphragm and inter-rib muscles and muscles of the neck, larynx, tongue and eye. In the muscles they form cysts, and can become quite painful, even leading to death in some cases.

The encysted worms can remain alive as

long as 10 to 20 years in a muscle. The worm's life cycle is completed when the muscle tissue is eaten by another animal, and the worms released by digestive juices.

Control of the trichina worm is a major problem of public health. The common reservoir of the disease is the pig, which often gets the parasite from eating uncooked garbage containing infected meat.

Science News Letter, August 8, 1953

TECHNOLOGY

Navy Antiaircraft Gun Spits Shells at Missiles

► **HIGH-SPEED ENEMY** airplanes and guided missiles will have a tough time getting through heavy flak to attack Navy ships in the near future.

Reason: A new anti-aircraft gun has been developed that spits shell fragments into the sky much faster than the guns effectively used during World War II.

Two of the new guns are combined into a hard-hitting team. The pair fires 50-caliber shells equipped with proximity fuzes that wreak havoc when within target range. The guns also can blast surface targets.

Developed as a replacement for the old, manually operated, single, three-inch gun, the new guns feature automatic loading. They can be controlled electronically by the ship's radar and fire control system, or they can be aimed and fired independently from the gun captain's seat on the mount.

Rear Adm. M. F. Schoeffel, chief of the Navy's bureau of ordnance, reports the gun gives several times more firepower than the old guns.

The Navy awarded a \$62,000,000 production order to the Firestone Tire and Rubber Co., after the new gun recently passed rigid tests at the Navy's proving ground at Dahlgren, Va.

Science News Letter, August 8, 1953

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