

that the prices of isotopes which result from uranium fission will be reduced after March 1, and that these radioactive materials will be available in increased quantities.

Mirrors and periscopes in the new packing area allow the men who handle radioactive fission products to see the bottles they pick up. They work with long-distance tongs manipulated by means of levers and steering wheels. With these a measured quantity of radioactive liquid can be taken out of a stock bottle and transferred to the bottle in which it is to be shipped. Caps can be screwed back on the bottles, the measuring pipette washed, the stock bottle returned to its numbered place and the smaller bottle placed in its shielded shipping container, all by a man separated from the glassware he is handling by a two-foot-thick concrete wall.

Priced according to its rating in milluries of radioactivity, a radioisotope is shipped usually in hydrochloric acid solution, looking like a small medicine bottle full of water. No hint of the powerful rays emanating from this harmless-looking solution reaches the senses, but Geiger counters and other detecting apparatus, mostly of Oak Ridge manufacture, monitor every outgoing package. Packing material to shut out radiation, and also to soak up the liquid in case the glass should break, surrounds the bottle if the contents are not too dangerous. The whole package is then canned in a commercial tin can of the size often used for tomato juice.

More violently radioactive materials require foot-thick walls of lead to prevent their dangerous rays from leaking through. A few hundredths of a gram of active material may have a shipping weight of many pounds by the time its protective containers are assembled.

Research on cancer is carried on by means of two especially important isotopes from the Oak Ridge atomic pile. Iodine 131, which concentrates in the thyroid

gland, and phosphorus 32, which is picked up by bone marrow and other specialized tissues, are in the greatest demand by research groups. Phosphorus 32 has a long life and may be stockpiled for a considerable time, but isotope production at the atomic pile is geared to the short half-life of the iodine isotope. Taken from the reactor on Monday, it is stored long enough for accompanying unwanted radiation to die away, then packaged, and on Friday of each week loaded on the plane for delivery to research centers where it will take up its experimental role the following week.

Science News Letter, February 25, 1950

#### MEDICINE

### Hamster May Be Weapon In Attack on Kidney Tumor

➤ HOPE for a better attack on a deadly kidney tumor that kills many children comes from a discovery reported by Drs. Hadley Kirkman and R. L. Bacon of Stanford University.

This tumor is known as Wilms tumor. The Stanford scientists have been able to produce tumors that may be the same as Wilms tumors in male hamsters. If the hamster tumors are the same, it will give scientists laboratory material for experiments on the cause and possible prevention or remedy for such tumors in children.

The kidney tumors in the hamsters were produced by injections of female sex hormone, diethylstilbestrol, in large doses over about half the life-time of the guinea-pig-like animals. This is believed the first time a kidney tumor has been produced by the use of sex hormones. The scientists point out that this hormone does not produce tumors in other kinds of laboratory animals and is in fact used successfully as a weapon against cancer of the prostate gland in men.

Science News Letter, February 25, 1950

## RADIO

Saturday, March 4, 3:15-3:30 p.m. EST

"Adventures in Science" with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Dr. Earl J. McGrath, Commissioner of Education, Office of Education, Federal Security Agency, will talk on "Science in Education." The young scientists attending the Science Talent Institute will ask questions of Commissioner McGrath.

By mixing powdered casein from milk with water glass, sodium silicate, a strong adhesive may be formed.

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## Question Box

#### ASTRONOMY

What is the name of the new asteroid? p. 124.

#### GENERAL SCIENCE

Why have Velikovsky's theories been denounced? p. 119.

#### NUCLEAR PHYSICS

Why is the hydrogen bomb a Russian asset? p. 115.

**Photographs:** Cover, U. S. Naval Observatory; p. 115, Atomic Energy Commission; p. 117, Ira Rosenberg, New York Herald Tribune; p. 118, Army Engineering Laboratory, Fort Belvoir; p. 119, Eastman Kodak Company.

What may be a serious drawback in the development of the hydrogen bomb? p. 114.

#### PHYSICS

How does heated polonium react? p. 126.

#### VETERINARY MEDICINE

What are the drugs being used against mastitis? p. 124.