

GENERAL SCIENCE

Uranium for Peaceful Use

► **PRESIDENT EISENHOWER** has authorized the sale or lease of 40,000 kilograms, or about 88,000 pounds, of uranium 235, half of it in the United States and half abroad.

The nuclear material, to be made available over a period of years, will be used for research and development purposes and for fueling nuclear power reactors.

Its distribution marks another step in the program to develop peaceful uses of atomic energy.

In making the announcement, President Eisenhower specified that nations "presently producing uranium 235, or the Soviet Union and its satellites" would not share in the distribution.

The action was taken on the recommendation of Atomic Energy Commission chairman Lewis L. Strauss. It will allow "support of the start of nuclear power programs with a generating capacity of several millions of electrical kilowatts" in Western Europe, President Eisenhower said.

"This action demonstrates the confidence of the United States in the possibilities of developing nuclear power for civilian uses. It is an earnest of our faith that the atom

can be made a powerful instrument for the promotion of world peace."

Distribution of the material will be subject to "prudent safeguards" against its diversion to non-peaceful purposes. The "safeguards" probably consist of atoms of the uranium 238 isotope.

While natural uranium, which contains seven-tenths of one percent of the fissionable isotope 235, gives off too few neutrons to keep a nuclear chain-reaction going, it is well known that its enrichment with added U-235 will produce acceptable fuel for atomic power reactors.

In another possible process, U-235 might be blended with thorium, to give a chain-reacting but safe nuclear fuel.

Extreme purity is required of uranium used in atomic bombs. Separation of the bomb isotope, U-235, from an enriched mixture would require the same diffusion plant equipment as that built at Oak Ridge, Tenn., during World War II to obtain the original fissionable material for the first atomic bomb. No huge diffusion plant is known to exist in any country to which the material to be distributed would be sent.

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TECHNOLOGY

Simple Dosimeter

► **A HUMAN LIFESAVER**, the shape and size of a fountain pen, has been perfected for detecting the amount of deadly radiation received by the body.

Designed for use by the Army and civil defense, the detector weighs less than two ounces and can be clipped to the pocket, or carried in a purse, U. S. Army Signal Corps engineers, Fort Monmouth, N. J., reported.

Known technically as Radiometer IM-93 and nicknamed the "Fountain Pen Dosimeter," the device was developed by the Bendix Aviation Corp., Cincinnati, Ohio, division.

It can record gamma radiation up to 600 roentgens. Over 100 roentgens can cause radiation sickness and 400 can kill.

An easy-to-read scale reveals the total radiation received by the body while the device is being carried. A user peers through the lens at one end, like a telescope, and reads the amount of exposure.

Its simplicity of use and design eliminates special handling and care. The instrument uses a quartz filament fiber activated by an electrical charge stored in a special aluminum and plastic foil capacitor. The charger, powered by a flashlight battery, is only slightly larger than a cigarette pack.

For emergency civil defense use, the dosimeter can be recharged by almost any trained television or radio repairman.

In tests conducted by the Signal Corps,

the "Fountain Pen Dosimeter" was thrown 20 feet against a wall, dropped on concrete, held under water and at high altitudes without affecting its use.

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TESTING RADIATION DOSE—
Pfc. James E. Diestal of Westbury, N. Y., takes a reading of possible gamma rays with a new dosimeter.

● RADIO

Saturday, March 10, 1956, 2:05-2:15 p.m. EST
"Adventures in Science" with Watson Davis, director of Science Service over the CBS Radio Network. Check your local CBS station.

Edward F. McClain, electronic scientist, Naval Research Laboratory, Washington, D. C., will discuss "Seeing Stars by Radio."

AGRICULTURE

Waste Cellophane As Gardening Aid

► **WASTE CELLOPHANE** promises to be a valuable aid to both the home gardener and the farmer, tests at the Rutgers University Agricultural Experiment Station, New Brunswick, N. J., show.

Chopped into flakes and impregnated with fertilizer salts, the waste cellophane proved to hold the fertilizer better during leaching than did standard fertilizer salts.

In addition to its use as a plant-growing preparation, waste cellophane also promises to be valuable as a soil amendment and for mulching purposes, R. F. Leyden and S. J. Toth of the Soils Department reported.

Waste cellophane can be composted, they said, if small amounts of limestone and fertilizer are used. The final product has desirable physical and chemical properties comparable to commercially cultivated peat and various other composts.

As a mulch, cellophane flakes reduce the amount of water lost by a plant by evaporation, prevent the slaking of soil surface by impact from applied water, and control weeds.

When used for mulch, they explained, it can be easily recovered or saved for re-use.

The New Jersey soil experts pointed out that the lightness and other qualities of cellophane make it a clean and easy-to-handle product.

Science News Letter, March 3, 1956

HISTORY

Cast of Lincoln's Life Mask Displayed

► **A CAST REPLICA** of Lincoln's face, believed to be one of this country's earliest bronzes, has been on view at the American Museum of Natural History in New York.

The bronze is the only metal cast made from a life mask made by the sculptor Clark Mills on or about Feb. 12, 1865, Lincoln's 56th birthday, two months before Lincoln's assassination.

It is an exact replica of Lincoln's face at the height of his career and clearly shows every detail of the beloved face.

The cast remained in the hands of the sculptor's sons until 1886 when it came into the possession of John Hay, Lincoln's private secretary and later Secretary of State for Theodore Roosevelt. It is now owned by John Hay's son, Clarence Hay, through whose courtesy the cast was shown.

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