

## PHYSICS

# "Hot Cells" for Isotopes

Three-foot concrete walls with steel doors a foot thick will wall off highly radioactive materials at the Brookhaven National Laboratory.

► **STEEL DOORS** a foot thick set in walls armored with three feet of concrete seal three new "hot cells" that imprison highly radioactive materials at the Brookhaven National Laboratory.

Part of new research facilities for using radioisotopes created in the Brookhaven atomic reactor, these spaces are never entered by the scientists who handle the apparatus by controls from outside and view what is happening through periscopes.

Five additional rooms or "caves" are provided for scientists who are working with less intense radioactivity. A shield of lead bricks and thick glass portholes within an enclosure provide enough protection.

A special tube system can whisk radio-

active material from the reactor to the "hot" laboratories at 40-miles-per-hour speed, making delivery before some of the short-lived artificial elements disintegrate.

Even the air from these radioactive laboratories is routinely filtered to remove any straying "hot" particles. Liquids are discharged into tanks when discarded, where they are watched by Geiger counters until they lose their radioactivity and become safe. Waste materials that are too "hot" radioactively are buried at sea encased in concrete coffins.

For "deposit" of radioactive material awaiting use there is a "bank vault" which is a hole in the ground lined with thick lead.

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## MEDICINE

# Stop Kidney Stones

► **"HIGHLY favorable"** results with aluminum gel treatment of kidney stones in 22 patients are reported by Drs. Ephraim Shorr and Anne C. Carter of Cornell University Medical College, the Russell Sage Institute of Pathology and New York Hospital. (JOURNAL, AMERICAN MEDICAL ASSOCIATION, DEC. 30).

The treatment is for patients with the phosphate type of kidney stones. These are the most difficult to treat because after operation to remove the stones there is a tendency for more to form, and those not removed tend to increase in size.

The aluminum gel treatment stops this by causing formation of insoluble aluminum phosphate salts in the intestinal tract. As a result, there is less phosphate to be absorbed and then excreted by way of the kidneys.

Of several aluminum gels tried, basic aluminum carbonate gel, with the trade name of basaljel, proved most efficient.

The patients have been treated for two to seven years. Among the 22 patients there were 36 kidneys which had phosphate stones at the time of treatment or had had them previously. In the six kidneys from which stones had been removed by operation, no new stones formed under the aluminum gel treatment. In only three of 30 kidneys with stones at the time of treatment was there any increase in the size of the stones. This was of small magnitude and not progressive. Stones were passed completely from four kidneys and reduced in size in three.

By contrast, four patients who stopped

the treatment all had stones that got so large they had to be removed by operation.

A diet moderately low in phosphorus is prescribed along with the aluminum gel treatment. Regular checks on the amount of phosphorus being excreted by the kidneys were made and the doctors emphasize that this is important.

Some patients may get well enough so that the treatment can be stopped. This is now being tried in a few, but the doctors do not know yet what the results will be.

Science News Letter, January 20, 1951

## PHYSICS

# The Atom Stars in Hollywood Movies

► **THE LATEST** movie sensation has no glamor, no sex appeal, but for all that it packs a terrific wallop. The newest star is the atom.

Already one film starring the atom has been produced by RKO and another is in production. They were produced according to outlines of scripts supplied by the Council on Atomic Implications at the University of Southern California.

One stars the atom in what might be called the story of its downfall—for it is about radiation, the process by which unstable atoms break down into atoms of lower weight and lower atomic number. It tells of the kinds of radioactivity—alpha, beta and gamma rays—how radioactive elements are produced, both by cyclotrons and

in fission piles, and some of the uses of these breaking-down elements.

The second film casts the atom in the role of a villain—and charts the organization of the community's defense against him. Here the atom is considered as the source of energy in the enemy's atomic bombs and various measures of civil defense are shown.

The atom is a versatile actor. The Council has offered the outlines of five more scripts giving the atom a chance at the most varied roles. One has him playing the comedian. In this film he becomes part of radioactive cold cream, radioactive mosquitoes and even radioactive golf balls. The script points out that one-half the 25,000,000 golf balls produced each year are lost and suggests that a bit of a radioactive element under the skin of the balls, together with caddies equipped with Geiger counters might solve this pressing problem.

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## ICHTHYOLOGY

# Shrimp and Fish To Be Spotted in Gulf

► **A NEW** pinpoint accuracy in finding shrimp and fish in the Gulf of Mexico is the goal of a long-term scientific study begun by the U. S. Department of Interior's Fish and Wildlife Service.

If the investigations are successful, the era of shrimp boats dragging trawls across the Gulf for days at a time without a catch will come to an end.

During the past seven months five cruises have been made by the research vessel Oregon. Soon to be launched is a second, brand-new fishery biology ship, the Alaska.

Together, the two vessels will spend many years charting the fishing areas of the Gulf. They will correlate hydrographic information and the features of the Gulf's bottom with the presence of shrimp and other popular seafood.

The Oregon uses commercial fishing gear and methods. The Alaska will be a floating marine laboratory. Its biologists will study particularly the tie between plant food in the water, the so-called "plankton," and the amount of fish or shrimp present.

Scientists have already found that temperature and the amount of salt in one layer of the Gulf have an effect on shrimp. Also, the presence of other animal organisms in the water is an indication that shrimp are nearby. One of these "indicator" creatures is an arrow worm—a transparent bi-sexual little animal less than an inch in length.

The Gulf of Mexico study is similar to work done several years ago in the cod and haddock fishing areas off the northeastern coast of the United States. Today, cod and haddock fishing has become a precise art.

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