

PHYSICS

Atomic Age Bright Lights

Fissionable materials will be scarce for domestic use such as in ceramics or photography, but will continue to be available for electric light bulbs.

► SOME OF the atomic bomb's fissionable ingredients which you have around the house may become rarities, but your light bulbs will shine just as brightly.

These are some of the facts of life in an atomic age. Yellowish-green, fluorescent glass, getting its unique qualities from uranium, cannot be manufactured in the United States after April 1, under regulations laid down by the U. S. Atomic Energy Commission.

Pottery plates, cups and vases with a certain striking red color and a sort of yellowish tinge are out, too. The color came from uranium, and some of these pieces, which were very common before the war, may become collector's items.

Light bulbs, however, will continue to use thorium, which scientists have found can be used with uranium in an atomic bomb. The well-known tungsten filament of light bulbs contains one to one and one-half percent thorium to increase the light.

Rules issued by the Atomic Energy Commission prohibit use of uranium in ceramic or glass products and in photographic work, unless under "exceptional circumstances," after April 1. Ceramic and glass products with uranium are already scarce because the use of uranium was curtailed during the war.

In photography, uranium is used in toning baths, but other satisfactory chemicals are available and more frequently used. Uranium compounds for photographic use have not been sold for several years due to wartime restrictions.

Under the commission's regulations, which become effective April 1, licenses will be required for all materials with one-twentieth of one percent of uranium and thorium or any combination of the two elements.

Glass, ceramics and photography are listed as exceptions to this rule, but another provision says there will be no further supply for use in those products.

Incandescent mantles, refractories, certain rare-earth metals and compounds and vacuum tubes are exempt from licenses as is any transfer or delivery during one calendar month of uranium or thorium ores which contain less than 10 pounds of the metals.

In addition to light bulbs and many specialized tubes which use thorium, crucibles using thorium oxide, employed in melting such elements as platinum, and compounds of rare-earth elements which naturally contain some uranium or thorium will be permitted without any license.

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MEDICINE

Hydrogen Peroxide vs. TB

► HYDROGEN PEROXIDE, the household first aid treatment for cuts a generation ago, may help the fight against tuberculosis.

Tuberculous abscesses which had not been helped by any other form of treatment cleared up when this remedy was applied in wet dressings two to six times daily, Dr. Ethan Allan Brown of Tufts Medical School and Dr. L. W. Slanetz of the University of New Hampshire report in *Science* (March 21).

The treatment was given over a period of four to eleven months. To make sure the improvement was not temporary, the doctors delayed reporting the results until a year after the abscesses had healed.

The peroxide used was a special form made by dissolving urea peroxide in anhydrous glycerol, which gives a more stable solution. Successful use of this new type of antiseptic solution in middle ear infections, mouth infections and empyema was reported by Dr. Brown a year ago.

When laboratory tests showed it could kill tuberculosis germs, Dr. Brown decided to test its possibilities as a remedy in human patients. These trials were made with Dr. Joseph Goldberg on four patients at the Essex County Tuberculosis Sanatorium at Danvers, Mass.

The patients had the extremely chronic, smoldering type of abscesses known as

"cold abscesses" which are both troublesome and very likely to relapse. While four patients is a small number, the doctors are reporting these preliminary trials of the peroxide solution in the hope that other doctors will be stimulated to explore further its possibilities.

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AERONAUTICS

Flying-Wing Bomber Nears Completion

See Front Cover

► A FLYING-WING jet-propelled Army bomber is nearing completion at the Northrop plant, it has been revealed. It is the first of the type ever built.

This new plane, shown in the Army Air Forces photograph on the cover of this SCIENCE NEWS LETTER, which is all wings and has neither tail nor the familiar fish-shaped body, is a brother to the giant Flying Wing bomber and cargo ship which made its first flight test during 1946. Unlike it, however, it has no visible propellers to push it through the air.

This new jet-bomber, the YB-49, is powered by eight General Electric J-35 jet engines, capable of producing a total of 32,000 pounds thrust. They are arranged in two groups of four, one group on each side of the center. Like its older brother, the B-35, it is controlled by Northrop-designed elevons, a control surface that performs the functions of both elevators and ailerons in ordinary planes.

The new Flying Wing is 53 feet long and has a spread of 172 feet. The B-35 Flying Wing has the same span. Both are the nearest approaches yet made to airplanes consisting wholly of supporting surfaces. Almost every portion of both contribute to lift, and the parts of ordinary planes that contribute most to drag are lacking.

America is not the only country experimenting with jet-propelled flying-wings. The British have announced a twin-engine, jet-propelled, tailless plane that is now ready for tests in the air. It is considerably smaller than the YB-49, but plans for larger versions are already made. (See *SNL*, Jan. 25, 1947.)

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Colored flames in a fireplace may be obtained by mixing with the fuel lithium chloride for purple, strontium nitrate for red, copper sulfate for blue, and sodium chloride (common salt) for orange flames.