

## Do You Know?

Color is the chief factor in grading *maple sirup* for quality.

Most mammals, except man and certain primates, seem to be *color-blind*.

Germans are reported to have used *electronic heating* during the war in lumber drying, wood gluing, cigarette curing, plastics heating, lice killing, and food processing.

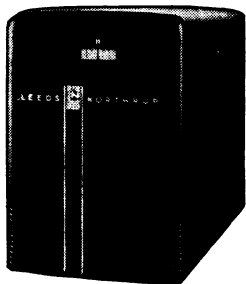
*Jackrabbits* have played a large part in scattering juniper trees, often called cedar, on prairie grasslands in Texas and Oklahoma; the rabbits eat the berries of the tree but do not crack the seeds and they pass through the digestive tract un injured.

*Teamsters* of earlier years are said to be responsible for the American custom of passing on the right; they rode the left rear horses of their four-to eight-horse teams so that their right, or whip, hand would be free to reach all animals, and passed on the right to see clearance with other wagons.

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possible sources of atomic energy, Dr. Millikan said, the world's atomic resources are limited.

"They are easily exhausted and therefore they will be increasingly costly," he cautioned.

The scientist declared that the suggested use of the lightest element, hydrogen, for the release of atomic energy, a process which is believed to take place on the sun, "is forever unattainable on earth."

Only four important deposits of uranium are known, Dr. Millikan reported. These are in Belgian Congo, Czechoslovakia, Canada's Big Bear Lake and the carnotite ores of southwestern Colorado and southeastern Utah. Most important are the ones in Belgian Congo and Canada.

New sources of the atomic bomb element may be found, but "uranium will continue to be a very scarce element," he

predicted. Calling for conservation of atomic resources, he asserted uranium "should not be used for any major fuel or power purpose."

Without using uranium, Dr. Millikan said, we already have unlimited sources of atomic energy. Gas, oil and coal, "three forms of bottled sunlight," are really a form of atomic energy, he explained.

The atomic process in the sun that gives us these standard forms of fuel is due to "atom-building," instead of "atom-disintegrating," which is used in the atomic bomb, the scientist added.

"The greatest service to mankind of the atomic bomb and atomic energy," Dr. Millikan suggested, "would be to make clear as crystal to all classes and conditions of men the world over the necessity for eliminating aggressive war."

*Science News Letter, May 1, 1948*

### ZOOLOGY

## Cancer Cells Transformed

► TRANSFORMATION of cancer cells to normal cells was reported by Drs. S. Meryl Rose and Hope M. Wallingford of Smith College at the meeting of the National Academy of Sciences in Washington.

The transformation was accomplished by transplanting a cancer from a frog into the limb of a salamander and, after the cancer graft had taken, cutting off the limb through the cancer.

In all cases the salamander grew a new limb in the normal way. Within the new, regenerated salamander limb were patches of normal frog muscle, cartilage and fibrous connective tissue. These had grown, or regenerated, from the transplanted frog cancer. Most of them were next to unchanged cancer cells which remained in the old part of the salamander limb above the line of amputation.

Normal tissues in regenerating limbs, the scientists pointed out, go back to the embryonic state in which the cells are undifferentiated. Then, as the cells grow they differentiate into new tissues, just as the embryo cells differentiate into muscles, bones, nerves, and glands.

Because cancerous tissue seems to be abnormally differentiated, the scientists tried to see whether it could be forced back to the embryonic state of no differentiation from which it would be transformed into normal tissue as the cells regenerated.

Frog cancers were transplanted into

salamander limbs so that the former cancer cells could be recognized if they did go back to normal. The frog cancer cells have small nuclei, whereas salamander limb cells have much larger nuclei. The difference in size of cell nucleus made it possible for the scientists to tell which cells in the new salamander limb were salamander cells and which were originally frog cancer cells transformed to normal.

*Science News Letter, May 1, 1948*

### GEODESY

## Parachuted Flares Aid In Charting Locations

► RADIO-timed flares dropped on parachutes from high-flying planes, instead of lights on top of high skeleton towers, are the newest technique for enabling geodetic surveyors to pin-point locations on charts with great accuracy. The method was described before the meeting of the American Geophysical Union in Washington by Lt. Comdr. F. R. Gossett of the U. S. Coast and Geodetic Survey.

A tryout tying in the coasts of Florida and the Bahamas has given assurance that results are valid if conditions are right. The weather has to be perfect, so that six flares dropped simultaneously, three over accurately known locations and three from undetermined spots, can be seen at the same time. Possible ranges run up to 200 miles.

*Science News Letter, May 1, 1948*