

MEDICINE

Chain Reaction Celebrated

First nuclear chain reaction was achieved Dec. 2, 1942, which has led to better treatment for cancer, leukemia, thyroid disorders, and other diseases.

➤ NEW REPORTS of the benefits and dangers from atomic energy highlighted the fourth anniversary of the first self-maintaining nuclear chain reaction at the University of Chicago's metallurgical laboratory.

Sufferers from leukemia, cancer, thyroid gland disorder and perhaps other diseases have reason to join with scientists in remembering December 2, 1942. Peaceful applications of atomic power are becoming available for medical use.

Treatment of five times as many leukemia sufferers as formerly at one medical institution is one of the most recently announced achievements from a chain reacting pile. The reduced price of radioactive gold from the uranium pile at Oak Ridge, Tenn., makes it possible for more leukemia sufferers to get radiation treatment. This was announced by the Monsanto Chemical Company which operates the Clinton Laboratories at Oak Ridge for the Manhattan Engineer District.

Future accomplishments in treatment of disease and in better knowledge of body chemistry in health and disease will be greater than what has already been achieved with radioactive isotopes, scientists predicted at the anniversary observance held in connection with the meeting of the Radiological Society of America in Chicago.

New knowledge of the dangers of radiation has been gained through medical studies during and since the development of the atomic bombs.

Most of the hazards of over-exposure to radiation in the industry itself have been eliminated, Dr. C. Ladd Prosser, of the University of Illinois, stated. His experiments showed that the effects of radiation on the body are not progressive but happen very suddenly some weeks and even months after exposure.

Healthy cells surrounding cancer cells may become cancerous after the original malignant cells have been treated by radiation, Dr. Austin M. Brues, director of the biology division of the Argonne

National Laboratory, has found in his work on the Plutonium Project.

Science News Letter, December 7, 1946

ASTRONOMY

Sun's Speed Related To Globular Clusters

➤ A NEW star-gazing study has uprooted the basis for determining the speed at which the sun travels in its orbit through the Milky Way.

But it's nothing to worry about. The sun is still highballing at the same speed. The early estimates were "lucky" in accurately calling the turn.

This is revealed by Dr. Nicholas U. Mayall, associate astronomer in the University of California's Lick Observatory.

The new facts were unearthed in observations of 50 globular star clusters, great spherical stellar concentrations which pepper the heavens out to the edge of the galaxy.

Dr. Mayall explained that the sun's speed was estimated by observing its position relative to a few of the globular clusters. It was assumed in these calcu-

lations that the clusters did not rotate.

These "island universes" do rotate slightly. Dr. Mayall found the calculation comes out the same: the sun is traveling in its orbit at from 175 to 185 miles per second.

In addition to their rotation, Dr. Mayall discovered that the star clusters are traveling at a great random speed through space unlike the majority of stars in the galaxy. This random velocity is about 60 miles per second, which compares with a random speed for the sun and other stars in the galactic system of about 10 miles per second.

The globular clusters form the backbone of the galaxy, of which the solar system is but a trivial part. They contain stars of all brightnesses. The sun would be lost in one of them, since most of them contain tens of thousands of stars as bright or brighter.

About 100 such island universes are known, the closest being about 25,000 light years away and the farthest 150,000 light years distant. A light year is nearly six million miles.

Science News Letter, December 7, 1946

MEDICINE

Toxic Convulsions Caused By Lack of B Vitamin

➤ THE DANGEROUS toxic convulsions which afflict some expectant mothers shortly before their babies are due may be caused by lack of a B vitamin, choline.

The counterpart of the damage to kid-



TO GIVE POWER—The last of five generators for Shasta Dam, second largest structure built by man and in the Sacramento River Valley, is being constructed by General Electric.