MEDICINE

Anti-Radiation Factor

Find an anti-bomb substance in body tissues that gives promise of break-through in search for methods of radiation treatment.

➤ AN ANTI-ATOM bomb substance in body tissues that markedly helps animals survive killing doses of irradiation has been discovered by an Argonne National Laboratory—University of Chicago professor.

It gives "promise of a break-through in the search for methods of treatment" of atomic bomb radiation injury and is "the outstanding contribution" of the year to this problem, another University of Chicago professor, Dr. Franklin C. McLean, declared at the meeting of the American Medical Association in Atlantic City, N. J.

The existence of the anti-atom bomb substance was discovered by Prof. Leon O. Jacobson. In earlier research Prof. Jacobson found that lead shielding of the spleens of mice protected them from killing doses of X-rays. Next he found that transplanting spleens of baby or grown-up mice into other mice up to two days after they have been given killing doses of irradiation significantly increased their survival.

Very recently, Prof. McLean reported, Prof. Jacobson has found that "press juice" from unborn mice injected into other mice after doses of rays that kill 99% of exposed animals saves eight of 27, or a little better than 30% of the mice. "Press juice" from spleens as well as from whole mouse embryos carries this anti-irradiation factor.

The substance that has the anti-irradiation effect has not yet been isolated. It acts to save the mice by restoring the function of the blood-forming bone marrow.

Female sex hormones and three other chemicals, cysteine, glutathione and para-aminopropiophenone, have been shown to ward off irradiation injury when given to animals before exposure. These might prove useful for protecting the crew of a nuclear-energy-propelled aircraft while on a mission, but "it is doubtful," Prof. McLean said, whether they would be of much use for the civilian population or troops in the field.

"The best protection against radiation is still external, or shielding," he declared.

This might vary, he suggested, from partial shielding of the pilot's seat in a plane to a trench, foxhole or concrete or brick walls.

Blood transfusions, to overcome the anemia following irradiation, should be reserved until the second week after damage, he stated.

He declared "there is no evidence" for the general opinion that mass transfusions of whole blood will prove a life-saving specific for radiation injury. The effects of transfusions on such injury, he added, are now "fortunately" being re-evaluated.

Science News Letter, June 30, 1951

ASTRONOMY

Star's Age Sets Its Speed

➤ YOUNG STARS may shine with the brightness of hundreds of thousands of suns, but it is the old stars, formed in the original creation of the universe, that are speeding through space.

Stars formed in the original creation of the universe, and thus about three billion years old, are quite different from stars formed and continuously forming ever since from interstellar clouds of gas and dust, Drs. Martin Schwarzschild and Lyman Spitzer, Jr., both of Princeton University Observatory, told members of the American Astronomical Society meeting in Washington.

These old original stars and the young, newly-created stars should be considered as the two main types of stars that shine so brightly in the Milky Way, the astronomers suggested.

None of the primeval stars gives off more than 2,000 times as much light and heat energy every second as our sun. But a few cloud stars, some only a few hundred million years old, are unusually bright, shining with the brightness of 100,000 suns. Only young and spend-thrift stars, burning their atomic fuel rapidly, can shine so brightly; primeval stars that were once so bright ran out of fuel several billion years ago, and are now dark and invisible.

The youngest cloud stars move at random with an average speed of ten miles a second. This is because of the low average speed of the vast individual clouds, each some trillion miles across, which condense to form these new stars, Drs. Schwarzschild and Spitzer pointed out.

Many older cloud stars have doubled this speed and are now traveling 20 miles a second. A cloud star is gradually accelerated by the gravitational pull of vast cloud banks, not yet condensed into stars, the astronomers suggest. Calculations show that this process within three billion years might about double a cloud star's speed.

Primeval stars, on the other hand, race across space, traveling a hundred miles a second or so. These great speeds cannot be explained in the same manner. They are probably due to violent chaotic motions in the primordial substance from which the universe was created.

Science News Letter, June 30, 1951

MEDICINE

Jelly-Like Colloids Prevent Kidney Stones

➤ JELLY-LIKE materials called colloids may be the means of saving thousands from the pain and suffering of kidney stones.

"Extremely encouraging" results from this attack on the kidney stone problem have been obtained by Dr. Ernst A. Hauser, professor of colloid chemistry at Massachusetts Institute of Technology and Dr. Arthur J. Butt of Pensacola, Fla.

The colloids are given by injection. Theory of the treatment is that formation of kidney stones is averted in the healthy person by the presence in the urine of certain types of colloid.

Study of several hundred patients shows that kidney stones occur most often in persons lacking these colloids in their urine, Dr. Hauser reported to an American Chemical Society meeting in Ithaca, N. Y.

Science News Letter, June 30, 1951

GENERAL SCIENCE

Heart Researcher Gets Lifelong Annual Grant

➤ SOMETHING NEW in research support, an annual grant for the productive life of the researcher, has been started by the American Heart Association.

This is said to be the first time a voluntary agency has undertaken a program providing for continuing careers of scientific investigators of proved ability and originality.

The first career investigator under the new program is Dr. Victor Lorber, associate professor of biochemistry at Western Reserve University, Cleveland. He is 39. He will receive a $12,000-a-year stipend, plus a maximum of $7,500 a year for technical assistance and supplies. The institution where he chooses to work will receive $1,000 a year for overhead.

This type of research support, with its promise of independence for a lifetime of research, has long been urged by leading scientists as providing the "best climate" for medical research.

The American Heart Association hopes, as its income increases, to be able to support more such career investigators.

Science News Letter, June 30, 1951