

such things as protein differences between individuals who reject tissue grafts."

Col. Hamit said one of the most promising studies is that of ribonucleic acids (RNA) and deoxyribonucleic acids (DNA) in the white blood cells and other kinds of cells. He said these acids appear to form some of the basic "building blocks" of the proteins in the chromosomes, nuclei and other parts of the cell.

"Slight differences in combination of the basic elements of these proteins appear to be responsible for some of the differences in individuals, and we are trying to learn what these differences are," he explained.

PUBLIC HEALTH

May Reduce Strontium-90

► AN IMPORTANT ADVANCE has been reported toward ultimate control of strontium-90, an element in radioactive fallout and one of the recognized hazards of the atomic age.

Dr. Willard F. Libby, a former Atomic Energy Commissioner, has suggested that the biological availability of strontium-90 might be reduced if nuclear explosions were conducted so that the strontium-90 is incorporated in insoluble particles that would make it unavailable to living organisms. Such incorporation would have to take place in the bomb cloud during the time required for condensation of the explosive material.

Dr. Libby's theory was tested in a series of experiments by Drs. E. A. Bryant, G. A. Cowan, J. E. Sattizahn and B. Warren of the University of California's Los Alamos Scientific Laboratory at Los Alamos, N. M.; Drs. W. R. Heald and R. G. Menzel of the U. S. Department of Agriculture soil and water conservation research division, Beltsville, Md.; and Dr. R. F. Reitemeier of the AEC's division of biology and medicine in Washington, who report their results in *Science*, 132:327, 1960.

Certain requirements must be met to successfully reduce the biological availability of strontium-90 (its uptake in plants from contaminated soil):

1. Incorporation in particles able to resist prolonged exposure to weathering and soil.

2. Incorporation in sufficiently large particles so that the strontium-90 does not diffuse appreciably in the 28 years of its half-life.

3. The right temperature history to allow incorporation of strontium-90 formed by decay of non-condensable krypton-90, a gaseous predecessor of strontium-90 with a 33-second half-life.

The extent to which the requirements are met determines the availability of the strontium-90. Tests showed that availability could be reduced by 50%. However, complete failure of any one requirement apparently results in complete failure to reduce availability.

The extent of world-wide fallout reduction also may depend on whether the explosion is at ground-level or in the air.

Obtaining enough of the patient's own skin to cover the burn area is a problem in cases of large-sized burns. Skin from other people is often used as a temporary covering until the victim's own skin can grow.

The Russians have used the membrane lining the abdominal wall of cattle for a temporary graft or "dressing" to the burned skin of human beings. There are cases in the United States in which the skin from unborn calves has been used as a temporary graft on people. Skin from persons who have just died is commonly used for temporary grafts, provided permission has been granted prior to death.

• *Science News Letter*, 78:122 August 20, 1960

Ground-level will offer the possible advantage of increased local fallout as opposed to world-wide fallout.

• *Science News Letter*, 78:123 August 20, 1960

ROCKETS AND MISSILES

"Sky-Writing" Satellites Forecast by Russians

► "SKY-WRITING" by satellites as far from the earth as the moon or farther, using small batches of the element lithium, is forecast by five Russian scientists.

They suggest a method for substantially increasing the brightness of space rockets by ejecting a cloud of gas that will glow like an artificial comet. The development of a lithium artificial comet will solve the problem of optical observations of man-made satellites within the solar system, they predict.

A cloud of vaporized sodium has already been used by the Russians to aid in tracking the lunar rocket launched on Sept. 12, 1959. Since sodium is not an "ideal substance" for making artificial comets, they recommend lithium. One reason is that 40 times as much sodium is needed as when lithium is used.

The suggestion for using artificial lithium comets is reported in *Soviet Astronomy*, 3:986, 1960, published in New York by the American Institute of Physics, in a translation of a paper by I. S. Shklovskii, V. F. Esipov, V. G. Kurt, V. I. Moroz and P. V. Shcheglov of the P. K. Shternberg State Astronomical Institute.

• *Science News Letter*, 78:123 August 20, 1960

PUBLIC SAFETY

Home Fires Have Decreased in Past Year

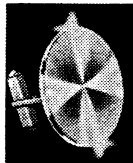
► THE NATIONAL BOARD of Fire Underwriters has reported that the home inspection program of the International Association of Fire Chiefs has decreased fires by five percent throughout the nation in the past year. In 1959, 15,000,000 homes in the United States were inspected by uniformed firemen.

• *Science News Letter*, 78:123 August 20, 1960

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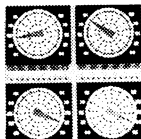


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