

METEOROLOGY

Life Span of Silver Iodide

➤ NEW EXPERIMENTS have added to the controversy over whether rain can be artificially induced over wide areas by seeding with particles of silver iodide. Silver iodide is now generally used in the \$3,000,000-a-year rainmaking industry.

The experiments, conducted by one of the original rainmakers, Dr. Bernard Vonnegut, and Raymond Neubauer, both of the General Electric Research Laboratories, Schenectady, N. Y., almost directly contradict earlier tests which claimed to show that after 20 minutes exposure to sunlight, silver iodide particles lost their effectiveness as rain "triggers."

Dr. Vonnegut and Mr. Neubauer said, in a report to the American Meteorological Society, that recent experiments showed that from 40% to 100% of the silver iodide remained active after one hour of exposure to ultraviolet light.

Their recent results also do not jibe with the results from another set of experiments in which Dr. Vonnegut took part in New Mexico. At that time, Dr. Vonnegut and his associates in the experiment found that the number of nuclei in a given sample of silver iodide smoke was reduced by a

factor of from ten to 100 after an hour's exposure to sunlight or comparable radiation.

The experiments which showed that 20 minutes was long enough to kill the effectiveness of silver iodide were conducted by Edward C. Y. Inn, of the Air Force Laboratories at Cambridge, Mass. He observed that light changed the shape of silver iodide particles. They were first used in attempts to make rain because they are shaped like ice crystals. If their shape is changed, they cannot form ice.

Because of their original shape silver iodide crystals are being used in the rainmaking operations over most of the western states. Dr. Vonnegut and Mr. Neubauer carried out a series of 12 experiments in which silver iodide smoke was subjected to an ultraviolet light. Samples of this smoke were then introduced into a supercooled cloud.

The two scientist do not know, they say, the reasons for the different results from the three sets of experiments. However, they think the efficiency of silver iodide may be influenced by impurities, either in the smoke or in the atmosphere.

Science News Letter, February 16, 1952

BIOCHEMISTRY

Synthetic Vitamin B-6

➤ SYNTHETIC PRODUCTION for the first time of a B vitamin which may give scientists a chance to learn more about cancer and nutrition has been accomplished by Drs. Elbert A. Peterson, Herbert A. Sober and Alton Meister of the National Cancer Institute.

The vitamin is known as B-6. It is found in meats, cereals, and yeasts. The body needs it to make proper use of amino acids, building blocks of protein.

Included under the name of vitamin B-6 are three chemicals, pyridoxine, pyridoxal and pyridoxamine. But the body does not use these chemicals as such. It apparently converts them to a phosphate.

The phosphate form of pyridoxamine is what the National Cancer Institute chemists have now produced synthetically. Heretofore only crude, impure preparations of this chemical have been available.

Since cancer tissue has a very low level of vitamin B-6 and a different way of using amino acids from that of normal tissue, availability of the pure, synthetic pyridoxamine phosphate is expected to give science a new, useful tool for cancer research.

Method for producing this chemical, as officially reported to fellow scientists in the JOURNAL OF THE AMERICAN CHEMICAL SOCIETY (Jan. 20), starts with pyridoxamine, which has previously been prepared synthetically. This is reacted with anhydrous phosphoric acid. The resulting crude mixture is separated into its components by an ion exchange chromatographic column. With this method, the scientists are able to get the exact chemical, pyridoxamine phosphate, whereas previously when phosphate was added to pyridoxamine, they "never knew what they got," Dr. Meister put it.

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"Adventures in Science," with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Dr. Norman Jolliffe, director of the bureau of nutrition of the Department of Health of the City of New York, discusses "Important Nutrition Problems in America."

BOTANY

Plant Stems Carry Medicine to Leaves

➤ THE STEMS of bean seedlings can absorb streptomycin and translocate it upward into the leaves within a week in sufficient amounts to suppress development of halo blight germs.

Scientists previously have reported that the roots of plants could do this, but this is the first time stems have been found capable of doing it.

The finding, by John W. Mitchell, William J. Zaumeyer and W. Powell Anderson of the U. S. Department of Agriculture, is reported in the journal SCIENCE (Feb. 1).

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