

METEOROLOGY

Seeding Not Required

When conditions are right it will rain without seeding, experiments of Signal Corps scientists with cloud chambers show.

► EXPERIMENTS CONDUCTED by the Army's Signal Corps Engineering Laboratories show that in most cases where the weather conditions are favorable to rain, it will rain without cloud seeding to produce artificial rain. This is the statement of two Signal Corps scientists, H. J. aufm Kampe and H. K. Weickmann. The Signal Corps has been associated with General Electric Nobel Prize Winner Dr. Irving Langmuir in "Project Cirrus" which conducted early experiments in rain-making. Dr. Langmuir has since claimed that cloud seeding has produced changes in the weather over areas equal to half the United States.

The two Signal Corps scientists experimented in a cloud chamber to determine the temperatures at which both natural and artificial cloud "seeds" would produce the ice crystals necessary in clouds for rain. They discovered that silver iodide, the material used generally in the \$3,000,000 American rain-making industry, causes ice crystals to form at temperatures between three and five degrees Centigrade below freezing, zero on the Centigrade scale.

Natural "seeds" or nuclei in the air, on the other hand, cause crystals at temperatures between 10 and 15 degrees Centigrade below freezing, or zero.

This information, the two scientists declared, permits certain conclusions to be drawn as to the probable effectiveness of artificial seeding in producing appreciable amounts of rain over and above that which nature produces.

In moderate climates, they pointed out, conditions for rain and snow are generally most favorable at cold fronts and warm fronts. The cloudiness in both these conditions, they said, extends to very high altitudes, where temperatures are almost always much colder than the upper limit they found for the effectiveness of natural "seeds." In both these conditions, they said, the clouds contain enough freezing nuclei to give heavy rain or snow.

In some few instances, the scientists said, clouds do not extend so high. If the cloud nevertheless reaches high enough to cool off its top to below freezing, or zero degrees Centigrade, and above minus 15 degrees Centigrade, then silver iodide "seeds" might be effective. These situations, they believed, are usually local and of short duration.

The account of their experiments appeared in the current issue of the *JOURNAL OF METEOROLOGY* (Oct.).

Science News Letter, November 24, 1951

MEDICINE

Dextran Tops in One Test

► DEXTRAN, A sugar chemical substitute for blood plasma in cases of shock, got a big hand at the meeting of the American College of Surgeons in San Francisco.

It rated first among four blood plasma substitutes in experiments at the Mayo Clinic and Foundation, Drs. Robert C. Knutson, Jesse L. Bollman, and John S. Lundy reported. The experiments were designed to test ability of these chemicals to restore blood volume after a measured, acute hemorrhage.

The other three chemicals, in descending order of effectiveness in these experiments, were: gelatin, acacia and periston, or polyvinylpyrrolidone, also known as PVP for short.

Dextran's effectiveness in fighting shock in 20 patients who had been wounded or were suffering from intestinal strangulation was reported by Drs. B. W. Haynes, Jr., and Michael E. De Bakey of Baylor University College of Medicine, Houston, Tex.

The chemical, they found, was effective for early resuscitation of patients with wound shock. Depending on the kind of wound, the surgery needed to repair it and the amount of blood lost, dextran may give enough support to the circulation to enable the surgeon to repair the wound without giving whole blood. Or it may reduce to a minimum the amount of whole blood needed to carry the patient through the operation.

Anemia may result from use of dextran for patients with wound shock. But a distinct advantage achieved by the use of dextran is that whole blood transfusion does not have to be given immediately in an emergency but can be given later.

Patients with extensive injuries and severe blood loss cannot be resuscitated with dextran alone, the Houston surgeons emphasized. Whole blood will be needed in such cases.

Science News Letter, November 24, 1951

● RADIO

Saturday, Dec. 8, 1951, 3:15-3:30 p. m. EST

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

Gen. George C. Kenney, president of the Arthritis and Rheumatism Foundation, and Dr. Darrell C. Crain, president of the District of Columbia chapter of the Arthritis and Rheumatism Foundation, will discuss "The Fight Against Arthritis."

MEDICINE

Cobalt 60 "Bomb" for Treating Cancer Patients

► A COBALT 60 "bomb" which promises life-saving treatment for more cancer patients was officially installed in the clinic of the Ontario Cancer Foundation, London, Ont.

The cobalt bomb is a small portion of radioactive cobalt 60 enclosed in a heavy lead case. Rays from the bomb can be directed to the cancer in a patient's body, much as X-rays are directed now in cancer treatment. But the bomb rays can penetrate deeply within the patient's body, without harming normal tissue on the way, in a manner that only a few super-voltage X-ray machines can do. And the bomb can deliver this penetrating, cancer-killing dose of rays at much less cost than the same dosage of X-rays or radium.

Radium to produce an equivalent amount of radiation would cost about \$50,000,000, while the price of the cobalt 60 bomb is only about \$50,000.

The cobalt for the bomb is made radioactive in the Canadian National Research Council's atomic pile at Chalk River, Ont.

The cobalt 60 bomb installed at London, Ont., is only the first of several similar units being produced for hospitals and cancer clinics in Canada and the United States.

Science News Letter, November 24, 1951

Yosemite Field School

A Workshop in Interpretive Methods

Twenty selected college graduates will have the opportunity to spend the summer in Yosemite National Park under the tutelage of the National Park Service Naturalist Division. They will receive intensive, varied training in the presentation of natural and human history to the public, and in the techniques of interpretation—on nature walks, with children, at campfires. Also considered will be related matter such as museum methods and the use of museum and library materials. Twelve days will be spent in the High Sierra, an opportunity for maturing, exhilarating personal experience. Students pay own expenses, plus modest incidental fee.

Application deadline, February 28.

For prospectus, address:

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