

METEOROLOGY

Project Skyfire Aimed at Stopping Lightning Fires

► PROJECT SKYFIRE, a joint venture of foresters and weathermen, starts its first full season of operation this June, with field experiments being conducted in Idaho and Montana.

The project's aim is to cut down on lightning-caused forest fires by cloud seeding. In the West, 49% of forest fires result from lightning.

The scientists will heavily seed supercooled clouds, composed of water droplets below freezing temperature, with silver iodide to cause the droplets to change to ice. They hope large doses of the chemical will inhibit the clouds' upward growth, a growth that is necessary before lightning occurs.

Preliminary tests of equipment, including radar to detect and track lightning storms, were made last summer.

Cooperating in Project Skyfire experiments are U. S. Department of Agriculture's Forest Service, Munitalp Foundation, U. S. Weather Bureau, Montana State University, University of Washington, National Park Service and California State Division of Forestry.

Previous studies have shown 100,000 lightning fires occurred from 1940 to 1955 in 12 states in the Rocky Mountains and Pacific Coast area. If the information gathered this summer shows the method is feasible, the technique will be considered for other areas.

Since little natural rainfall occurs along with lightning storms in the West, seeding clouds is not expected to reduce the total amount of precipitation.

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GEOPHYSICS

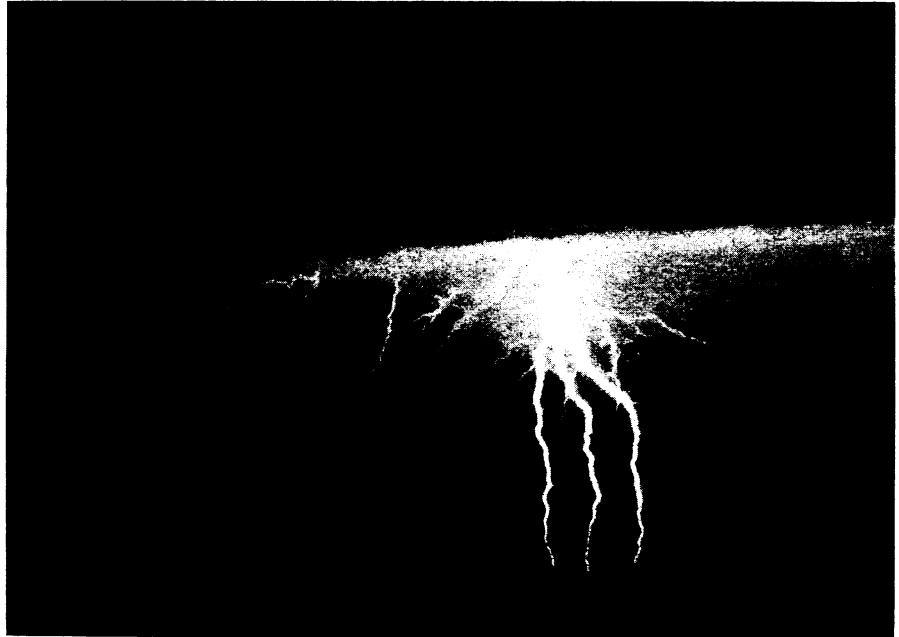
Russia Pushes Into Antarctica**See Front Cover**

► THE RUSSIANS in Antarctica are currently at work establishing inland bases on their way to the "Pole of Inaccessibility"—the area between the South Pole and South America. In this part of the white continent there is a land area equal to half of Europe unseen and unexplored.

Tractor trains, loaded with prefabs, scientific gear, power and radio stations, fuel and food have left the main base at Mirny for inland. The photograph on the cover of this week's SCIENCE NEWS LETTER, believed to be the first of the Russians in Antarctica published in the United States, shows two expedition members erecting telephone wires at the Mirny base.

Stations in the planning stage include the Vostok station, with 12 scientists under V. Avervanov, at the geomagnetic pole 930 miles south of Mirny, and the Sovietskaya station, with 10 scientists under S. Kartashov.

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LIGHTNING STRIKES—In the western United States valuable mountain forests are destroyed each year by lightning fires. In the Arizona-New Mexico area 79% to 84% of all forest fires are caused by lightning, with the Idaho-Montana area running a close second with 69% to 71% of all fires being lightning-caused.

AGRICULTURE

Growth Promoters Found

► SUBSTANCES rivaling the gibberellins, compounds that cause plants to grow like Jack's beanstalk, have now been found in seven different families of flowering plants. These include beans, peas, plums, apricots, avocados and the English walnut. A team of scientists from the University of California at Los Angeles reported on the research to the National Academy of Sciences in Washington.

The "gibberellin-like" substances found in extracts from the seeds and fruit of the seven families of flowering plants produce the same growth response in maize dwarfs as do the known gibberellins. The maize dwarfs treated with the substances grew as much as 400% over the untreated control plants.

The results of the study, the California scientists say, suggest the widespread occurrence in flowering plants of substances having growth-promoting properties similar to the known gibberellins. Gibberellins, which have received wide publicity recently as growth promoters, are products of certain strains of the imperfect stage of the fungus *Gibberella fujikuroi*, a serious disease of rice plants in Japan. (See SNL, May 18, p. 314.) Studies of the gibberellins indicate that they have many different effects on plants aside from stimulating plant growth. They can cause earlier flowering, faster germination, change the shape of leaves, and increase the amount of fruit produced.

Just how close chemically the "gibberellin-like" substances are to gibberellins themselves will require more research data.

The research team of Dr. Bernard O. Phinney, Dr. Charles A. West, Mary Ritzel and Peter M. Neely of UCLA's departments of botany and chemistry conclude:

1. Extracts from nine genera representing seven different families of flowering plants give a "gibberellin-like" response in dwarf maize plants.

2. Five genetically different dwarf mutants of maize respond both to the gibberellins produced by the fungus *Gibberella fujikuroi* and to the "gibberellin-like" substances obtained from the seed or fruit of flowering plants. Four other dwarf mutants respond only slightly in the seedling stage to the gibberellins and to the "gibberellin-like" substances. Another mutant, dominant-dwarf, gives no growth response to the gibberellins or to the "gibberellin-like" substances.

3. The structural response in the tested plants was the same for both groups of growth promoters.

4. The study suggests the "gibberellin-like" substances are not chemically identical with the known gibberellins and there may be a number of "gibberellin-like" substances present in flowering plants.

The study was reported in the *Proceedings of the National Academy of Sciences* (May).

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