

AGRICULTURE

No Surpluses by 1975

► **TROUBLESOME FARM** surpluses of today may be a much desired but unavailable commodity by 1975, a Government land reclamation expert told the International Arid Lands Meeting in Albuquerque, N. M.

In a strong attack on those who advocate reducing the amount of water given to irrigation because we have surpluses, L. N. McClellan, assistant commissioner and chief engineer of the Bureau of Reclamation at Denver said, "crop surpluses should not be considered a serious liability so long as there are human beings on the edge of starvation anywhere in the world."

Calling the nation's recent years of crop surpluses "transient," Mr. McClellan said that without "unceasing efforts in the direction of expansion, by 1975 our surpluses as we know them today will disappear simply under the impact of increasing population in the United States itself."

Citing the fact that "shifting sands and whirlwinds of dust" have not prevented the arid West from supporting a population of

38,000,000 people, the West's reclamation chief credited the energies of man and his skills in science with creating undreamed-of crop, livestock and industrial wealth.

He noted that of the 42,000,000 western acres "susceptible to irrigation," only 25,000,000 are being watered. It is essential, he pointed out, that the other 17,000,000 be irrigated too.

But adding more cultivated acreage is not enough, Mr. McClellan stated. Better use of water resources must be made.

To accomplish this end, scientists and engineers are busy trying to cut losses from evaporation by coating water surfaces with compounds, such as household detergents, that in effect seal in the water with a barrier of molecules. Others are working on new and effective methods for controlling water-sapping desert plants.

It is estimated, the Colorado expert said, that evaporation and parasitic plants sop up 35,000,000 acre-feet of water a year, or almost half the 78,000,000 used for irrigation.

Science News Letter, May 7, 1955

METEOROLOGY

Hemispheric Rain-Making

► **INFLUENCING WEATHER** on a continent- or hemisphere-wide basis rather than only over a few miles may be the "most effective" use of cloud seeding, the Australian radio-physicist Dr. E. G. Bowen told the International Arid Lands meetings in Albuquerque, N. M.

"One of the most important factors controlling rain formation," he suggested, is meteoric dust floating down through the earth's atmosphere. The meteoric particles act as nuclei on which raindrops condense.

If this is correct, Dr. Bowen said, the atmosphere is "much more free from rain-forming nuclei than has previously been supposed."

This conclusion would have a profound effect on efforts to control weather artificially, a subject of great interest to farmers everywhere, particularly those living in the arid and semi-arid areas that cover one-third of the world's land mass.

Effects of meteoric dust sifting 60 miles or so toward earth are "very much greater" than was once thought, Dr. Bowen, director of the radiophysics laboratory of the Commonwealth Scientific and Industrial Research Organization, suspects.

Recent studies have shown, he said, that 29 or 30 days after the earth enters a major meteor stream, if rain falls at all, the chances are good that the rainfall will be a heavy one. (See SNL Jan. 23, 1954, p. 55.)

This may be due to "effects of meteoric dust falling into cloud systems in the lower atmosphere, the time difference of 30 days" being approximately that required for this

dust to drift down to the height where cloud tops are found.

Concerning present cloud seeding operations, usually carried out by throwing silver iodide into the atmosphere from smoke generators on the ground, Dr. Bowen said "rainmakers have produced more controversy than they have rainfall."

He pointed out that although silver iodide is highly effective as a freezing nucleus in the laboratory, generators on flat terrain often do not send workable shots of it high enough, 15,000 to 20,000 feet, or far enough to do much good. (See SNL Feb. 6, 1954, p. 86.) Dr. Bowen suggested that experiments be tried in which silver iodide is sprayed from airplanes and high mountain tops.

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GENERAL SCIENCE

"Safety Grain" Cuts Skidding on Wet Roads

► **CARS TRAVELING** 30 miles per hour can stop in two-thirds the usual distance on wet slippery asphalt roads when a "highway safety grain" is applied, tests have shown.

The grain particles are made of tough, fused alumina abrasive material with a hardness of over 2,000 on the Knoop scale, as compared to 850 for quartz and flint.

According to a report by C. E. Larson of the Bureau of Public Roads, highway surfaces become polished and slippery in places where traffic is heavy, where acceleration or

deceleration is great and at curves. The situation is made worse by the application of sand and cinders during the icy season. These particles may act as a buffing compound and increase road slickness.

The new safety grain was tested on a section of an asphaltic-coated highway west of Buffalo, N. Y., and the stopping distance on the wet surface was reduced from 100.4 feet to 68.8 feet for a car traveling at 30 miles an hour.

The findings were reported to the Highway Research Board in Washington.

Science News Letter, May 7, 1955

The *beaver* is the largest North American rodent.

SCIENCE NEWS LETTER

VOL. 67

MAY 7, 1955

NO. 19

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N. W., Washington 6, D. C., North 7-2255. Edited by WATSON DAVIS.

Subscription rates: 1 yr., \$5.50; 2 yrs., \$10.00; 3 yrs., \$14.50; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage.

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Printed in U. S. A. Entered as second class matter at the post office at Washington, D. C., under the act of March 3, 1879. Acceptance for mailing at the special rate of postage provided for by Sec. 34.40, P. L. and R., 1948 Edition, paragraph (d) (act of February 28, 1925; 39 U. S. Code 283), authorized February 28, 1950. Established in mimeographed form March 18, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Reader's Guide to Periodical Literature, Abridged Guide, and the Engineering Index.



Member Audit Bureau of Circulation. Advertising Representatives: Howland and Howland, Inc., 1 E. 54th St., New York 22, Eldorado 5-5666, and 435 N. Michigan Ave., Chicago 11, Superior 7-6048.

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