



### After Drought, What?

**D**ROUGHT'S grip on the Great Plains seems to be slipping. Winter brought more snow, spring more rain; dust storms are only intermittent now instead of nearly incessant. A timid green creeps over the Dust Bowl. Farm families, who trekked in creaking jalopies to California, Oregon, anywhere to get away, are drifting back, and those who stayed are hoping to get off relief and "make a crop" for themselves again.

This return from exile gives land-use scientists a chance to grow some new gray hairs. If farm practices are renewed on the old basis, with the coming of a cycle of good rainfall, the Plains will be all set for another act of the same tragic drama when drought returns—as return it doubtless will, some day.

All of which makes timely a new WPA publication, *Farming Hazards in the Drought Area*, written by R. S. Kifer and H. L. Stewart of the Bureau of Agricultural Economics, U. S. Department of Agriculture.

Although they sedulously avoid dramatics and stick to unimpassioned facts and figures, the grief and misery that stalked the West during the nightmare of the mid-thirties crop out in spite of them, through the chill statistics of families on relief, debt loads, depletion of cattle through drought-forced sales, and so on.

Recommendations for rehabilitation necessarily vary from section to section, but in general the reformed land-use practices would include increasing the size of the farm units in the drier areas, taking wind-eroded soils out of plowed crops and putting them under permanent native grass sod, diversifying crops instead of putting almost exclusive emphasis on wheat, and above all develop-

ing a relatively small-scale, one-family livestock industry.

The report recognizes the necessity for financial assistance to farmers in accomplishing this program, as well as the fact that such loans will probably have to be government-backed. But no choice is seen between this and continued bankruptcy and misery for a whole major geographic section.

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### Noise Reduction

**N**OISE reduction in business and industry is a splendid objective, but all too little attention has been given to the proper acoustical design of ear plugs which will enable the wearer to reduce markedly the bewildering irritating and potentially damaging "sea" of noise which surrounds industrial workers everywhere, said Prof. Vern O. Knudsen of the University of California at Los Angeles.

Most ear plugs on the market, Prof. Knudsen indicated, are designed more for swimmers than for hearers. In a systematic acoustical study of such devices Prof. Knudsen has been able to devise improved forms.

One "ear defender," as the device is known, consists of a tapered rubber plug containing an outer plug of heavy metal and an inner plug of soft rubber. The two plugs, which for high insulation against sound should have inertness as large as possible, are coupled by means of an air space and the rubber walls of the tapered tube.

A fifty-decibel reduction in sound intensity is achieved with these new devices; a reduction equivalent to the change in sound intensity on a busy street to that in a quiet garden.

Just as grays, whites and blacks in the background of a painting may enrich the colors of the picture's main theme, so too will the music of the future be played against a background of synthetic tones which will enhance the music's main theme, Dr. Knudsen predicted.

These background "unpitched sounds" can be generated in a type of apparatus already developed—the Voder—which by electrical circuits can simulate a wide variety of natural sounds and even sounds which have never been heard before.

It is possible, suggests Prof. Knudsen, to use filters that will select tonal bands from these sounds which will form a harmonic series. By the musicians of the

future these sounds could be incorporated into music as background which will enrich the main theme melody.

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## Buzz and Hiss Make Speech

**A** BUZZ and a hiss—that's all there is to human speech, even the smoothest sugary tones of a radio announcer.

Bell Laboratory scientists showed that a buzz and a hiss combine to give every infection in the whole gamut of human speech. The buzz-hiss sounds mix and mingle in the throat and mouth and turn into intelligible speech.

The first sound, called the "buzz," has three properties. It has a pitch determined by the fundamental frequency of vibration; an intensity determined by the total sound power issuing from the speaker's mouth; and it has a quality determined by the relative amounts of sound power carried in various frequency bands. The second sound, the hiss, has no pitch whatever and is only a noise.

Homer Dudley demonstrated a new device—yet unnamed—which takes a spoken sentence apart and then puts it together in any fashion the scientists may desire. A young man's husky tones turn to those of a quavering old man, or to the pleadings of a lovelorn girl, at the twist of a dial.

Basically the new speech analysis instrument is like the Voder—now being shown at the World's Fair—but it is controlled by the speaker's voice rather than by keys.

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## Buildings Shaped by Sound

**B**UILDINGS shaped by sound, rather than geometry alone, should add a strange new beauty to the architecture of tomorrow, J. P. Maxfield and C. C. Potwin of Electrical Research Products, Inc., asserted.

The demands for good hearing characteristics in auditoriums and concert halls have been so great that acoustical factors are influencing the appearance of new structures, they said.

The old method was to design and build a structure and then apply corrective acoustical tricks if needed for better hearing. Modern architects plan from acoustics first and find that the acoustical requirements often produce pleasing new shapes and contours.

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