

and ability to run a mile in seven minutes.

When the complete test of 14 items was given to 2,628 men entering the University of Illinois, more than one-third (35.84%) failed to pass; almost one-fourth (23.71%) were classed as near failures; about two-fifths (40.45%) passed. In this same group 679 men (26.55%) could not swim at all and an additional two-fifths of the group could swim 75 feet but not as much as 100 yards.

*Science News Letter, January 22, 1944*

## ENGINEERING

## Prefabricated Houses Are Taken Down and Shipped

► MOVING TIME in Kingsford Heights, Ind., has a strange new wartime pattern, these days. Not the furniture, but the houses—200 of them—are being taken apart, packed, shipped, and then set up again, ready for housekeeping in Port Clinton, Ohio.

This first large-scale moving of prefabricated houses is being studied by Federal Public Housing Authority specialists in order to determine future policy for construction and transfer of these portable units.

Approximately 15% of the asphalt roofing had to be replaced when the houses were reassembled in Ohio, an investigator of the housing agency reported. This was a surprisingly low replacement figure, as the housing specialists anticipated a 50% loss. Interior partitions made of a cardboard product containing crushed rock did not take the punishment of the demounting, moving



**HIDDEN SOIL HORIZONS**—These layered records of the past, brought to light again by erosion, give evidence, Dr. Lowdermilk believes, of pulsations of climate way back in Pleistocene times many thousands of years ago.

and re-erecting nearly as well as did the plywood partitions.

After the nail holes were puttied and the walls repainted, the transported houses looked as good as new, a government investigator stated.

Of the 2,960 prefabricated houses originally built in Kingsford Heights, 1,200 are to be moved to areas where they are more urgently needed. After the present shipment of 200 houses is completed, consideration will be given to the transfer of the remaining units.

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Northwest. They are easy to cultivate and yield good crops, but they are also extremely susceptible to erosion by both wind and water. In the valleys and on the lower slopes they have been under cultivation for perhaps 4,000 years; up toward the hilltops, for only a few centuries.

Pressure of cultivation on the soil of China has been especially severe in the last few generations, Dr. Lowdermilk pointed out; in the last century the population of the country has multiplied three-fold.

Chinese farmers do not need to be educated in terracing, Dr. Lowdermilk stated; for centuries they have been building terraces to hold the soil of sloping fields. They also have some very practical tricks of their own in the business of damming gullies. However, the American techniques of strip-cropping and basin-listing are new to them, and can be profitably introduced into Chinese field management. When Dr. Lowdermilk and his group set up some demonstration fields, the neighboring farmers took notice of them immediately and came around to ask help in getting the new methods started on their own land.

“The Chinese farmer is not a hide-bound traditionalist,” Dr. Lowdermilk explained. “He is a conservative because he has to be. He has little land, and knows he must get (*Turn to page 58*)

## AGRICULTURE

## China Looks Forward

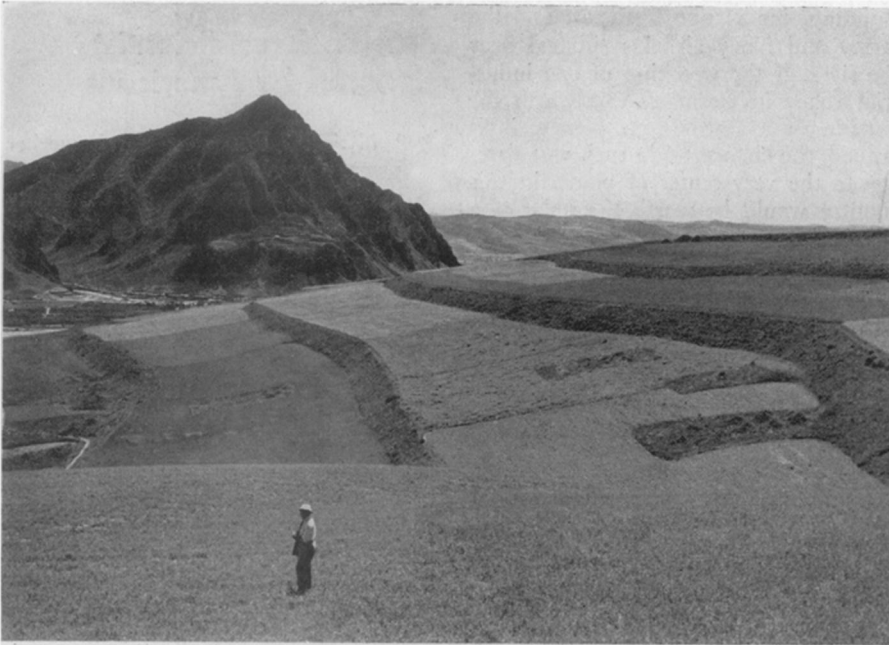
Her people are well fed, and are modernizing field management to get even better crops, according to U. S. Soil Conservation Service expert back from year in Orient.

See Front Cover

► THE PEOPLE of Free China are well fed and their morale is high, though like everybody else they don't want the war to go on a day longer than necessary, reported Dr. Walter C. Lowdermilk, of the U. S. Soil Conservation Service, who recently returned from a year's scientific work in the western lands

of the fighting Republic of the Orient. He and his American associates made a thorough study of Chinese land use and soil erosion problems, and offered suggestions toward their possible solution.

The exceedingly fine-grained, fertile soils of much of western and northwestern China are of the type known as loess, resembling soils of the same name found in our own Midwest and Pacific



**GOOD FARMING**—Benching of cultivated slopes, by leaving narrow unplowed strips across slope and plowing across slope, has been in use for centuries by Chinese farmers. It is one of the most important measures to increase intake of rain into soil, to increase food production and to reduce and control soil erosion.

### From Page 55

his living from that by methods that have been proved practical. But if you show him something new that proves to be even more practical, he is quick to

adopt the new way.”

He added that he appreciated the interest and approval of the ordinary farmers of China more than he did that of the highest officials.

*Science News Letter, January 22, 1944*

photometer, is based on the phenomenon of light absorption by gases. Most gases absorb light of some particular wavelength, in effect casting a shadow where that particular wavelength light should have fallen. In a spectrum the shadow is known as an absorption line.

The instrument, as used as a carbon disulfide analyzer, is so constructed that the air to be analyzed is pumped through several small chambers which filter out dust, oil and moisture, and then into a pair of parallel tubes 31 inches in length. The contaminated air runs into the first tube and then through a canister of activated charcoal which removes the carbon disulfide. The air then passes into the second tube. This makes possible a comparison of the purified with the contaminated air.

Rays of invisible ultraviolet light from a mercury lamp pass through the two tubes and fall upon a photocell mounted at the opposite end of each tube. Carbon disulfide, if present, absorbs light of a particular wavelength. No other atmospheric element has been found in factories where the instrument is used that absorbs this particular band of light. The operator knows immediately by the action of the photocell if carbon disulfide is present in the sample under investigation.

The instrument developed by du Pont can take quick “grab samples” or run continuous samples and give direct and instantaneous readings.

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### PHYSICS

## Electric Eye “Sees” Gas

➤ THE ELECTRIC EYE, or photoelectric cell, has another job added to its many: it is now used to “see” invisible gases and vapors in manufacturing plants, and warn of dangerous concentrations that might be injurious to workers.

An apparatus, with the electric eye as its key-piece, has been developed by scientists of E. I. du Pont de Nemours and Company and is now in successful use, particularly in detecting the presence of carbon disulfide

The apparatus, called an ultraviolet

In the production of the various *sulfa* drugs over 50 different chemicals are used.

*Sawdust* is being successfully used in Canada as a source of producer-gas for a substitute for gasoline to operate internal combustion engines; wood, charcoal, coke and coal are the more common fuels used.

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