

## ANTHROPOLOGY

# Study Ancient Farming

THE PEOPLE who lived on the Negev, Israel's arrow-shaped desert pointing to Egypt, thousands of years ago were not as scientific as scientists today think.

The mysterious cone-shaped piles of rocks found near their ancient cities had nothing to do with water flow and control, one scientist claims. In fact they were probably just what the Bedouins today call them, "grape mounds" or "vineyard heaps."

We have given the Byzantines credit for more scientific knowhow than they had, Prof. Philip Mayerson of New York University reports. Recent explanations of the rock piles as serving to change moisture in the air into usable ground water simply do not check out, he says.

Neither is it likely that the mounds of rock were used to increase the rate of soil erosion, thus causing the deposit of more soil in the terraced wadis, or dry river beds, below. There are two disadvantages to the theory that the mounds were built to provide more efficient runoff of water.

It is doubtful that the ancient farmer knew raindrops pounding on cleared soil would help make a sealing crust which would in turn increase surface runoff and

guide the rain water where it was needed, Prof. Mayerson says.

Opposed to these theories are the following "facts," he explains: the presence of a stone cover over many areas where the mounds are found; their variety in size, shape, pattern and location; their location in places where they could guide neither soil nor water to predetermined spots.

In contrast to these explanations of the mysterious piles, Prof. Mayerson proposes that they served for the cultivation of grape vines and perhaps even of trees.

Present-day knowledge of vine culture would support this, he says. The Old World grape is one of the most drought resistant fruits known. Also it is "remarkably adaptable" to growing in any kind of soil, including those that are salty, gravelly, or full of calcium carbonate.

It is difficult to account for the rocky piles except as the result of "digging pits and trenches in which vines and an occasional tree were planted," Prof. Mayerson concludes, in a recent issue of the *Bulletin of the American Schools of Oriental Research*.

Science News Letter, August 8, 1959

## TECHNOLOGY

# Detect Past Motion

A METHOD of superimposing the past on the present is enabling a West Coast scientist to detect movement that might otherwise go unnoticed.

The method is applicable to moving and still films and to television.

By simultaneously projecting scenes taken at two different times, moving parts in the scene are made to stand out vividly. Non-moving parts are largely canceled and appear an unobtrusive gray.

Developed by R. Stuart Mackay, Radiological Research Laboratory, University of California Medical Center, San Francisco, the method is described in *Science* (July 24). Dr. Mackay explains that applications include "the study of motion in general and especially that propagated as waves, but my special interest is in speech and motion studies in connection with X-ray movies."

To study a motion picture in this way, Dr. Mackay reports, the original print and a negative print are superimposed. Then one is shifted a few frames ahead or behind the other, which in effect combines the past and present.

In projecting the double film, of a watch, for example, all of the non-moving parts (the case and the dial) appear gray on the screen. This occurs because the non-moving parts coincide—the bright of the negative with the dark of the positive, and vice versa—and they tend to cancel into a dull gray.

But, due to its motion, the second-hand does not coincide on the two films. Its double-image stands out on the screen, very

light from the negative and, displaced slightly forward or back, very dark from the positive.

Motion can be viewed similarly with slide projectors using positive and negative transparencies shot at different times.

Employing the method in television, the actual, rather than apparent, present is seen along with a somewhat older image. The incoming signal is split, thus sending the same image along two different pathways. One signal travels to the picture tube. The other is recorded on video tape, stored momentarily, then played back into the picture tube circuit. The result on the viewing screen is a double image, exactly coinciding, except for the vividly outstanding moving parts.

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## MEDICINE

## Drugs, Regular Care Cut Rheumatic Fever Relapse

DRUGS HAVE reduced recurrences of rheumatic fever from 20% to less than 1%.

A rheumatic fever patient who visits his doctor regularly, takes care of himself and takes preventive drugs should never have a recurrent attack, a pediatrician reported.

The most acceptable drug is penicillin, Dr. Benjamin B. Berman of Granite City, Ill., told scientists at the Illinois State Medical Society's meeting in Chicago. When it cannot be used, sulfonamides, tetracyclines and erythromycins are also effective.

Since rheumatic fever attacks are directly related to the presence of a type of streptococcus destructive to red blood cells, the patient must take these drugs as long as the possibility of such infection exists. This may range from five years to a lifetime.

"Since most patients are children," he said, prevention of recurring attacks "becomes the problem of the parents." With educations, they should be aware of the dangers of these attacks of rheumatic fever and should insist on the preventive program.

Dr. Berman pointed out that Illinois patients who cannot pay for drugs or a doctor's care may obtain treatment through the crippled children's division of the University of Illinois.

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