

## Do You Know?

In cold countries such as Alaska, crop plants seldom put their roots down into the soil more than eight inches, although plants of the same kinds penetrate far deeper in warmer climates.

Pocket mice, kangaroo mice, kangaroo rats and dipodomys are among small animals found in the sand dunes of Nevada; they live principally on the seeds of desert grasses and other vegetation.

Malta island, in the Mediterranean, has mysterious monuments and ruins of stone-age temples that show it was inhabited many hundreds of years before Christ; it has also fossil remains of now extinct animals.

England is producing a phenol-formaldehyde coating for wood and metal products that is claimed to be resistant to heat, moisture and chemical action, and offers protection against termites and marine borers.



Photo Courtesy Koppers Co., Inc., American Hammered Piston Ring Div.

### Spectrograms "Write" Their Analyses With A Knorr-Albers Microphotometer

Spectrographic analysis is speeded by a Knorr-Albers Microphotometer, particularly when:

1. Spectrograms contain lines of unknown metals.
2. Comparatively large number of lines is present in spectrogram.
3. Record of lines is wanted.

For details see illustrated Catalog E-90(1).



### BACTERIOLOGY

## Nazi Try at Germ Warfare

Underground movements to make biological warfare weapons could do considerable damage. Attempts would have been unsuccessful because of U. S. vaccines.

► DEVELOPMENT of germ warfare weapons by an underground movement in former enemy territory, such as is reported claimed by Nazi diehards just rounded up by American and British occupation forces, is perfectly possible.

A few fanatic scientists, working secretly in an attic or cellar laboratory, could produce enough deadly germs to do considerable damage, if they could find ways of dispersing them on unprotected populations. Producing weapons of germ warfare does not require the amount of space, money, manpower and materials needed to produce atom bombs.

### Nazis at Work

Nazi scientists were working on biological warfare during the war. This was disclosed at the Nuremberg trials of Nazi physicians as war criminals.

The Nazi bacteriologists believed that the only way the Nazis could conquer the United States would have been by a three-pronged germ attack against man, domestic animals and food plants. They realized that they were considerably behind the Americans in development of germ warfare, and wanted to speak to Hitler and get his support for further work on this line.

The underground attempt to develop germ warfare weapons probably was an effort to continue the work begun during the war. Unless a great deal of progress had been made since the war, it probably would not have succeeded. Documents at the Nuremberg trials showed that the Nazi bacteriologists had only one experiment which they considered so successful they need not repeat it. In other words, they apparently thought they had one weapon ready for use if Hitler had been willing to use it.

This weapon may have been rinderpest. In that case, it was doomed to fail because American and Canadian scientists had developed a successful vaccine for protection against this devastating cattle plague.

Plague and anthrax are two diseases mentioned in reports of the underground movement just discovered. There is rea-

son to believe we had defenses against these germ weapons also.

Underground attempts to develop germ warfare weapons might well prove suicidal to the underground workers themselves. Elaborate precautions to protect workers from the deadly germs they worked with were taken in our own biological warfare station at Camp Detrick, Md. In spite of this, some cases of disease developed. It would be even harder to take adequate protective measures in an underground, perhaps poverty-stricken laboratory.

The suicidal results might have extended to the German civilian population if a weapon such as plague had been loosed against the occupation forces. While rats and lice for spreading bubonic plague may be controlled in occupied Germany, pneumonic plague spreads directly from man to man and is highly contagious as well as highly fatal. Underfed German civilians would be as ready prey to its onslaught as the occupation troops.

### BW Failure

Successful attack on growing crops could probably not be made by underground BW plotters. Growth-promoting hormones, which are the munitions of this kind of warfare, require rather elaborate chemical setup to produce. Once produced, they have to be sprayed over wide areas to have material effect. The only practicable means for this is aircraft, and in considerable numbers at that.

Even during the war, though the Nazis had excellent chemical manufacturing plants and could have produced the hormones in any necessary quantity, they could not have attacked American crops because they lacked far-ranging aircraft to distribute the sprays. We had the chemicals, we had the planes, and if the war had continued into 1946 we could and would have attacked both German and Japanese crops with this new weapon.

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It is estimated that about one person in every 10,000 is an albino.