

## Do You Know?

*Ice cream* was first made and marketed in Baltimore, Md., in 1851.

Over half of all the *children* in the United States today were born in rural communities.

*Weed-killer 2,4-D* is the same substance which is used in weak solution to produce seedless tomatoes.

For *canning*, year-old hens and older stewing birds are better than very young chickens; they have more meatiness and flavor.

Though the rapidity of *wound healing* is apparently not affected by vitamin C, a moderate deficiency of this vitamin interferes with bone repair.

Viscose *rayon fibers* become warmer and more wear-resistant when fish protein is added to the cellulose compound, German scientists claim.

A new topographic *surveying* device called the "step-writer" which measures distances directly by the leg-motion of the pedestrian, has been developed for U. S. Army Engineers.

*Radio communication* between New York and Moscow can now go by way of an automatic relay station at Tangier, North Africa, when magnetic storms interfere with the direct air route about over Iceland.

A method has been developed to determine the amount of *carbon monoxide* in the air by the reaction of red mercuric oxide with this poisonous gas; the reaction forms carbon dioxide gas and mercury vapor.

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### GENERAL SCIENCE

## Science Failed Hitler

► GERMAN scientists were Hitler's hope. They were to produce the miracle weapons that would give the German forces superiority over the Allies in spite of their wealth, resources, ingenuity and ability to produce. Near-miracle weapons nearly came, but the coming was too long delayed.

Some of the reasons for the delay are given in a report just issued by the Office of Technical Services, U. S. Department of Commerce, as a result of postwar studies made in Germany by American civilian and military scientists and technical men. It was prepared by Col. Leslie E. Simon of the Army Ordnance Department.

Lack of contact and coordination between scientific groups working for the Army, Navy, Air Force and the industries, all with separate establishments, was an important reason. Jealousy between scientists and engineers was another, according to the report.

While one part of the report gives a comprehensive picture of the organization of German scientific establishments, considerable space is given to outstanding scientific accomplishments. Some of the unique contributions of German scientists are also included.

The report gives descriptions of major

developments in aerodynamics, rockets, fuzes, armor penetration, infra-red, computing machines, parachutes for bomb stabilization, and the use of sound as a weapon.

Among the unique developments is included a long-range combination instrument, called a phototheodolite, that could take pictures giving details 15 miles away, and a relatively small tube filled with phosphorescent chemicals which could be used to detect enemy infra-red waves.

Of particular interest, however, is a nearly perfected glide bomb which could be viewed on a television screen as it was guided by radio to its target, and a nearly completed beam-climbing missile capable of following a radar beam focussed on an enemy plane or ship.

These two, together with long-range rockets and jet-propelled implements of war, were probably the principal miracle weapons that Hitler expected his scientists to produce to save him when his Army and air force failed. They nearly did so, but their achievements came too late.

Science News Letter, August 24, 1946

### ENGINEERING

## Plastic Bearing Models Aid Study of Lubrication

► MODELS OF machine bearings made of transparent plastic are taking much of the guesswork out of lubrication problems. With these models scientists can watch the distribution of the oil or grease, and see how they perform.

The use of these plastic models was revealed by John Boyd, Westinghouse research engineer who developed the novel technic. One peek at them, he said, is better than weeks of mathematical calculations.

"Now we can see what is happening," he continued, "and can design bearings which will handle a heavier load and help make possible more powerful motors without any increase in size or weight."

How well the flow of the lubricants in bearings approximated ideal conditions was a mystery until this test method was developed.



**INSIDE LOOK**—Transparent plastic model of an actual machine bearing shows the technic developed by a Westinghouse research engineer who needed to know what happened to lubricating oil inside a moving bearing. Oil, colored red, is fed into the plastic bearing and the lubrication effectiveness immediately is apparent.