His method calls for as careful study of the pilots surviving aviation accidents as is now made of the wrecked planes. The study should be made by experts and as soon as possible after the accident, "while everyone is psychologically prepared to advance any information immediately connected with the accident or relating to the pilot's history."

Pilot error was assigned as a cause by the Safety Bureau of the Civil Aeronautics Board in just over 85% of accidents sustained by pilots with no physical defects as compared with just over 86% in the case of pilots with listed defects, Dr. Herbolsheimer said in reporting a special study of a small group of accidents occurring last year.

Accident proneness, found an important cause of industrial accidents, may be a large factor in aviation accidents now attributed to pilot error, Dr. Herbolsheimer believes. The accident proneness may result from physical defects, some of which may be undetected, or from personality defect. Just how many aviation accidents are due to accident proneness is not now known. But the enormous strides made in reduction of industrial accidents by attention to accident proneness of workers strongly suggests that equally good results in reducing aviation accidents may be possible by the same method.

Science News Letter, September 19, 1942

CHEMISTRY

Package Gives Protection

Most conventional of food containers, tin cans and glass jars, afford best insurance against spoilage by poison gas. Cellophane and tinfoil are good.

➤ IF NAZIS or Nips resort to polecat warfare and spray poison gases on the commissary stores, that doesn't necessarily mean that the troops will have to go hungry. Of course, mustard gas instead of mustard on your meat would make it unfit to eat—but if it is wrapped or packaged as well as most commodities are nowadays it will still be good to eat after the covering has been decontaminated and removed.

Do's and don'ts of anti-gas protection for foods were reviewed by Dr. Sidney H. Katz of the U. S. Chemical Warfare Service's main arsenal at Edgewood, Md., speaking before the American Chemical Society in Buffalo.

The most dangerous of so-called poison gases, from the food-contamination viewpoint, are not really gases at all but finely atomized liquid sprays, Dr. Katz explained. These cling to anything they touch, and unless decontaminated will remain dangerous for days. Decontamination is not a job for just anyone; it must be carried on under the direction of an officer trained for this particular job.

Best protection against chemical contamination, the speaker stated, is afforded by the most conventional of food packagings—tin cans and glass jars. Cellophane is very good for excluding the insidious poisons, especially when the package seams are well sealed. Tinfoil and aluminum foil wrappings also are effective, but only if tightly applied.

Simple paper or cloth bags are bad, but several layers of either paper or cloth give fair protection. Corrugated cardboard is good, especially if it has been given a glazed coating. Natural rubber is not as effective against war chemicals as some of the synthetic rubbers.

Science News Letter, September 19, 1942

FORESTRY

Have You a Cork Oak Tree In Your Neighborhood?

➤ IF THERE is a cork oak in your neighborhood, tell your state forester about it, or write to the Soil Conservation Service, Washington, D. C.

Cork has become one of our severe wartime lacks. The only places where cork oaks grow in real numbers are the uplands of Spain, Portugal and North Africa. And of course we can't get much from there, just now.

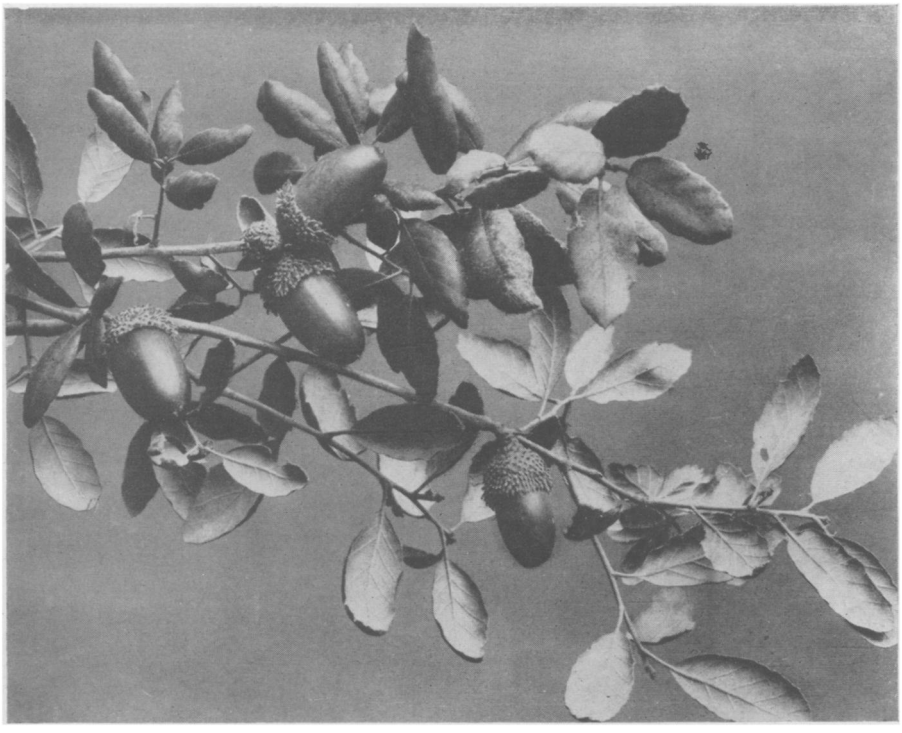
To avoid such an ill state of affairs in the future, the U. S. Department of Agriculture is trying to get stands of cork oaks, from whose bark cork is made, established in this country. But first, they have to learn where the trees will grow well. California is a known possibility, but there should be other places, too. That is why the scientists are asking any one who knows of a really authentic cork oak, or a source of cork-oak acorns, to write in about it.

Science News Letter, September 19, 1942

The high proportion of fat in *pork* keeps the lean meat from hardening during the curing process.

Scientists who are experimentally cultivating *jaboticaba* trees in central Florida hope that the grapelike fruits of the new Brazilian import will prove a profitable Southern crop.

WANTED FOR SERVICE—Keep your eyes open for this sort of tree. It is a cork oak tree, from the bark of which cork is made. If you find one growing in your neighborhood write to the Soil Conservation Service about it.



IDENTIFICATION FEATURES—This photograph from the U. S. Department of Agriculture will help you to identify the cork oak needed for war service.

PHARMACY

Remedy From Mushrooms

High blood pressure can be reduced by a compound found in the same table delicacy you eat on beefsteak. Not ready for use yet, however.

➤ HIGH BLOOD pressure can be reduced by a compound found in common mushrooms, the same kind you eat on beefsteak. However, you can't reduce blood pressure by eating mushrooms; the substance works only when injected into the blood stream. Moreover, it isn't ready for general use in human medicine, although preliminary clinical results are pronounced "quite encouraging." Further experimentation is still called for.

This new possibility of medicine from mushrooms was described before the American Chemical Society in Buffalo by two pharmaceutical chemists, Dr. H. Jensen and Dr. Leon E. Tenenbaum of the Upjohn Company.

The compound that actually does the work is an enzyme known as tyrosinase. Its existence has been known for some years, but its pressure-reducing properties are something new to medical science. It was thoroughly tried out on dogs and rats with high blood pressure before even preliminary treatment of human cases was undertaken.

Drs. Jensen and Tenenbaum were led to their research by a rather widely held theory that holds high blood pressure to be due to the release by disordered kidneys of compounds containing the phenolic grouping of atoms—most familiar to the general public in carbolic acid. The phenol group has the effect of contracting the arteries, and hence of raising blood pressure.

Since it was known that mushrooms contain enzymes which will oxidize phenolic compounds, the researchers explained, it was thought that administration of mushroom extracts would be of benefit in combating high blood pressure. They developed new methods for getting these extracts in a high state of purity, and proceeded to "try them on the dog."

Science News Letter, September 19, 1942

ORDNANCE

Evolution of Rifle Shown By Smithsonian Exhibit

➤ EVOLUTION of the rifle, still the number one weapon of fighting men, is shown in vivid detail by the great collection of pioneer firearms at the Smithsonian Institution in Washington. Although the earliest beginnings of the rifle are German and Swiss, development to its present high state of accuracy and efficiency is principally an American story.

The idea of grooving the bore to insure greater accuracy of fire goes back almost to the beginning of hand firearms, but rifling was never generally used in Europe until it was brought to a high stage of development here. German and Swiss gunsmiths who came into the Colonies in the early eighteenth century brought the primitive European methods of rifling with them. However, their weapons were short-barreled and clumsy, with bores of three-quarters of an inch or more. The leaden bullets had to be hammered down the barrels with a heavy iron ramrod and mallet, which meant a very slow rate of fire.

Pioneers going into the backwoods beyond the Alleghenies, where they had to depend largely on game for their food, needed a totally different type of weapon. The rifle, as it was evolved to meet their requirements, was of much smaller bore, usually less than half an inch. This made for lightness in both weapon and ammunition. Smaller caliber, coupled with the American rifle's great barrel length of 40 to 44 inches, brought about more efficient use of the smaller powder charge, and greatly increased accuracy. Careful design and adjustment of sights was another special feature of early American rifles.

A really revolutionary innovation was the method of loading. Instead of using tight-fitting bullets forced into the grooves, the American long rifles took bullets just slightly smaller than their bore, wrapped in bits of greased cloth or thin leather. A really good frontier rifleman could load his long weapon while actually on the run. It is not too much to say that this patch-loading of the pioneer American rifle was the forerunner of the high-speed semi-automatic fire of today's Garand.

Science News Letter, September 19, 1942

One American *aircraft* organization has increased its personnel from 80 to more than 40,000, since 1936.