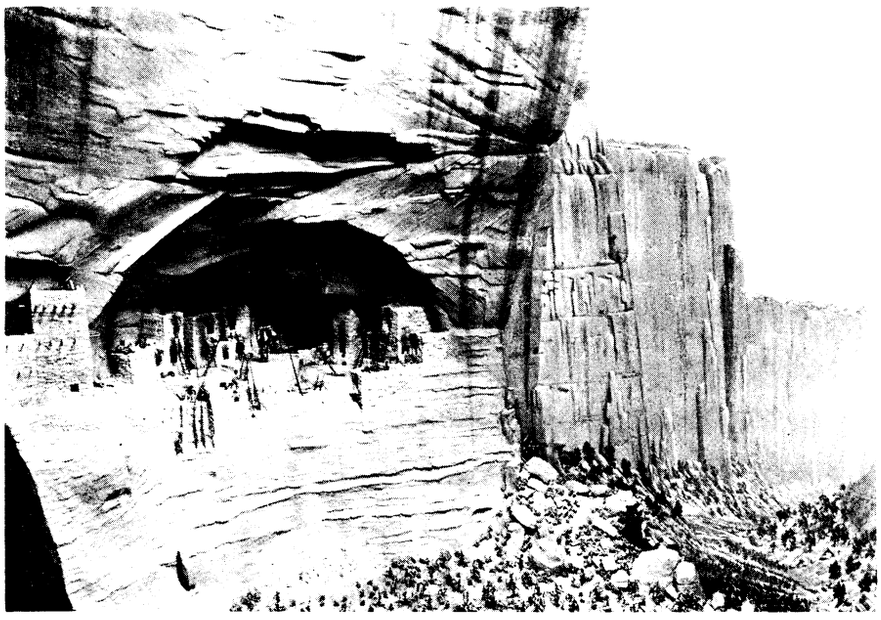

MUMMY-CAVE VILLAGE—This is a model showing in miniature a cliff-dwelling as built in a cavern of Canyon del Muerto, Arizona, which was occupied about 1250 A.D. The Indians abandoned the cave about 50 years later because of drought and a military defeat, archaeological evidence indicates. This diorama is in the new Hall of Indian America at the Chicago Natural History Museum. (See also page 83)

the rear. Flying speed is recovered by nosing down and diving.

In the two new devices now ready, the pilot is warned of approaching stall by the sounding of a horn and the flashing of a light, Mr. George stated. These signals are actuated in one model when the airplane reaches a certain angle and the airflow is reversed, causing the turbulent wake. This forces a vane which projects from the leading edge of the wing to move upward, closing a switch.

The other model is operated when pressure reversal sucks a diaphragm upward and forces an attached metal plate against electrical contacts. It has a cut-out button which can be used during take-offs and landings.

The development work on one model was carried out in Pittsburgh by Westinghouse Electric & Manufacturing Company, together with the Carnegie Institute of Technology; the other in Troy, N. Y., by the W. & L. E. Gurley Company and Rensselaer Polytechnic Institute. Scientists of other institutions assisted.

Science News Letter, February 5, 1944

MEDICINE

Typhus Vaccine Reliable

➤ THE AMERICAN-MADE vaccine on which the United States and Britain are relying to protect their troops from typhus fever is at least as good as any other such vaccine, including those available to the Nazis.

This conclusion, based on a report from Germany of a "crucial experiment" by Dr. Erwin Ding, who describes himself as a storm troop leader, is drawn by the editor of the *Lancet* (Dec. 18, 1943) British medical journal.

The storm troopers must have suffered heavily from typhus fever, the *Lancet* editorial also suggests. Evidence for this is seen from the figures and other details in Dr. Ding's report.

He vaccinated six groups of persons with one or another of six types of typhus fever vaccine and left two other groups unvaccinated as controls. Although his results are given only in percentages, without stating how many persons were in each group, such figures as 0.5% complications suggest a number of the order of 200 in at least one group and show that several hundreds were involved altogether.

The vaccine used for American and British troops is made from the yolk sacs of infected developing eggs. The method was developed by an American scientist, Dr. Herald R. Cox, while on the staff of the National Institute of Health of the U. S. Public Health Service.

The difficult-to-make and costly Weigl vaccine from the intestines of infected lice; vaccines from lung suspensions from infected rabbits and dogs; and weaker preparations of egg yolk vaccine than the Cox vaccine, made in Marburg, Germany, as well as a Cox vaccine made in Germany, were those tested by the storm troop leader.

The weaker egg vaccines and a dog lung vaccine made in Rumania were less effective than the others. No deaths occurred in any vaccinated group except those receiving the Marburg vaccine. Deaths in the unvaccinated control groups ran to 20% and 33%.

The number of cases of typhus developing in the groups was unaffected by vaccination, but the severity of the disease was much less in the vaccinated.

Science News Letter, February 5, 1944

NUTRITION

Vegetables Prevented From Loss of Color

➤ DEHYDRATED vegetables and fruits are protected against loss of quality through the unwanted action of the life-agents, or enzymes, of their own cells during processing by a new method on which U.S. patent No. 2,340,170 has just been issued to John M. Baer of Chicago.

Certain plant enzymes promote oxidation. This is necessary while the plant is alive and growing, but if the enzymes continue their action after the vegetables or fruits have been peeled and sliced for dehydration they produce a dark coloration in such things as potatoes, peaches and apples, which reduces their market value. Heat destroys enzymes, so if the foods are pre-cooked before dehydration this trouble does not arise; but it is not always desirable to market the products in a cooked condition.

In Mr. Baer's process, the prepared vegetables or fruits are placed in a closed chamber and the air is rapidly pumped out, to a high degree of vacuum. Then they are quickly heated, though not to the cooking point, and the temperature maintained for only a couple of minutes. After that the temperature is reduced,

and dehydration carried to completion in the vacuum.

A second patent No. 2,339,757, has also been obtained by Mr. Baer on application of dry radiant heat to sliced potatoes in the vacuum dehydrating chamber. This brings them out as clear, translucent flakes, without the chalky appearance that often mars dehydrated potato slices.

Both of the patents are assigned to the Guardite Corporation.

Science News Letter, February 5, 1944

AERONAUTICS

Sound Travels Slower As Temperature Drops

➤ THE TEXTBOOKS are right when they state that the speed of sound in air decreases as the temperature decreases.

Readers are asked to correct the "Fundamentals of Rockets" story, SCIENCE NEWS LETTER, Jan. 15, 1944, page 34, column 3, paragraphs 7 and 8, so that they read:

"The velocity of sound is not much affected by the thinness of the air at high altitudes. It, however, is affected by the temperature and is *lower* at the low temperatures there prevailing.

"A drop in temperature of 100 degrees Fahrenheit would *decrease* the speed of sound by about 75 miles per hour."

Our thanks to the numerous readers who picked up and reported this troublesome error.

Science News Letter, February 5, 1944

ENGINEERING

Two-Boat Transportation For Bulldozers Patented

➤ TRANSPORTATION of a military type is offered by a new arrangement of boats on which Andrew J. Higgins, well-known New Orleans builder, has taken out patent No. 2,339,014. He uses two stoutly built pontoon units, connected by a platform underslung on a U-shaped framework between them, for the carriage of bulldozers, tanks, heavy artillery pieces and similar cargoes for battle.

The forward part of the platform can be raised slightly, serving as a kind of auxiliary bow to slap down waves that get in the way. When the bows touch bottom at the beach, this hinged portion is lowered to provide a landing ramp.

Science News Letter, February 5, 1944

PSYCHOLOGY

Test Your Science Talent

Questions in the examination used in the Third Annual Science Talent Search are designed to show how well you can reason and understand.

➤ IF YOU have wondered whether you have ability in science, here is a test that will give you some hint as to whether you can aspire to scientific achievement.

The questions reproduced on the following pages are part of the science aptitude test of the Third Annual Science Talent Search that has just been judged.

Try them on yourself or some friend. Here is how to do it. It is a test of how well you can read and understand the materials of science. There are two kinds of questions. In the case of questions 1 to 15, answer each by putting an X in the answer box corresponding to the number of the answer which is most nearly correct. In the case of questions numbered 56 to 60 and 91 to 97, first read each paragraph and then answer each of the questions in the same way. You should be able to do the test in less than an hour. Do all the questions in one sitting and do not look at the answers, printed elsewhere in this issue, until you have finished.

To discover scientific ability among the boys and girls just finishing high school, the Third Annual Science Talent Search for the Westinghouse Science Scholarships is being conducted this year. The first step of this nation-wide search for those likely to become the scientists of tomorrow has been completed. Nearly 15,000 copies of the science aptitude examination and other inquiry blanks were distributed to teachers in thousands of high schools throughout the nation.

The test, reproduced in part on the following pages, is only one of the techniques used in the selection of boys and girls who are scientifically gifted. In addition, each contestant filled out a personal data blank and wrote an essay describing some scientific project he has done or wishes to do. Teachers filled out a recommendation form and principals reported scholarship.

Forty contestants will receive free trips to the Science Talent Institute to be held in Washington, D. C., early in March. Of these, two will be selected to receive $2,400 Westinghouse Grand Science Scholarships to the college of their choice, eight will get $400 Westinghouse Science Scholarships, and additional Westinghouse scholarships which total $3,000 will be awarded at the discretion of the board of judges. Honorable mentions also will be awarded to call the attention of colleges and universities to those contestants of outstanding ability.

This will uncover scientific ability among those ready to enter college. Thus, exceptional youths, in the shortest possible time, will take up leadership in scientific research so important to the war effort and be ready to take a hand in the scientific world of the peace to come.

Science Service, sponsoring Science Clubs of America, is conducting the Science Talent Search as a part of the science club movement.

The aptitude examination does not test primarily what a person already knows about science. It is designed to tell how well you can reason and understand. Thus, even those who have no special training in science will want to try it.

The test was devised for the Science Talent Search by Dr. Harold A. Edgerton, director of the Occupational Opportunities Service of Ohio State University and Dr. Steuart Henderson Britt, of Washington, D. C. The most advanced testing methods developed over the past two decades, were utilized in constructing the test.

All the 80 boys and girls selected in the first two years of the Science Talent Search are now either in college or in the armed services. All but three of those in the Army or Navy have been sent to college for specialized scientific training.

Only time will tell whether those selected by this method will contribute to scientific research as expected. It is planned to follow for at least 10 years the careers of the winners and also of all those who completed entries.

Of the thousands of boys and girls who have taken the examination in the three searches conducted so far, not one