

Georgia, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Massachusetts, Minnesota, Montana, New Hampshire, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Vermont, Virginia, West Virginia and Wisconsin.

The Annual Science Talent Search is conducted by Science Clubs of America, administered by Science Service. Scholarships are provided and the Science Talent Search made financially possible by the Westinghouse Educational Foundation, an organization endowed by the Westinghouse Electric Corporation, for the purpose of promoting education and science.

Science Clubs of America, administered by Science Service, is the international or-

ganization for science groups, in schools and out. Today more than 15,000 clubs are affiliated here and abroad, with a membership of more than one-third of a million young people.

The judges of the Science Talent Search are: Dr. Harlow Shapley, director of the Harvard College Observatory and president of Science Service; Dr. Harold A. Edgerton, vice president, Richardson, Bellows, Henry & Co., and Dr. Stuart Henderson Britt, director of personnel, McCann-Erickson, Inc., both psychologists of New York City; and Dr. Rex E. Buxton, psychiatrist of Washington, D. C. Drs. Edgerton and Britt design the Science Aptitude Examination each year for the Science Talent Search.

an iron-clad embargo against exportation has been lifted.

The bringing of Merino sheep to the United States is the culmination of many years' endeavor by Dr. J. F. Wilson, professor of animal husbandry at the University of California, R. D. Foote, farm adviser of Mendocino county, Agricultural Extension Service, and Mr. and Mrs. J. W. Mailliard, Jr., of San Francisco, whose gift to the University financed the purchase of the Merinos.

Dr. Wilson and Mrs. Mailliard flew to Australia last fall to select the sheep. They were chosen from three of the more than 400 Merino stud flocks in the Australian Commonwealth.

Science News Letter, February 10, 1951

#### ENGINEERING

## Water-Flow Table

► INEXPENSIVE apparatus called a water-flow table is being used at Rensselaer Polytechnic Institute in Troy, N. Y., to study how air behaves when it is penetrated by jet planes, rockets or missiles traveling faster than sound.

Preliminary tests of models of proposed supersonic planes and rockets to determine flight efficiency can be made with the water-flow table, saving the need for costly wind tunnel tests for only those found satisfactory.

In the water-flow table, a smooth sheet of water moves at uniform depth over a sloping plate glass surface. A model, whose efficiency of shape is under study, is placed on the flow surface. The obstruction causes wave patterns and turbulent areas to form and these are found to resemble closely the disturbances created in air by the passage of high-speed objects.

Micrometers show the depth of the water flow, gauges record its velocity. Any desired air speed, up to incredibly high levels, can be simulated by governing the rate of the water flow with the control valve or by changing the slope of the table. The resulting waves and turbulence around a model under test are measured, photographed and studied to afford the scientists a fairly accurate idea as to what would happen to a

real airplane or missile flying at the simulated speed.

"It is, of course, impossible for the water flow table to reproduce the exact reactions of air flight," comments Prof. Harold A. Wilson, who has developed a highly efficient table for Rensselaer Polytechnic Institute. "The water flows at a uniform depth but its velocity decreases from the surface downwards. This makes it impossible to get the complete rounded effect obtained in wind tunnels or by other complicated devices."

Prof. Wilson points out, however, that the flow table affords findings which are sufficiently accurate for preliminary testing of flight efficiency. It permits the scientists to screen out unsatisfactory models and use the wind tunnels and other costly apparatus only for final tests. Apart from the field of supersonic flight the water flow table has proved useful in testing the efficiency of steam turbine valve throats and nozzles, as well as in many other ways.

The first flow tables were made by Hitler's warplane designers. The first ones built in this country were based on reports made by United States occupation troops at the end of the war and only a few have been developed here.

Science News Letter, February 10, 1951

#### AGRICULTURE

## First California Merino

► TO HELP solve America's wool shortage, the first Merino sheep exported from Australia to any country other than New Zealand in 25 years have arrived at the University of California's College of Agriculture.

Three rams and nine ewes from the best strains of Australian Merinos—finest wool bearing animals in the world—will be added to the University's breeding proj-

ect on the Davis campus and on a Mendocino county field station.

Object of the breeding program is to put superior wool of Australian sheep on the backs of the superior bodies of American sheep.

The Merinos were sent to the University of California's College of Agriculture under an exclusive grant by the Commonwealth of Australia, the first time in 25 years that

#### METEOROLOGY

## More Cold Weather In Store for Nation

► IT will be colder than usual during the rest of February over almost all the country, the Weather Bureau has predicted. Only in the extreme Southwest, Florida and New England will temperatures average around or above normal. Temperatures farthest below normal are expected in the western Gulf states.

However, few days during the month will be close to the average expected for the month, especially in the northern portions of the nation. The Extended Forecast Section of the Bureau expects to see a large week-to-week fluctuation of temperatures.

For the first time in months, "substantial amounts" of rain are predicted for the parched Southwest. Over the last 17 to 18 weeks parts of southern California, Arizona, New Mexico and western Texas have reported only traces of rain or none at all. If this prediction is carried out, the fears of another dustbowl will be somewhat allayed.

The country east of the Mississippi can expect more snow and rain than it usually receives during February. Exceptions will be Florida and the western lakes region which can expect "light amounts" of precipitation.

The rest of the country can expect normal amounts of rain and snow during the remainder of February.

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The destructive *gypsy moth* was brought to America from France in 1869 for the purpose of crossing it with the silkworm.

It is not possible to tell by microscopic examination, or by any other known tests, what race of man a given sample of *blood* came from.

A barge loaded with steel beams, which during a recent storm was lost and sunk in Chesapeake Bay, was located with an airborne *magnetometer*, a device used to locate enemy submarines during the war.

## GENERAL SCIENCE

# Scientists of Tomorrow

Ten girls and 30 boys have been invited for an all-expense trip to Washington to compete in the finals for Talent Search Scholarships totalling \$11,000.

► THE FORTY most promising young scientists in America's high schools have just been selected in the Tenth Annual Science Talent Search. The winners—ten girls and 30 boys—have been invited to Washington for a five-day all-expenses-paid visit March 1 through March 5.

They will participate in the Science Talent Institute and compete for \$11,000 in Westinghouse Science Scholarships in the finals of the Science Talent Search conducted by Science Clubs of America, administered by Science Service.

The 40 trip-winners, 15 to 17 years of age, were chosen by a panel of judges after a nation-wide competition in which top-ranking seniors in all the public, parochial and private schools in the continental United States were invited to participate. Entrants, representing every state in the Union, totaled 13,638, of whom 1,771 completed the stiff science aptitude examination, submitted recommendations and scholarship records and wrote a report on "My Scientific Project."

At the end of the winners' five-day stay in Washington, March 1 through March 5, the judges will award the scholarships. One boy or girl will receive the \$2,800 Westinghouse Grand Science Scholarship (\$700 per year for four years). The runner-up will receive a \$2,000 Westinghouse Science Scholarship. Westinghouse Science Scholarships, ranging in size from \$100 to \$400 and bringing the total to \$11,000, will be awarded at the discretion of the judges to the rest of the winners.

## May Be Used Anywhere

The scholarships may be used at any college, university or technical school of the winners' choice so that they may continue their training in science or engineering.

Chosen without regard to geographic distribution, the 40 trip-winners come from 37 cities in 15 states. All of the states represented except Maryland have had a winner in previous Searches. The total of states that have been represented by winners since 1942 is 39.

Two high schools in the United States have produced more than one winner this year. Leading is Stuyvesant High School in New York City with three boys invited; Forest Hills (N. Y.) High School will send two girls.

Twenty-three of the winners this year come from schools that have never before

placed winners in the annual Science Talent Search. The other 17 among this year's winners are adding new laurels to schools already honored by having produced winners in the past.

According to the records of the ten years of the Science Talent Search the standing of this year's "repeater" schools is: 16 have come from Stuyvesant High School, 13 from Forest Hills High School, six from Brooklyn, N. Y., Technical High School, five from Eugene, Ore., High School, four from Phillips Exeter, N. H., Academy.

Through the 10 years three winners have been produced by: New Brunswick, N. J., High School; Roslyn Heights, N. Y., High School, and Kenmore, N. Y., Senior High School.

Through the 10 years two winners have been produced by: Barringer High School, Newark, N. J.; Arlington Heights, Ill., High School; Orono, Maine, High School; Phillips Academy, Andover, Mass.; Niagara Falls, N. Y., High School, and Burnham High School in Sylvania, Ohio.

Most of the winners live at home and attend their local or nearby public, paro-

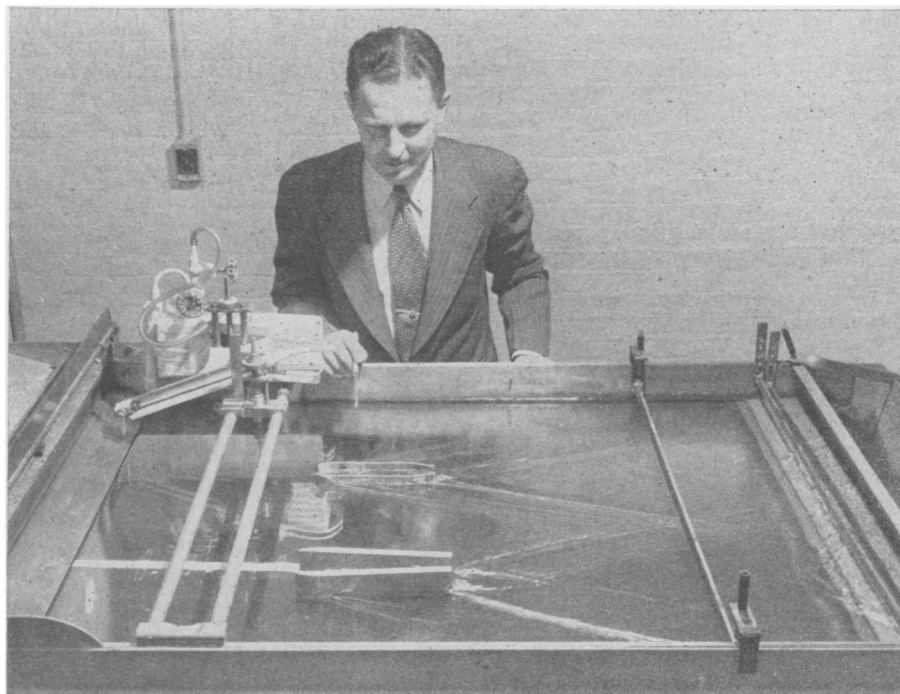
chial or private secondary schools. Two attend private schools in other states.

Over half (63%) of the Science Talent Search trip winners rank first, second or third in their graduating classes, which range in size from 12 to 680 students. Approximately 55% of the winners' fathers and 45% of their mothers attended college. A number have parents who were born or educated abroad. Relatively few claim scientists among their relatives.

Contrary to a frequent conception of scientists, the winners are not interested in science only. While most of them spend much of their spare time in science pursuits such as science clubs and individual hobbies of a scientific nature, all of them have participated in varied extracurricular interests such as music, athletics, journalism and dramatics, and all belong to social and educational organizations outside their school work.

Many of the top 40 have already chosen the lines of study they wish to pursue. Physics attracts 10, seven intend to study chemistry, and seven lean toward careers in biology. Others plan careers in mathematics, astronomy, aerodynamics, engineering, geology, medicine, biochemistry and veterinary science. All hope to do research in their respective fields.

Most of the 360 winners in the first nine Science Talent Searches held since 1942 are undergraduate or graduate students in colleges or universities where they are preparing themselves for scientific careers. A total of 200 now have undergraduate degrees, 43 have master's degrees and ten are Ph.D.'s. Twelve are M.D.'s. More than



**WAVE PATTERNS**—By studying the water flow around these models, engineers can learn about the waves created in the air by rockets and other missiles. (See page 87)