

## EDUCATION

# Talent Search Winners

Twelve girls, 28 boys are awarded trips to Washington to attend Science Talent Institute. One boy and one girl to receive \$2,400 grand scholarships.

► TWELVE GIRLS and 28 boys have been invited to Washington, March 3 through March 7, to compete for the Westinghouse Science Scholarships in the Third Annual Science Talent Search conducted by Science Clubs of America, administered by Science Service. They will spend five days together at the Science Talent Institute in Washington.

The names of the trip winners were announced by the judges as the result of a strenuous competition in which superior seniors of all secondary schools in the United States were invited to participate. The 40 winners were selected from about 15,000 entrants. About 3,000 of these students completed a science aptitude examination, submitted recommendations and scholarship records and wrote an essay on "My Scientific Project."

The trip winners come from 33 localities in 15 states and the District of Columbia. Entries were received from every state in the union.

Those who come to Washington for the Science Talent Institute in March on the all-expense trips, will compete for scholarships which will allow them to go to any college, university or technical school of their own selection to continue science or engineering training. One boy and one girl will be awarded \$2,400 Westinghouse Grand Science Scholarships (\$600 a year for four years), while 6 boys and 2 girls will be awarded \$400 Westinghouse Science Scholarships (\$100 a year for four years), and \$3,000 more in Westinghouse Science Scholarships will be awarded at the discretion of the judges.

Selected without regard to geographic consideration, the results show that this year winners come from some states that have not had winners before. Alabama, Arizona, Georgia, and the District of Columbia have winners this year for the first time.

Only two schools in the United States have produced more than one winner this year. They are: Brighton High School, Rochester, N. Y., and the Bronx High School of Science, Bronx, N. Y. Each of these schools will send

two winners to the Science Talent Institute.

Eight schools have had winners in other years and have been able to place winners again this year. They are: Phillips Exeter Academy, Exeter, N. H.; Brooklyn Technical High School, Brooklyn, N. Y.; Bronx High School of Science, Bronx, N. Y.; Walton High School, Bronx, N. Y.; Garden City High School, Garden City, N. Y.; Rome Free Academy, Rome, N. Y.; Taylor Allderidge High School, Pittsburgh, Pa., and West High School, Madison, Wis.

Washington, D. C., Brooklyn, N. Y., New York, N. Y., Rochester, N. Y., Philadelphia, Pa., and Madison, Wis. will send two or more winners each but except in two cases they are not from the same high school within the city.

Most of the winners live at home and

attend their local public or parochial high school. Five, however, are enrolled in private schools and three go to school some distance from their homes. Their homes are in Cleveland Heights, Ohio, New York, N. Y. and Columbus, Ohio.

More than half, 68% or 27 of the 40, of the Science Talent Search trip winners ranked first or second in their graduating classes.

Twenty-eight of the winners are members of science clubs and at least seven of them are presidents of their clubs.

Many of the trip winners already have chosen their field. Their choices range from naval architecture to biochemistry. Eleven hope to do research in the fields of biology, chemistry, medicine or physics. Three hope to be electronic engineers. Two hope to be theoretical chemists and one a mathematical physicist. Radio and chemical engineering and medicine are choices of careers for four others.

The proportion of boys and girls who submitted completed entries in the Science Talent Search determined the distribution of boys and girls among the trips awarded. Girls accounted for 31% of the entries this (Turn to page 76)



**MOVIE CAMERA**—This instrument, called a phototheodolite, was designed to facilitate the testing of airplanes during take-offs, landings, dives and other maneuvers involving a knowledge of flight path, altitude and velocity. The camera photographs the airplane, a time counter, and elevation and azimuth angle scales simultaneously. The operator's assistant, at the right, maintains contact with the airplane by radio. This is an official photograph of the National Advisory Committee for Aeronautics.

## Do You Know?

*Mammals* are the only animals that have hair.

About 350,000 city high school boys and girls helped on *farms* last summer.

Some *coal mining* in central Chile is complicated by the location of coal beds under the sea.

*Fossil camels* found in North America show that some of the family were 15 feet in height and others were the size of jackrabbits.

The percentage of Army motor *vehicles* in the United States which are in repair shops for periods longer than four days is less than 4% of the total.

*Coke* is now being produced in Utah from the Geneva coal mine in the southeastern part of the state, for a steel plant near Provo which will supply ship plates for West Coast shipbuilding.

More than 500,000 barrels of *oil* a day are being delivered to the eastern states now than a year ago; the "Big Inch" pipeline is responsible for three-fifths of the increase, tankers for the rest.

*Camel* hide is used to make leather for shoes and harness, camel hair is woven into cloth, camel milk is a highly prized food, and camel flesh from a young animal is a delicate meat, tasting somewhat like veal.

A *drilling rig*, which got mired in the mud en route to Kansas after an unsuccessful exploratory trip for lead and zinc in Oklahoma, was set up and put to work on the spot; the result was the discovery of a rich ore field.

Range *fire* destruction on federal grazing lands in 10 western states in 1943 covered less than half the acreage burned over in 1942, due largely to better organized and equipped fire crews; the 1943 burned-over area was 837,000 acres.

The Bureau of Reclamation has started on a preliminary outline for a post-war *public works* program calling for the expenditure, for irrigation and power developments in 17 western states, of perhaps \$3,000,000,000 over a period of five or ten years.

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year, in comparison to 26% last year, and 22% in the case of the First Search. The scholarships, with the exception of the two grand scholarships, will be distributed among boys and girls in the same ratio.

"A major need for America today is the discovery and development of scientific ability among boys and girls now in high school," the Science Service announcement states. "Real ability for creative research and engineering is rare. Many who do not now have the opportunity to develop their scientific talents will be discovered and made available for America's future progress through this Science Talent Search.

"This is more than a scholarship contest. It is a major step toward making available potential scientific talent to important tasks in war and peace. Within the next five years, either in war or peace, boys and girls now in high school must begin to take leadership

in scientific research and engineering."

The Annual Science Talent Search is conducted by Science Service, 1719 N St., N. W., Washington 6, D. C., as one of the activities of Science Clubs of America. Awards are provided and the Science Talent Search made financially possible by the Westinghouse Electric & Manufacturing Company, a leader in scientific research, engineering and manufacture in the electrical industry, as a contribution to the advancement of science in America.

Science Service is the non-profit institution for the popularization of science, with trustees nominated by the National Academy of Sciences, National Research Council, the American Association for the Advancement of Science, the E. W. Scripps Estate and the journalistic profession.

Science Clubs of America, administered by Science Service, today has more than 4,000 affiliated clubs, with a membership of more than 100,000.

*Science News Letter, January 29, 1944*

## MATHEMATICS

# World Unified by 1950?

► IT IS not at all improbable that the whole world will be united under one government by 1950, a study of the trend throughout the ages toward larger and larger empires reveals.

Conquest by land alone could never have attained world-wide unification. But conquest by both land and sea might have brought the world under one power about 800 years from now, Dr. Hornell Hart, Professor of Sociology at Duke University, states. The use of air power, however, seems destined to bring about a world federation in the near future, mathematical studies show.

"Statistical evidence indicates clearly that the trend for thousands of years has been toward larger and larger governmental areas," states Dr. Hart, whose studies reveal that the areas of empires have been growing at ever-increasing rates of speed.

Since the dawn of history one empire after another has broken all previous records for territory administered by one ruling authority, Dr. Hart states. Studying the largest regions under one rule for different periods of history, he finds that even in prehistoric times the areas controlled by individual governments were increasing in size at accelerating rates.

The maximum area controlled by a single political organization around 50,000 B.C. the Duke professor estimates to be about 7,000 square miles, while in 5,500 B.C. the greatest region under one rule was probably 22,500 square miles.

From 5,500 to 750 B.C. the size of the most extensive political organizations increased about 154 square miles per year. In 750 A.D. the Saracen Empire included about 4,300,000 square miles.

When both land armies and fleets were used in extending power, the regions under one rule became increasingly greater. If these sea-borne empires had continued to grow at the rate of 46,750 square miles per year, Dr. Hart estimates, the total land area of the world would have come under one government by about 2750 A.D.

The territory seized by Japan was the first empire established through major use of air power. The area of this empire in October, 1942, totalled approximately 2,640,000 square miles.

Mathematical analysis reveals that the increase in production of aircraft, speed of world travel and maximum range of projectiles has already exceeded the rate of acceleration required to attain a world-wide government as early as 1950.

*Science News Letter, January 29, 1944*