GENERAL SCIENCE

Talent Search Winners

Forty most promising young scientists from the nation's high schools selected to compete in finals of the eleventh annual Search for talented youngsters.

➤ THE 40 most promising young scientists in America's high schools have just been selected in the Eleventh Annual Science Talent Search. The winners—nine girls and 31 boys—have been invited to Washington for a five-day all-expenses-paid visit Feb. 28 through March 3.

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 18 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 14,886, of whom 2,114 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, Feb. 28 through March 3, 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.

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.

Many Areas Represented

Chosen without regard to geographic distribution, the 40 trip-winners come from 30 cities in 12 states and the District of Columbia. All of the states represented except Montana and Virginia have had a winner in previous Searches. The total of states that have been represented by winners since 1942 is 40.

Four high schools in the United States have produced more than one winner this year. Forest Hills (N. Y.) High School will send one boy and one girl. Two boys have been invited from each of these high schools: Central High School, Omaha, Neb., New Rochelle (N. Y.) High School and Mont Pleasant High School, Schenectady, N. Y.

Seventeen of the winners this year come from schools that have never before placed winners in the annual Science Talent Search. The other 23 among this year's winners are adding new laurels to schools already honored by winners in the past.

According to the records of the 11 years of the Science Talent Search, the standing of this year's "repeater" schools is: 17 have come from Stuyvesant High School, New York City; 16 from Bronx (N. Y.) High School of Science; 15 from Forest Hills (N. Y.) High School; seven from Abraham Lincoln High School in Brooklyn and five each from Midwood High School in Brooklyn and New Rochelle (N. Y.) High School.

Through the 11 years four winners have come from each of these schools: Evanston (Ill.) Township High School; New Brunswick (N. J.) High School; and Mont Pleasant High School, Schenectady, N. Y.

Through the 11 years these schools have produced three winners each: North Phoenix High School, Phoenix, Ariz.; Phillips Academy, Andover, Mass.; and Taft High School, New York City.

Two winners each have been produced in the 11 years by these schools: Tucson (Ariz.) Senior High School; Susan Miller Dorsey High School, Los Angeles, Calif.; Greenwich (Conn.) High School; Edwardsville (Ill.) High School; University High School, Urbana, Ill.; Central High School, Omaha, Neb.; Princeton (N. J.) High School; Far Rockaway (N. Y.) High School; and Poughkeepsie (N. Y.) High School.

Each school, producing a winner, receives a bronze and walnut plaque to add to its trophy collection.

Diversified Backgrounds

Most of the winners live at home and attend their local or nearby public, parochial or private secondary schools. One attends a private school in another state.

Over half (63%) of the Science Talent Search trip winners rank first, second or third in their graduating classes, which range in size from 48 to 800 students. Approximately 85% of the winners' fathers and 58% of their mothers attended college. A number have parents who were born or educated abroad. One-half of the winners claim no scientists among their relatives; the other 20 have one or more scientists among their ancestors.

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

CONTINUOUS SHEET MICA—Mica by the roll for electric insulation is now being made by General Electric Company. Domestic mica can be utilized in the special process that binds the tiny mica particles together.

educational organizations outside their school work.

Many of the top 40 have already chosen the lines of study they wish to pursue. Physics attracts 14, seven intend to study medicine, and seven lean toward careers in engineering. Others plan careers in mathematics, chemistry, biology, archaeology, psychology and biochemistry. All hope to do research in their respective fields.

Well over half of the 400 winners in the first ten Science Talent Searches, held since 1942, now have undergraduate degrees. Doctors degrees (M.D., Ph.D., D.Sc.) have been granted to 50 of the 400. More than 80 are now employed full-time in science jobs in industry, government or professions, or are on university teaching or research staffs. Sixteen are serving in the armed forces. None of the 400 previous winners is more than 29 years old.

Honorable Mentions

In addition to the 40 trip-winners, who will attend the Science Talent Institute in Washington, an Honorable Mentions list of 260 in the Eleventh Annual Science Talent Search was announced Feb. 7. These high ranking contestants will be recommended to colleges and universities for their aptitude in science. If they are as fortunate as those previously included in the Honorable Mentions list, they will receive offers of scholarships from many institutions of higher education seeking students with talent in science.

Through an arrangement with Science Clubs of America, 25 states are conducting state Science Talent Searches concurrently with the national competition. Eight of them have produced winners this year. In these 25 states all entries in the national Science Talent Search will be turned over to state judging committees. From their entries they will choose state winners and award scholarships to various colleges and universities within the state. Cooperating states are: Arkansas, Connecticut, District of Columbia, Georgia, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Massachusetts, Michigan, 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 is the international organization 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.

GENERAL SCIENCE

STS Winners Selected

* indicates girls
H.S. indicates High School
HOME ADDRESS follows name of school
AGE of winner follows name

ARIZONA

Phoenix — *Eddings, Charlotte Ann 16 North Phoenix H.S. 44 W. Georgia Ave.
Tucson — Bideaux, Richard August 16 Tucson Senior H.S. 2521 E. 8th St.

CALIFORNIA

Los Angeles — Messinger, Paul Hilton 18 Susan Miller Dorsey H.S. 5423 Harcourt Ave. 43
Epstein, Eugene Ethan 17 Hollywood H.S. 1914 N. Curson Ave. 46
Riverside — Richards, Paul Linford 17 Riverside Polytechnic H.S. 4455 Fifth St.

CONNECTICUT

Greenwich — Finch, Hardy Rundell, III 17 Greenwich H.S. 11 Lockwood Lane, Riverside

DISTRICT OF COLUMBIA

Washington — Hooker, William Weston 17 Anacostia H.S. 3385 Highview Terrace, S.E. 20

GEORGIA

Atlanta — Griswold, Ralph Edward 17 Northside H.S. 4791 Powers Ferry Road, N.W.

ILLINOIS

Edwardsville — Dietrich, Charles William 17 Edwardsville H.S. 1011 Minnesota Ave.
Evanston — Muench, Karl Hugo 17 Evanston Township H.S. 519 Greenwood St.
Skokie — Klevay, Leslie Michael, Jr. 17 Niles Township H.S. 8109 Laramie Ave.
Urbana — Potthoff, Robert Edward 15 University H.S. 608 Delaware St.

INDIANA

Bloomington — Noyes, Russell, Jr. 17 University H.S. 831 S. High St.
Connersville — *Dawson, Mary Ann 17 Connersville Senior H.S. 2147 Virginia Ave.

MASSACHUSETTS

Andover — Luhrmann, George William, Jr. 17 Phillips Academy Blue Anchor Road, Cedar Brook, N.J.
Springfield — Hobbie, Russell Klyver 17 Technical H.S. 82 Mapledell St. 9

MONTANA

Livingston — *Allen, Patricia Joan 17 Park County H.S. Box 517

NEBRASKA

Omaha — Blanchard, Byron Elbert 16 Central H.S. 5514 Marcy St. 6
Papadakis, Emmanuel Philippos 17 Central H.S. 2774 Burt St. 2

NEW JERSEY

New Brunswick — Hartmann, Harry Rodney 17 New Brunswick H.S. 15 Lawrence St., Milltown
Princeton — Braden, Robert Taylor 18 Princeton H.S. Littlebrook Road

NEW YORK

Brooklyn — Lieberman, Philip 17 Abraham Lincoln H.S. 2816 Cortland St. 24
*Shimansky, Judith Martha 16 James Madison H.S. 1656 E. 12th St. 29
Berne, Joel Edward 17 Midwood H.S. 860 E. 15th St. 30
Far Rockaway — Colman, Robert Wolf 16 Far Rockaway H.S. 309 Beach 143 St., Neponsit, L.I.
Forest Hills — *Laufer, Wilma Phyllis 17 Forest Hills H.S. 92-10 68th Ave.
Weiss, Bernard 15 Forest Hills H.S. 65-44 110th St. 75
Mount Vernon — *Beck, Alice Eve 17 A. B. Davis H.S. 346 Egmont Ave.
New Rochelle — Forman, Paul Frederick 17 New Rochelle H.S. 106 Petersville Rd.
Mitchell, Dana D. 18 New Rochelle H.S. 99 Hill St.
New York — Dolen, Richard 16 Bronx H.S. of Science 1710 Montgomery Ave. 53
Raudsep, Ilmar 18 Stuyvesant H.S. 1125 Wyatt St. 60
*Schmir, Louise 16 Taft H.S. 1755 Weeks Ave. 57
Oceanside — Seaman, John Robert 15 Oceanside H.S. 99 Park Ave., Baldwin
Poughkeepsie — *Boat, Mary Barbara 18 Poughkeepsie H.S. 5 Mitchell Ave.
Rochester — McLeod, Donald Wingrove 16 John Marshall H.S. 1549 Ridge Road West 13
Goldstein, David Arthur 17 Monroe H.S. 51 Argyle St. 7
Schenectady — Armstrong, John Allan 17 Mont Pleasant H.S. 1121 Willett St. 3
Smith, David Young 17 Mont Pleasant H.S. 970 State St. 7

VIRGINIA

Norfolk — *Harrell, Ruth Flinn 18 Maury H.S. 6411 Powhatan Ave.

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

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., New York City; Dr. Steuart Henderson Britt, vice-president and director of research, Needham, Louis and Brorby, Inc., Chicago; and Dr. Rex E. Buxton, psychiatrist, of Washington, D. C. Drs. Edgerton and Britt design the aptitude examination each year.

Complete details of the national and the 25 State Science Talent Searches are available from Science Clubs of America, 1719 N St., N. W., Washington 6, D. C.

Science News Letter, February 9, 1952

METEOROLOGY

Weather Pattern to Be Reversed during February

➤ THE WEATHER pattern over the nation for February will be almost exactly the reverse of what it was in January. This is the prediction of the U. S. Weather Bureau's Extended Forecast Section.

The weathermen expect that, whereas the East averaged warmer than normal during January, it will be colder than normal in February. Lowest temperatures, as related to what usually happens, can be expected in the Ohio Valley and the Southeast.

Similarly, west of the Continental Divide there will be warmer weather than usual during February. In a belt running from the Dakotas to Texas, the temperatures will average about normal.

Rain and snow amounts will also change around. More than usual is expected in the eastern Gulf states and along the Atlantic seaboard. Less than usual amounts of snow and rain are predicted during February in the Great Lakes region, the northern plains and over the Southwest. Elsewhere about the usual amounts are expected.

The cold weather will come down from the Arctic Ocean propelled by an anticyclonic movement of the winds aloft. It will move alongside of a dip to the north in the west-to-east wind current over the United States between 10,000 and 30,000 feet up.

This anticyclone — a counterclockwise whirling of wind currents—is what made the weather pattern during the past two months remarkably similar to the same months in 1949-50. However it is now much farther north than its older brother went two years ago.

Science News Letter, February 9, 1952

BIOPHYSICS

Food Without Plants

Attempt is being made to convert solar energy into usable chemicals by photosynthesis outside the living cell, AEC's Eleventh Semiannual Report reveals.

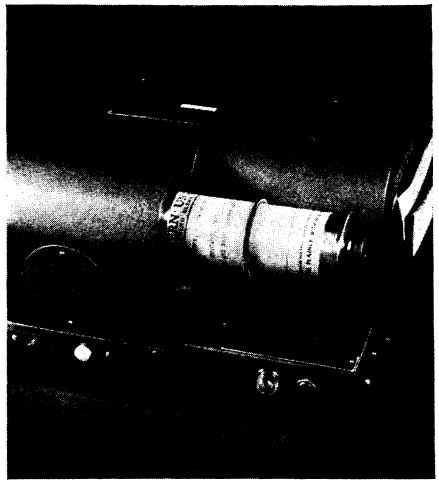
See Front Cover

➤ AN ATTEMPT is being made as a part of the atomic energy program to make photosynthesis, the conversion of solar energy into usable chemicals, take place outside the living cell.

The University of Utah, under an AEC grant, is engaged in this task, the Commission's Eleventh Semiannual Report presented to Congress reveals.

Plant extracts containing chlorophyll, the green matter of plants, are obtained by applying high pressure to plant material. Previously it was demonstrated that such cell-free extracts can split water into hydrogen ions and release oxygen gas. But all attempts to make them convert carbon dioxide into carbohydrates, as the plants do, have failed. This is the second part of the photosynthetic process. In other laboratories other investigators also are at work on this problem.

There is the possibility of practical applications of this process outside the plant, if it can be accomplished. Scientists foresee the production of food in the future without the aid of the living plant if photosynthesis of this sort is achieved. This may transfer agriculture to food factories in the future.



DESK COMMUNICATION — The Desk-Fax machine gives fast city-to-city Western Union service. Messages are sent and received on specially prepared, electrically recording blanks.

(See SNL Feb. 2, 1952, p. 68.)

Discovery of the first compounds that are produced in photosynthesis in living plants has been made in experiments at the University of California Radiation Laboratory, the AEC report says.

By use of radioactive carbon in the carbon dioxide fed to living cells, and a chromatographic analysis of the products of only two seconds exposure to light, the Berkeley group determined that the first stable organic compound a plant produces in photosynthesis is phosphoglyceric acid, which contains three carbon atoms and one phosphorus atom and oxygen and hydrogen. When the light exposure is slightly longer, a chain of reaction is set up that leads to the formation of sugars and other compounds essential to plant life. Second, the plants produced triose phosphates, with three carbon atoms, then fructose phosphates with six carbon atoms.

When photosynthesis has proceeded only two minutes, numerous amino acids needed for protein building and even proteins and fats are produced.

Experiments with radioactively tagged phosphorus are also yielding valuable information about plants. Scientists are learning how conventional fertilizers can be used more efficiently and economically. With radioactive isotopes, nutrients can be traced through the soil, into roots and through plants and to measure the speed of such movement as well.

The U. S. Department of Agriculture at Beltsville, Md., operates a central mixing plant for incorporating tracer isotopes in ordinary fertilizers. On the cover of this week's SCIENCE NEWS LETTER is S. B. Hendricks, shown weighing radioactive phosphate from the atomic pile at Oak Ridge to be compounded into a fertilizer.

American farmers spend 750 million dollars a year for commercial fertilizers. Until recent years, the effects of fertilizers could be told only by comparing measurements of the growth, bulk and yield of fertilized crops. It is believed that research with isotopes has gained more new knowledge of phosphate fertilizers in the last four years than had been gained in many years of other studies, the AEC reports. The U. S. Department of Agriculture, the various state experiment stations and the AEC cooperate in the fertilizer research program.

Science News Letter, February 9, 1952

Winter sprays which destroy large numbers of insect eggs are proving good insurance against *insect* injury the next season.