

GENERAL SCIENCE

**Westinghouse Science
Scholarship Winners****GRAND SCHOLARSHIPS OF \$2,400**

Prajmovsky, Marina, Farmingdale, N. Y.
Teschan, Paul Erhard, Shorewood, Wis.

ALTERNATES

Meirowitz, Beatrice, New York, N. Y.
Smith, Harlan James, Wheeling, W. Va.

SCHOLARSHIPS OF \$200

Jacobson, Janet Mary, Oak Park, Ill.
Meirowitz, Beatrice, New York, N. Y.
Ross, Jean Carol, Hammond, Ind.
Borgeson, Warren Thomas, Park River, N. D.
Brown, Barton, Sea Cliff, N. Y.
Craneheld, Paul Frederic, Lakemills, Wis.
Davis, Homer Frederick, Frewsburg, N. Y.
Halberstadt, Nathaniel Herbert, Floral Park,
N. Y.
Larimore, Wayne Homer, St. Paul, Minn.
Michener, John William, Pittsburgh, Pa.
Newell, James, Salem, N. J.
Ousley, Joseph Livingstone, Freeport, Ill.
Presberg, Jack Eugene, Rochester, N. Y.
Smith, Harlan James, Wheeling, W. Va.
Swartz, Clifford Edward, Niagara Falls, N. Y.
White, Donald Robertson, Schenectady, N. Y.
Winsor, Paul, III, Boonton, N. J.
Worthington, William Dorrance, Camden, N. Y.

ALTERNATES

1st—Williams, Mary Ann, Troy, N. Y.
2nd—Pike, Carol Ruth, New York, N. Y.
1st—Hoover, Richard M., Kansas City, Kan.
2nd—Voigt, Allan Earl, Salem, Ore.
3rd—Avallone, Eugene Attilio, New York,
N. Y.
4th—Phillips, Robert Edward, Glendale, Calif.
5th—Barthel, Paul Joseph, Evansville, Ind.

(For school affiliation, see SNL, June 27)

GENERAL SCIENCE

**Top Winners of Search
Shown on Front Cover****See Front Cover**

THE FRONT cover of the SCIENCE NEWS LETTER this week shows the top winners of the first Science Talent Search. Top row: Paul Erhard Teschan and Marina Prajmovsky, winners of Grand Scholarships of \$2,400. Lower: Beatrice Meirowitz and Harlan James Smith, alternates for the Grand Scholarships.

In case the winners, through illness or other cause cannot use the grand scholarships, they will be given to the alternates. Otherwise the alternates receive the \$200 scholarships.

Science News Letter, July 25, 1942

PSYCHOLOGY

**How Science Talent Winners
Were Chosen Told by Judge****Aptitude Test, Recommendations, Scholarship,
Essay, and Interviews Were Hurdles Used**

By DR. HAROLD A. EDGERTON

Director, Occupational Opportunities
Service, The Ohio State University

IN SETTING up the procedure for selecting the winners in the First Annual Science Talent Search, several questions needed to be considered: What kind of people should be selected? Were the techniques such as could be administered in the local schools? Would they lend themselves to fairly objective treatment? Were they such that the cost of dealing with the materials would not be prohibitive in terms either of time or labor?

In order to accomplish this, the kinds of people who should have the scholarships were considered. While there has been the classic picture of the scientist as a "lone wolf," a modern version is an individual able to think for himself, to lead others, and to work cooperatively. A scientist must be a well-rounded human being.

Well-Rounded Scientist

First, boys and girls capable of going ahead in science should be very bright. They should have some background in science. There should be evidence of strong interest in science, in terms of their hobbies and out-of-school activities. They should be socially competent.

For administrative purposes, it was decided to use the successive hurdles technique. By this is meant that all candidates would expose themselves to the first hurdle. Some would survive this hurdle and some would not. Those who survived the first hurdle would then expose themselves to the second hurdle. Those who survived the second hurdle would then go on to the third hurdle, and so on until only the scholarship winners remained. Such a method has its maximum validity only when the successive hurdles are applied in decreasing order of validity.

The successive hurdles were as follows:

(1) A science aptitude test. This test was a paragraph reading test, materials

for which were drawn entirely from fields of science. Such a test should select those who have the aptitude to study science in colleges and universities, but does not place a heavy premium on previous knowledge of science.

(2) High school record. The high school furnished a transcript of his high school record for each contestant, including a statement of his rank in the senior class and the number in the senior class.

(3) A recommendation blank for every contestant was filled out by members of the high school faculty. This record blank asked for information in regard to various traits: attitude, purpose, ambition, science aptitude, work habits, resourcefulness, social skills, cooperativeness, initiative, responsibility, mechanical ability, special abilities, and others. The recommendations gave specific evidence of what the contestant had done or failed to do by which his competence in the trait had been judged.

(4) Each contestant was required to submit an essay of not more than 1000 words on the subject "How Science Can Help Win the War."

Use of Hurdles

These hurdles were used in the order listed above. The science aptitude test was scored on the basis of the number of items correct. Each question was so arranged that only one answer could be considered the best or correct answer. It was agreed that the ratio of boys and girls throughout the contest would remain constant and equal to the ratio of boys and girls who entered the contest. This essentially made two contests.

The 600 boys and girls obtaining the highest scores on the aptitude test were the survivors of the first hurdle. These 600 were then exposed to the second hurdle.

The second hurdle was a combination of rank in high school class and amount of science taken, weighting the quality of work done (rank in class) five and amount of science taken, one. On the basis of this combined score, 300 were retained, still keeping the ratio of boys



OPENING EXERCISES

Presiding when the winners were welcomed to Washington and were given their final written examination were: Dr. Stuart Henderson Britt (left), Dr. Harold A. Edgerton, Dr. Alexander Weimore, Assistant Secretary of the Smithsonian Institution in Charge of the National Museum, and Dr. Harlow Shapley. In the background is Watson Davis.

to girls constant. Of these 300, 66 were girls and 234 boys. These 300 were then exposed to the third hurdle.

The third hurdle was the score derived from the recommendation blanks. Each item of the recommendation blank was scored either one or zero, indicating respectively good evidence of high standing in a trait or little or no evidence of high standing in a trait. Each item was scored independently by two judges. The amount of agreement between the two judges was high. On the basis of this score, the 117 highest boys and 33 highest girls were said to have survived the third hurdle.

To complete the fourth hurdle, the essays were considered. These essays were read by members of the staff of Science Service. Three raters judged the essays for the girls and 4 raters judged the essays for the boys, each rater giving a score of *good, fair, or poor* to each essay submitted.

In choosing the 40 trip winners from the 150 survivors of the third hurdle, the score on the essay and all of the previous evidence was considered. On this basis, the 40 winners, 9 girls and 31 boys, were invited to Washington.

The fifth and last hurdle applied to the 40 trip winners, survivors of four

previous hurdles, included two new sources of information about each contestant. The larger part consisted of the judgments of three interviewers. The interview was standardized, aimed primarily at exploring breadth of background of the contestant; how well his background fitted him for preparing for a career in science; and how strong a drive each seemed to have toward a career in science. Each contestant was interviewed separately by three interviewers. (The other interviewers were Dr. Stuart Henderson Britt and Dr. Harlow Shapley.) After finishing the interview, the interviewers made their ratings of the contestant before going on to the next interview.

A test designed to judge the clarity of thinking of the 40 trip winners, in regard to social situations, was also administered.

The scholarship winners among the 40 were selected primarily on the basis of the interview. All the evidence: test scores, high school rating, recommendations, etc., was carefully considered. Selection was made on a conference basis rather than on the basis of numerical artifacts.

No technique of selection can guarantee that all of those selected will become

outstanding scientists. It is hoped, however, that among the 40 one or two may become outstanding leaders in their sciences and that many more will make substantial contributions to science.

Science News Letter, July 25, 1942

ORDNANCE

Arms Manufacture Nothing New in India

MANUFACTURE of arms and ammunition in India is nothing new, despite present somewhat lively discussion of the industry. Arsenals at Cossipore and Ishapore, near Calcutta, have been in the gun-making business for a long time, states S. J. Hopper, former superintendent at both those places. (*Army Ordnance*, July-August.)

There was a gun factory at Fort William in Calcutta more than 150 years ago, and the establishment at Cossipore was set up just at the beginning of the 19th century, Mr. Hopper states. Prior to 1850, ordnance as heavy as 13-inch mortars and 32-pounder long guns had been cast in iron at Cossipore, besides bronze pieces in a variety of calibers.

Ordnance activities in India during the present war have included enlargement of both these establishments and intensification of the work programs there, including the training of considerable numbers of new native employes. There has also been a good deal of war-conversion of other shop facilities, especially railway construction and maintenance shops.

Products of ordnance plants in India now include field guns, machine guns and small-arms, with ammunition in great quantities; armored cars; two types of airplanes based on American models, and gas masks. Indian shipyards are turning out trawlers, mine-sweepers, lighters and similar small craft, though engines and boilers still have to be imported. An effort is now being made, however, to manufacture the propelling machinery at home.

Science News Letter, July 25, 1942

● RADIO

Saturday, August 1, 1:30 p.m., EWT
"Adventures in Science," with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Dr. John Q. Stewart and Newton L. Pierce, of Princeton University, will discuss Navigation in War and Peace.

Tuesday, July 28, 7:30 p.m., EWT
Science Clubs of America programs over WRUL, Boston, on 6.04, 9.70 and 11.73 megacycles.

L. B. Argulmbeau, Massachusetts Institute of Technology, will discuss "Frequency Modulation." One in a series of regular periods over this short wave station to serve science clubs, particularly in the high schools, throughout the Americas. Have your science group listen in at this time.