GENERAL SCIENCE

Science Scholarships

Boy who is a research chemist and a girl metallurgist, both from Brooklyn, win $2,400 each as top students in the Science Talent Search.

See Front Cover

➤ A YOUNG 16-year-old organic research chemist of Brooklyn who has already worked with two classmates to prepare scarce organic compounds for the U. S. Army, won one of the two top-honor Westinghouse $2,400 Grand Science Scholarships in the Fourth Annual Science Talent Search just completed by the Science Clubs of America. He is Edward Malcolm Kosower, a student in the senior class of Stuyvesant High School, New York City.

Top winner among the girls for the $2,400 scholarship is Marion Cecile Joswick, 17, also of Brooklyn, who has picked research metallurgy as her field of scientific work. She has made a collection of fluorescent minerals and has set up and demonstrated apparatus for the microscopic study of diatoms, the algic fossils which form a kind of earth.

Portraits of the top winners are shown on the front cover of this SCIENCE NEWS LETTER.

Eight other high school seniors were selected by the board of judges to receive four-year Westinghouse Science Scholarships worth $400 each, and 30 were granted one-year Westinghouse Science Scholarships of $100 each. All 40 of these high school seniors attended a Science Talent Institute in Washington at which they heard lectures by eminent scientists and had the opportunity of meeting scientific leaders.

SCIENCE TALENT INSTITUTE ***—Alternates for the $2,400 scholarships are shown on the top row of the facing page: left, Robert Hall and right, Nancy Stafford. Center, a group of winners at the National Airport where, with the help of the Weather Bureau, they launched a balloon into the stratosphere. Second row left, Dr. Adams and a group of winners and right Maj. Gen. Osborn, Nancy Stafford, Edward Kosower, Marion Joswick and Robert Hall. The $400 scholarship winners below are: Jerome Blackman, George Clark, Richard Milburn, Saul Kravetz, Michael Tinkham and Andrew Streitwieser. Photographs by Fremont Davis, Science Service Staff Photographer.***

Edward

In addition to the manufacture of scarce chemicals, Edward Kosower has been doing research in an attempt to synthesize pyridazine, one of a group of chemicals from which important medicines are derived. He has not yet succeeded in this, but with his associates, he did develop a new method for synthesizing a form of glutaric acid, which is an intermediate in the synthesis of pyridazine. Other research on the chlorination of fluorene with sulfuryl chloride which he conducted with another finalist in the Science Talent Search has been published in the *Journal of the American Chemical Society*.

Marion

Metals and minerals have engrossed the attention of Marion Joswick since she was eight years old and was impressed with the beauty of a huge mass of translucent beryl at the Brooklyn Museum of Art.

Alternates for the $2,400 Westinghouse Grand Science Scholarships are Nancy Jeannette Stafford, 17, of Watertown, N. Y., who is planning to be a psychiatrist when she can complete her training, and Robert Leonard Hall, 18, of Green Bay, Wis., who is interested in the study of ancient Indian life and other prehistoric man.

An ingenious method for restoring prehistoric pottery vessels that have been unearthed in fragments has been devised by Robert Hall, who has prepared a paper on Indian excavations that has been presented before the Wisconsin Academy of Sciences, Arts and Letters.

Nancy Stafford's essay was written about the use of the Indian arrow poison curare in the treatment of mental illness. She has, herself, done experimental work on animals to determine the effects of this potent drug.

Science News Letter, March 17, 1945

DENTISTRY

Caries May Be Prevented

➤ MAYBE some day in the future we will be able to keep our teeth from decaying by using toothpaste or chewing gum containing tryptophane or by swallowing regular doses of this chemical in the form of tasteless white crystals.

This possibility appears in a report by Mrs. Naomi C. Turner, of Radcliffe College, in the *Journal of School Health* (March).

"The essential amino acid tryptophane," she states, "has distinct promise as a preventive agent for dental caries."

Amino acids are protein building blocks. Certain of them are called essential because the body cannot synthesize them and must have them for growth and health.

Tryptophane's promise of preventing tooth decay is based on the finding that it slows down the rate of starch decomposition. In a previous study of 51 patients at the Forsyth Dental Infirmary Mrs. Turner and E. M. Crane had found a correlation between starch decomposition by the saliva and the amount of caries, or tooth decay, in the mouth. Persons with 20 or more cavities produce saliva which decomposes, or hydrodyzes, starch very rapidly. Persons with little or no tooth decay produce saliva which hydrolyzes starch very slowly.

The finding that a high protein (low carbohydrate) diet has a favorable effect on caries and other findings led Mr. Crane to suggest looking to the amino acids for a material that delayed starch hydrolysis by the saliva.

Mrs. Turner has already tried the effects of doses of tryptophane in one person. Within a week, the time required for starch hydrolysis by this person's saliva had increased from a base rate of 20 minutes to 240 minutes. Whether tooth decay will be prevented, Mrs. Turner says, remains to be established.

Ordinarily, studies of a number of patients would be made before reporting results, but, Mrs. Turner states, she is reporting consistent studies of one individual at this time in order that interested research workers may undertake

simultaneous studies on the effects of tryptophane in reducing tooth decay.

Best dosage and best way of giving the chemical will also have to be determined in future studies.

Science News Letter, March 17, 1945

GENERAL SCIENCE

Future of Science

The development of the study of man depends upon the younger generation whose minds are the least touched by the psychoses of the war.

By MAJ. GEN. F. H. OSBORN

Director, Information and Education Division, Army Service Forces

Address given before the Awards Dinner of the Fourth Annual Science Talent Institute, March 6, 1945.

➤ WE ARE meeting here tonight during one of the critical periods of the life of man on earth. For the first time in human history the cultures of the races and nations of men are merging into one great human culture. This process began some hundreds of years ago with the voyages of Marco Polo. Then India became accessible, North and South America were discovered and colonized, and finally in the lifetime of living men Japan was broken open, the islands and peoples of the Pacific became known, North Africa was explored and Old China began to turn in her century old sleep. The land of the world could be put down on maps and charts. The people of the world could be studied and described by anthropologists. But in vast areas the people retained their old cultures, unaware of other ways of living of the men in other lands.

Now the most terrible of all wars has hastened this change to one world. Using all the technical advances of our scientific age, the war has linked the nations of the globe with air routes, with radio, with the rapidly distributed printed word; men travel by plane today from any spot in the world to any other spot in 60 hours. By the end of this year it may be 40 hours. The voice of Stalin or Roosevelt or Churchill or Hitler is heard instantaneously in any corner of the globe where man has a good enough receiving set. *Yank*, the Army weekly, the first global publication, is printed simultaneously in 20 different spots clear round the world. Never again will any people on this earth be out of touch with what is going on concerning the people in the rest of the world. Not unless we fail.

Unless we fail? Who, we, Americans, we, of the United States, of my generation and of your generation? Are we so important in these critical times? Yes, by a strange turn of fortune, and not at all by our own desires, that is just how important we are. The people of the world are at one of the great cross roads of history. One road leads to a new dark age. The other road leads to a new and better world. And because for the first time we are living in one world, it is no longer possible for different nations to take different roads. Whichever road is chosen, all the people of the world will have to follow it. The choice of roads is hanging in the balance. Many people will wait on the decision of the United States, in many respects the most powerful nation in the world. Our weight, thrown in the balance, will be a mighty factor in deciding which road humankind will follow for a long time to come.

So, now, let us look into the minds and hearts and experience of we the people of the United States, in order to see how qualified we are to make such a choice.

We have some bad handicaps. We must be very frank with ourselves about that. We have lived our whole life as a nation in a very self-contained continent whose vast natural riches have provided materials for the good life without trading with other lands. So we are less conscious than other people of our ultimate dependence, on the rest of the world. Because we haven't had to live on world trade, we don't know the rest of the world as the British and many countries of Europe do. Until just recently we have been isolated or protected by two great oceans, so we haven't had the experience of having to live with our neighbors. Many people actually came to this country in order to get away from oppression in other countries, so many in fact that it became one of our national principles that we could and should live apart from other peoples. But that was before radio and airplanes and robot bombs and rockets.

Finally, and worst perhaps of all, life has been very easy for us compared to the life other peoples have had to live. We've had more land, more food, more roads, more cars, more telephones, more bathtubs, more central heating, more margin of wealth to devote to science, education, music and art, than any other people, though other people worked as hard or harder than we did. Let's be very honest with ourselves,

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