

GENERAL SCIENCE

STS Winners' Reports

Original projects helped 40 of the nation's top high school scientists win trips to Washington and a chance to compete for \$11,000 in scholarships.

► FORTY HIGH school scientists who came out on top in the nationwide Science Talent Search competition will meet in Washington, D. C., on Feb. 24 to compete for \$11,000 in Westinghouse Science Scholarships. They will also meet leading scientists and see important research laboratories during their five-day visit.

As a continuation of last week's series, here are some of the original scientific projects that helped them win the honor:

Charts Color Change

► A STUDY of the color changes in fruits and vegetables soaked in vinegar or ammonia was the scientific project of 17-year-old Alice Katherine Hartley, a senior at Bassick High School in Bridgeport, Conn.

Noting that the bright colors of food plants, such as red cabbage, blue grapes, beet roots and purple plums, change color in vinegar and ammonia, Alice made a study of these natural indicators.

She built instruments to measure the degree of acidity or alkalinity shown by the color of the juices she extracted from the plants, and the point at which the change in color occurs.

The career of research chemist in industry appeals to this young scientist, who flouts tradition by naming mechanical engineering as her second choice.

Studies "Water Dance"

► THE BEHAVIOR of drops of water that appear to dance on hot stoves was studied and photographed by 17-year-old Daniel Hughes Wilson of Kansas City, Kans.

The Sumner High School senior was named one of the 40 winners in this year's Science Talent Search.

Using a self-designed and self-made special projection system to analyze the drop vibrations, known as the Liedenfrost Effect, the student scientist found that the horizontal vibrations observed are excited by vertical vibrations. He also discovered that there is a vapor film underneath the drop of water on which the drop floats and evaporates and that the vibrating drops make contact with the surface of the stove only on rare occasions.

Seeks Desert Insect

► TRACKING ACROSS the southern California desert for two weeks in search of a primitive "insect" helped Thomas Stafford

Briggs of San Francisco win his trip to the nation's capital.

The tall, lanky 16-year-old senior from Abraham Lincoln High School who some day hopes to be a professor of nuclear physics, has been named one of a group of 40 winners in the 14th annual Science Talent Search.

Setting up camp last summer on a weathered volcanic ridge 75 miles east of San Diego, the young scientist and a friend hunted night and day for solpugids, a highly elusive desert inhabitant which is not a true insect, but belongs to the same family as spiders and scorpions.

By the time his two weeks were over, Tom had collected several specimens of different types of solpugids, which he carried home to his own laboratory. He observed their habits in captivity and kept them alive by feeding them earwigs, crickets and moths.

'Flu Virus in Mice

► THE PUSH in recent years to develop effective vaccines against virus diseases, such as polio and influenza, inspired Carol Elnora Myers, age 16, of Canastota, N. Y., to find out whether mice could be successfully vaccinated against a strain of mouse influenza that would kill any non-vaccinated mouse.

She grew the virus on chick embryos, then harvested it from the eggs and treated part of it with formalin, to inactivate the virus. This became the vaccine. The vaccine was tested by vaccinating 15 mice. These and an equal number of control, unvaccinated mice were then given influenza virus in doses of three strengths.

All five of one group of vaccinated mice were able to withstand the strongest dose of virus, though this killed four out of five non-vaccinated mice. Against the weaker doses of virus, some non-vaccinated as well as all vaccinated mice survived. The reason, Carol gave as her opinion, was that the non-vaccinated mice had enough natural antibodies to overcome the amount of virus they received.

Hoping to attend Syracuse University and study a pre-medical course, she would like to become a medical doctor.

Next week the SCIENCE NEWS LETTER will publish more descriptions of the original projects submitted by the top winners of the Science Talent Search.

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Heart sounds of any frequency can be recorded with fidelity using the new direct-writing phonocardiograph.



COLOR RADAR—This device demonstrated recently to the Navy can project stationary and moving targets in separate colors. The effect is accomplished by two radar systems and a cathode ray tube similar to those used in color television. The set was developed by Chromatic Television Laboratories in New York.

BOTANY

Lighting Control Increases Blooming

► RECENT DEVELOPMENTS in lighting control have extended the growing season for chrysanthemums, asters and daisies, increasing the commercial value of these flowers.

Dr. Anton Kofranek of the department of floriculture and ornamental horticulture at the University of California at Los Angeles finds that chrysanthemums, naturally a fall-blooming plant, can be made to bloom earlier by shading during the day or later by applying artificial light at night.

Using such techniques, the mild-weather states of California and Florida supply much of the nation with field-grown "mums" the year around. California, with over 200 acres, produces most of the summer and fall crop. Florida, with 100 acres, grows much of the winter crop.

By using artificial light at night, field-grown, summer-blooming asters can be made to flower three months earlier, experiments on the Los Angeles campuses have shown. Through the same techniques they are now made to blossom out of doors in Florida during the winter.

Other artificial lighting experiments at U.C.L.A. have made it possible to hasten flowering of daisies, which bloom naturally in late spring, by as much as six weeks. About 60 acres of daisies are growing under artificial lights this year in California, which practically has a monopoly on their production.

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