

GENERAL SCIENCE

Top Young Scientists Chosen

The scholarship winners in the 21st Annual Science Talent Search specialized their studies in the fields of biology, astronomy, medicine and physics.

► A 16-YEAR-OLD boy from near Cape Canaveral was selected as the year's most promising young scientist for his research on the functions and behavior of nerve cells.

As top winner in the 21st National Science Talent Search conducted by SCIENCE SERVICE, Christopher G. Cherniak of Eau Gallie, Fla., has been awarded the \$7,500 Westinghouse Science Scholarship for his studies. He was chosen from more than 23,000 high school seniors across the nation.

Four other top winners were: Lewis B. Haberly, 17, of Severance, N. Y., \$6,000; Joseph Eyer, 17, of Philadelphia, \$5,000; Jack S. Catlin, 17, of Miami, \$4,000; and Leonard H. Gordy, 17, of Rome, N. Y., \$3,000.

For the second place prize, Lewis B. Haberly investigated the hearing ability of fish by planting electrodes in the brain of a brown bullhead. Joseph Eyer captured third prize with his discovery of a "corrector" system for telescopes and his observations of Venus and Jupiter.

Jack S. Catlin gained fourth place for his cancer research project, which showed that a calf serum inhibits the effects of a virus that causes cancerous lesions in chicken embryos. And fifth place winner Leonard Gordy investigated the effects of a plasma on microwaves.

The five scholarships in addition to 35 other awards bringing the total to \$34,250 were presented to 10 girls and 30 boys at a banquet in Washington, D. C.

Techniques to Prolong Life

The top winner, Chris, developed techniques to prolong the life of nerve cultures for several weeks in an artificial environment, and to monitor the electrical functions of the nerve cells without damage to the tissue.

In his process, electrodes are attached to nerve culture immersed in mineral oil at a constant temperature while oxygen is forced in the solution.

For two years Chris has worked toward better understanding of nerve systems. Before winning top honors in the Science Talent Search, he won senior position at the National Science Fair at Kansas City, as well as special first place awards from the American Medical Association, the U.S. Army, Air Force and the Navy.

Chris reasoned, "it would seem that . . . present-day neurophysiology has started at the top and attempted to relate the most complex forms of behavior to the brain as a whole." His approach starts with the individual nerve cell and traces the reaction of a stimulus from the cells to the final response of the network.

Two years ago he was appointed head of a committee to provide his Melbourne High School teachers with ideas to improve students' ideas and studies. In addition to his studies, Chris likes hiking, sailing and the clarinet.

Lewis Haberly, recipient of the second place scholarship, undertook studies in surgery to enable him to complete his research project. Lewis planted electrodes in the brain of a brown bullhead and connected them to an oscilloscope.

Results revealed information which may affect former theories on the hearing of fish, "a subject that has long been disputed," he wrote in his report. He believes he has established that a hearing sensation, not a mere detection, exists for the reception of sound waves in fish.

Lewis is looking forward to a career in brain research. His hobbies include photography, rocketry, osteology, lepidoptery, and microscopy. He is a student at Schroom Lake Central School near Severance.

Method Corrects Astigmatism

The third place scholarship went to Joe Eyer for his project proposal of a new method for correcting astigmatism in two types of telescope, and his investigations of the planets, Venus and Jupiter.

Joe's "corrector" system is easily manufactured, which is the drawback with other methods.

He has also built four telescopes from raw material and analyzed information collected during his observations of Venus and Jupiter. Last year, he presented a paper on his theory of the nature of Jupiter's atmosphere at the Astronomical League Convention.

He is also interested in photography and tissue culture work. He plans to study astronomy at the California Institute of Technology after graduation from Central High School in Philadelphia.

Jack Catlin, fourth place winner, won with his cancer research project. Calf serum has been found to inhibit or slow the formation of cancerous lesions caused by a virus in chicken eggs. He found that the serum inhibits the effects of the virus, and that this may be related to the change in the composition of the serum of humans with cancer.

Jack plans to attend the University of Chicago and major in mathematics after graduation from Coral Gables Senior High School. He enjoys bowling, water skiing and coin collecting.

Lenny Gordy investigated the effects of a gas discharge or plasma on the transmission of high frequency radio waves known

as microwaves and captured fifth place with the studies.

He showed that the strength of the microwave signal is directly related to the current in the plasma.

Lenny plans to major in physics at the California Institute of Technology after graduation from Rome Free Academy. He is interested in Hi-Fi, butterfly breeding and research in his home physics laboratory.

First alternate for the \$3,000 scholarship was Miriam Herzfeld, 16, Brooklyn, for her study in psychology. She attends Erasmus Hall High School. John F. Emmel, 17, of Los Angeles, was second alternate, while Mitchell J. Fruitstone, 17, of Coral Gables, Fla., was third. John is a student at Dorsey High School and Mitchell attends Coral Gables Senior High School.

These three, and the other 32 winners of the Science Talent Search, received Westinghouse Awards of \$250 each in recognition of their top level ability and promise as creative scientists of the future. All 40 winners were in Washington for a week of meetings with top scientists during the Science Talent Institute.

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TOP SCIENCE TALENT—The three top scholarship winners are seen with their projects across the top. Left to right are Christopher G. Cherniak, Lewis B. Haberly and Joseph Eyer.

Second row, left, winners of the Science Talent Search see the ripple tank demonstrated at the Congressional dinner by Dr. John W. Coltman, associate director, Westinghouse Research Laboratories, Pittsburgh, Pa. They are (upper left to lower right) Peter E. Grafstein, Charles F. Rogers, Dr. Coltman, (kneeling) Barry P. Cook and Gerald R. Smith, and Michael M. Wojcik. The center shows the fourth top award winner, Jack S. Catlin, and, right, the fifth top winner, Leonard H. Gordy.

The third row shows, on the left, first alternate winner, Miriam Herzfeld, and, on the right, the second alternate winner, John F. Emmel. Between them is first award winner Chris Cherniak discussing photography with Judith M. Jaime in front of the Capitol.

Bottom, left, three of the forty winners of the Science Talent Search inspect an electron microscope at the medical unit laboratory at Fort Detrick, Frederick, Md., during the Science Talent Institute. They are Herbert I. Fried, Katherine M. Gates and (seated) Ralph Zuckerman. To the right is the third alternate award winner, Mitchell J. Fruitstone.

