GENERAL SCIENCE

Young Scientists Make Good

Researches ranging from birds to stars to atoms are being performed by winners of the first seven Science Talent Searches for Westinghouse Science Scholarships.

By MARGARET E. PATTERSON

➤ A BACKYARD, an attic or even a kitchen sink in your neighborhood may help launch the future fight on disease or the solving of mysteries of the still little-known atom. It is in such humble "laboratories" that teen-age youngsters are today getting their start in science. For some of them fame is only a few months away.

Spotlighted in their senior years in high school, 280 young scientists are already combining youth and talent to make good in many different fields of science.

Mysteries of nature ranging from birds to stars to atoms are already under attack in the researches of the winners of the first seven Science Talent Searches for Westinghouse Science Scholarships. Each year beginning in 1942, 40 top high school scientists have been picked as winners in the search conducted by Science Clubs of America, administered by Science Service. Today, most of this group is still in college, training for careers in science. But this has not kept them from making mature research achievements.

Future Scientists

A glance at the work some of these young scientists, 15 to 24 years old, have done during the past summer supports the verdict of Talent Search judges that these young men and women will contribute to the future.

Martin Karplus, amateur ornithologist and physiologist-to-be, observed bird navigation by foot and by air under 23-hour daylight conditions in Point Barrow, Alaska, for the Arctic Research Laboratory.

Five young astronomers practiced their chosen profession in widely separated areas. Mrs. Constance Sawyer Warwick, Joyce Marrison and Gordon Newkirk, Jr., collaborated on problems of the sky, using the telescopes and cameras of Harvard's summer station in Massachusetts. Harlan Smith charted meteors at night from a field station in New Mexico for the Navy. Elizabeth Roemer continued her daily sun-spot observations in California and reported them regularly to the National Bureau of Standards.

Future geologists chose various ways of learning more about their subject. Barclay Kamb went on another mountain climbing expedition in the far west, earning his expenses as counsellor to a group of adventurous youngsters. Jerome Eisenberg, lately elected editor of a professional geology magazine, roamed south to Cuba and north to Canada in search of likely material for future articles. Paul Cloke returned to his summer job as a geological field assistant with the U. S. Geological Survey in Maine.

Jules Kernen, biochemistry student, went back to Washington University for his fifth summer as a research assistant in the botany department. Paleobotanists there are using the fossil plant specimens he collected, cleaned, carved, chipped and labelled.

Future M. D.'s found work in hospitals and laboratories. Cecilia Self was a biology aide in California while Gary Felsenfeld was a laboratory assistant in a New York hospital. Ruth Reichart and Alice Dale, more advanced in their medical studies were able to fill positions as research assistants in experimental surgery in New York City and Nashville.

Professional Stature

Robert Hall, anthropologist of several years' training, jeeped over the territory soon to be flooded by the Missouri River. For the second summer under the auspices of the Smithsonian Institution he searched and dug for archaeological treasures that should be saved.

David Shappirio collected wasps in Washington, D. C., and polished off some more of those scholarly studies about the habits of rare wasps that are making him an authority in this field at 18. Saul Kravetz is a mathematics major who speaks several languages fluently. He translated mathematics texts from German and Russian into English under contract to a publishing house.

Physicist-in-training David Cudaback delved into the mysteries of Geiger counters, cosmic ray counting devices and cyclotrons for his third summer in the Radiation Laboratories at Berkeley, Calif. Raymond Schiff, research assistant in the Westinghouse Research Laboratories, lectured through Texas, explaining nuclear physics to lay audiences. He did such stunts as mounting a Van de Graaff generator and taking a charge that made his hair stand on end.

All these young scientists have now returned to their college classes. They are only a few of the 280 who have been discovered through the seven years of the Science Talent Search. The Eighth Search is already underway to select 40 more from the senior classes of the country's high schools.

The 16,000 boys and girls who entered the competition this year were busy with practical experience in science during their vacations and are now back at their high school studies. They have reported on the results of their investigations and experiments in a 1,000-word essay on "My Scientific Project," one of the requirements of the competition which ended Dec. 27, 1948.

In 18 states where State Science Talent Searches have been set up to run concurrently with the national competition, the fortunate entrants will have a double chance of placing in the national or state contest and are thus assured of more opportunity for further school work.

Scholarship Awards

From the thousands who competed this fall one boy or girl will be selected to receive a Westinghouse Grand Science Scholarship of $2,800. A similar award of $2,000 will go to the runner-up. Other contestants will receive scholarships ranging from $100 to $400. All scholarships are made available through the Westinghouse Educational Foundation.

Science Service and the Westinghouse Electric Corporation join in the administration of the annual Science Talent Search. Through it they are helping to alleviate the manpower shortage in science—one of the most critical shortages that faces the

RESEARCH ASTRONOMER—Mrs. Constance Sawyer Warwick of Lewiston, Me., adjusts a Schmidt telescope of the Harvard College Observatory.

PRACTICAL EXPERIENCE—Youthful Roy Willcockson of Tulsa, Okla., explains an oil field seismogram which has just been recorded in a Wyoming field of the Stanolind Oil and Gas Company.

world today. Industries, research laboratories and universities lack sufficient trained personnel for important research work. Funds are available for new plants and laboratories but the bottleneck is lack of people to staff them.

Finding and assisting promising, talented boys and girls who show research ability in science by the time they are high school seniors has been the concern of the Science Talent Search for the past seven years. It is now possible to begin to see the results of the experiment in spotting those young scientists who will be the research leaders of tomorrow.

The question is often asked: "Do the winners of the Science Talent Search really become scientists?" The answer is a definite yes. All have attended college and in spite of wartime delays in schooling there are now 69 men and 32 women who hold undergraduate degrees; six men and four women have their masters' degrees and one woman has completed her Ph.D. Three men and one woman are M.D.'s. Last year the winners attended 74 different colleges and universities in 23 states and abroad.

Full-time Workers

By far the greater number are still in school, but a few are now sufficiently advanced to hold full-time positions.

Down in Oak Ridge, Tenn., Judith Cassidy is a research assistant to a physicist in the National Laboratory of the Atomic Energy Commission. Catherine Ens does statistical work for Monsanto and Carol Pike, chemical engineer, is employed by Hydrocarbon Research, Inc. All spectrographic analysis at the Research Laboratories of the Sinclair Refining Co. is in the hands of Jean Ross, physical chemist.

Some of the women who have been winners are able to combine homemaking with their careers. Mrs. Gloria Lauer Grace, Ph.D., taught psychology at Barnard College; Mrs. Elizabeth Foster Tilton, M.S., is a technician in Chicago Lying-In Hospital of Chicago University, where she helps in a study of the metabolism of hormones. Mrs. Ruth Miles Briehl is a full-time medical technician in Dubuque, Iowa. Of the eight women who are married most have scientist husbands and are continuing their careers independently or as partners in their husbands' work. Mrs. Virginia March Kline has taken a temporary leave of absence from the McArdle Cancer Research Laboratory at the University of Wisconsin where she was a chemist to devote full time to her homemaking and daughter, but she follows the work closely as her husband is a chemist there, too. There is a high percentage of scientist wives among the 24 married men. They have a total of seven children.

Richard Hoover, M.S., chemical engineer, is the assistant supervisor of a new plant for synthetic caffeine manufacture for Monsanto in St. Louis.

Of those who are advanced beyond their first degree many are carrying heavy schedules of teaching and research work to assist in the teacher shortage. Wolf Karo, organic chemist at Cornell, and Edward Kosower, in the same field at the University of California at Los Angeles, earn their way with their teaching of undergraduates while they work on their advanced degrees. John Michener at Carnegie Tech teaches electronics, carries on a research project in the physics of metals for the Navy and at the same time finds time to complete the work for his Doctor of Science degree.

Fellowship Assistance

Previous winners have been fortunate in obtaining further scholarship and fellowship assistance to continue their training. Almost all who need it get such help. Some have been honored by national fellowships of generous proportions. Evelyn Pease, biochemist at the University of Michigan, and Rodman Jenkins, chemical engineer at Cal. Tech, are using pre-doctoral fellowships from the National Institutes of Health. Robert Kraichnan and Roy Mottleson, physicists, study at MIT under Atomic Energy Commission Fellowships and Clifford Swartz, physicist, also has one of these for his Ph.D. at the University of Rochester. Fellowships have been awarded to mathematician Halsey Royden at Stanford and Wayland Noland, organic chemist at Harvard.

Though none have been out of high school more than seven years, they are already becoming well known at science meetings where they report on their findings. A number have published the results of their research and at least two are well along on books they are writing about their work.

Complete details of the Eighth Annual Science Talent Search may be obtained by writing to Science Clubs of America, 1719 N St. N. W., Washington 6, D. C.

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