

GENERAL SCIENCE

Winning Science Projects

Eighteen winners are awarded their "wish-list" prizes at the Fifth National Science Fair held at Purdue University. The judges were amazed at the excellence of exhibits.

See Front Cover

► STAR-SPANGLED PHOTOGRAPHS of the night sky taken through a home-built telescope, a new way of printing patterns on hard-to-dye Dacron, a Stark modulated microwave spectrograph, the way plants are made to propagate, and the way light affects plant growth captured top national honors at the Fifth National Science Fair for three boys and two girls from Iowa, Missouri, Tennessee, Virginia and the District of Columbia.

Made by teen-aged scientists, the excellence of the exhibits amazed the judges, Watson Davis, director of SCIENCE SERVICE, said. A total of 18 awards was granted this year instead of the regulation 12. The winners are shown on the cover of this week's SCIENCE NEWS LETTER.

First place awards, consisting of \$125 in scientific equipment desired by the winner, went to the top boys and girls in each of the two exhibit classifications, physical sciences and biological sciences.

Doris Jean Hermes, 18, Martinsville (Va.) High School took top honors for her method of discharge printing on Dacron. She was also a first place winner in 1952 and 1953.

Philip Robert Lichtman, 17, Woodrow Wilson High School, Washington, D. C., and Samuel Theodore Scott Jr., 16, West End High School, Nashville, Tenn., tied for first place in the physical group for the boys. Their exhibits, respectively, were "Hydrogen-Alpha Photography of Emission Nebulae," a photographic exhibit of the heavens taken through his home-built telescope, and "Stark Modulated Microwave Spectrograph."

First place award to a girl in the biological sciences went to 18-year-old Leigh Ferne Temme, Lutheran High School, St. Louis, Mo. Her exhibit shows the different methods by which plants are propagated by nature and man. She has been working on this project since 1950.

The first place award for the best biological exhibit shown by a boy went to James D. Gohman, 16, Teachers College High School, Cedar Falls, Iowa. He dramatized light's effect on plant growth.

The second place awards, each \$75 in scientific equipment and books of their own choosing, were taken by:

Patricia Ruth Ludeman, 18, Chattanooga (Tenn.) High School, for a home-made working model of a subsonic wind tunnel.

Sarah Patricia Bellamy, 16, Bakersfield (Calif.) High School, for a set of dancing balls that shows how waves are propagated.

Three boys won second place awards in the physical science competition. They are Martial Leon Thieboux Jr., 17, Whittier (Calif.) High School, for his exhibit on amateur astronomical photography; Donald Louis Crabtree Jr., 18, Richmond (Ind.) Senior High School, for his display on heavy water of crystallization; and David Charles Waters, 17, Trenton (N.J.) Central High School, for his cartridge that plays phonograph records, using a photoelectric principle.

Girls winning second place honors in the biological category were 16-year-old Patricia Ann Pascus, Farmington High School at Unionville, Conn., for her display on enzymes, the body chemicals that are the "key to life"; and Carolyn Sue Evans, 18, Martinsville (Va.) High School. She designed a "scientific" pillow, using X-rays to help her prove that the spine should be rested in a normal position for the greatest sleeping comfort.

The only second place award to a boy in the biological category was claimed by Richard LeRoy Ware, 18, Richmond (Ind.) High School. He did a photomicrographic study of moth and butterfly wing scales.

Third place awards of \$50 in "wish-list" equipment went to:

Sidney E. Lyons Jr., 16, Chattanooga (Tenn.) High School, for his model showing the restoration and archaeology of Hiwassee Island.

David Irvin Gilbert, 17, George Washington High School, San Francisco, Calif., whose exhibit showed how plants "breathe" out water.

Charles William Waldron, 18, Midland (Mich.) Senior High School, for his display of skeletal staining and study of bone structure. Rebecca Jane Hutto, 17, Tipton (Ind.) High School, for her exhibit on Indiana insects.

Alice Louise Shaffer, 17, Union-Endicott High School, Endicott, N. Y., for her studies of the reaction that thyroxin has upon chick embryos.

A board of 15 judges critically rated the 95 exhibits for several hours before turning in their decisions. The awards were announced at an awards luncheon by Dr. George A. Hawkins, chairman of the judges and dean of the schools of engineering at Purdue.

The National Science Fair is sponsored by Science Clubs of America, administered by SCIENCE SERVICE. It is co-sponsored by local newspapers, universities, professional, technical and civic societies who help send each finalist to the national fair on all-expenses-paid trips.

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SCIENCE FAIR EXHIBITS—Left to right, Dr. Karl Lark-Horovitz, head of Purdue University's physics department, congratulates the five first place winners; Marjorie Ann Johnson, 17, Central High School, Grafton, N. D., checks over her notes on *Color Vision*; Henry H. Eichelberger, 18, Christchurch (Va.) School, is shown with his chigger trap, the small object on far right; Robert Dixon Dycus, 17, Lewis and Clark High School, Spokane, Wash., illustrates the solar system as it was on May 15, 1954; Leigh Ferne Temme points to the tumbleweed in her collection of plants; Jere DeLee Dando, 18, Shawnee-Mission High School, Merriam, Kans., shows the cloud chamber he built; Patricia Ruth Ludeman makes a final adjustment on her subsonic wind-tunnel; Karen Lauretta Dobson, 15, Mesa (Ariz.) High School, shows how colored lights affect plant growth; Beatrice Marie Wood, 17, St. Joseph Academy, Cleveland, Ohio, displays her work with chromatography; Philip Robert Lichtman shows his home-built telescope; Doris Jean Hermes checks a swatch of Dacron she printed, and Michael B. Lien, 17, Central High School, Fargo, N. D., displays crystals he grew and then photographed under a microscope.

MEDICINE

Lung Cancer to Be 18% Of All Cancers in 1970

► IF THE number of smokers in the country continues to be the same as at present, in 1970 one out of every five persons with cancer will have lung cancer.

This prediction was made by Dr. Alton Ochsner of New Orleans at the meeting of the National Tuberculosis Association in Atlantic City, N. Y.

Fortunately, this cancer is curable, Dr. Ochsner declared. The curative treatment is removal of the affected lung. The cure rate today, however, is not as high as it should be, he declared.

Every man past 40 who has unexplained chest discomfort, particularly if he has been a heavy smoker, should be suspected of having lung cancer until proved otherwise, Dr. Ochsner warned.

Too many persons with cancer of the lung are being treated for virus pneumonia, he declared.

In more than 1,200 cases of lung cancer seen by Dr. Ochsner and his associates, there was an average delay of eight months from the first symptom to the time definitive treatment for the lung cancer was started. Part of the delay was the fault of the physician and part the fault of the patient.

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