

GENERAL SCIENCE

Science Fair Winners

Four young scientists, two boys and two girls, were chosen top winners in the ninth National Science Fair. American Medical Association and Armed Forces also give awards.

See Front Cover

► HIGH SCHOOL SCIENCE fairs have produced nearly 100 new top rank young scientists who were presented to the nation at the National Science Fair awards dinner in Flint, Mich., on May 9.

A scene from the Fair exhibit hall is shown on the cover of this week's SCIENCE NEWS LETTER.

Judged as having the best exhibits at the national level were four teen-aged finalists. The two top girls were Eileen Jane Settle, 17, a senior at Portland-Wayne Township High School, Portland, Ind., "Insects on Our Farm," and Betty Ann Moore, 17, a junior at Chatham High School, Chatham, La., "Living Sulfates and Elementary Crystallography."

The two top boys were Verne D. Hulce, 16, a sophomore at Lansing Eastern High School, Lansing, Mich., "Nuclear Magnetic Resonance Spectrometer," and Eric Lawrence Rickes, 17, a senior at Rahway High School, Rahway, N. J., "Dutch Elm Disease Research."

Presentation of the awards followed a talk by Dr. Lawrence R. Hafstad, General Motors vice-president in charge of research staff. Watson Davis, director of SCIENCE SERVICE, which conducts the National Science Fair, presided over the dinner that climaxed a close competition between 281 finalists. They represented 146 affiliated fairs in the continental United States, Hawaii, Alaska, Japan and Army Dependents' schools in Germany and France.

Winners Receive Wish Awards

The four first place winners will receive Wish Awards of \$125 of scientific equipment or books of their own choice.

Eileen presented an extensive display of insects, collected over a period of two years on her home farm. Betty Ann, who has been totally deaf since she was eight years old, prepared an exhibit of crystals grown from sulfate and other substances, illustrating the axes of each system.

Verne D. Hulce's project shows nuclear resonance patterns by means of a spectrometer, and Eric Rickes investigated a control method for Dutch elm disease through study of the nutrition of this fungus.

Second honors and \$75 Wish Awards went to three girls and eight boys. The girls were Patricia Ernestine Sherman, 17, a senior at Foley High School, Foley, Ala., "Electrophoresis of the Blood of Animals;" Helen Winn Houston, 17, a senior at Baton Rouge Senior High School, Baton Rouge, La., "Plant Parasitic Nematodes;" and Mary Marshall Doyle, 17, a senior at William

Fleming High School, Roanoke, Va., "Factors Affecting Regeneration of the Earthworm."

The eight boys were Robert Walker Lynn, 17, a senior at Woodrow Wilson High School, Washington, D. C., "A Study of Melanin Turnover in Tadpoles;" Edward Ganz, 16, a junior at Walter Johnson High School, Rockville, Md., "Electronic Logic Analyzer for Solving Complex Problems in Propositional Calculus;" David R. Brown, 15, a sophomore at St. Louis Park Senior High School, St. Louis Park, Minn., "Humeral Transplants;" Ronald Michael Benrey, 16, a senior at Bronx High School of Science, New York, "Instrumentation of Space Satellites;" Kenneth Merrill Hanson, 18, a senior at Rye Neck High School, Mamaroneck, N. Y., "Precision Electronic Analog Computer;" John David Keich, 18, a senior at Tamaqua Senior High School, Tamaqua, Pa., "Original Sport Plane;" Brian Russel DePalma, 17, a senior at Friends' Central School, Philadelphia, Pa., "Critical Study of Hydrogen Quantum Mechanics Through Cybernetics," and Barrie Logan, 18, a senior at Stephen F. Austin High School, Austin, Texas, "Isolation of a New Growth Stimulant."

Third Award Winners

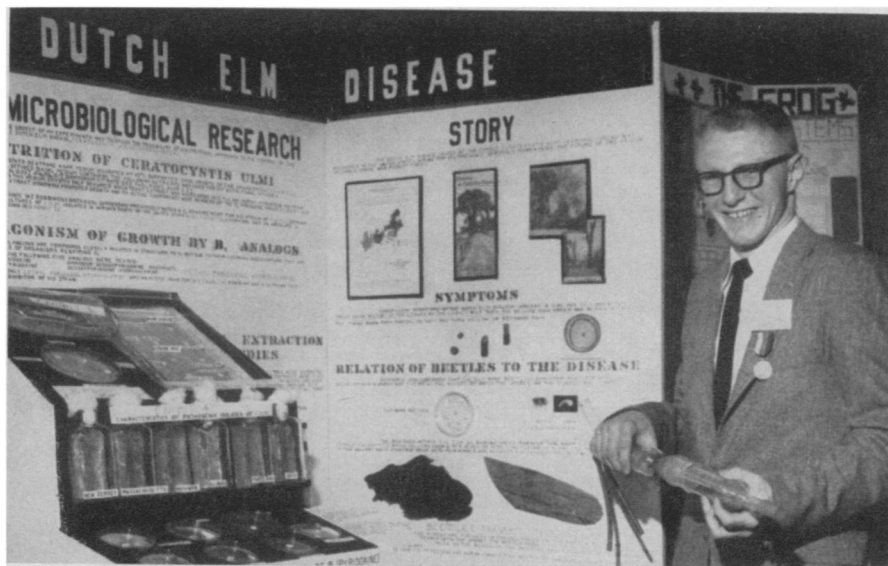
Winners of the third award and \$50 Wish Awards also went to three girls and eight boys. The girls were Margaret Jane Harvey, 17, a senior at San Bernardino High School,



BETTY ANN MOORE—One of the top four Science Fair winners, Betty Ann has been deaf since she was eight. Her exhibit here shows that all crystals of a substance are alike.

San Bernardino, Calif., "Effect of Low Temperatures on Uredospores of Wheat Rust;" Julia Berg Freeman, 17, a senior at Thomas Carr Howe High School, Indianapolis, Ind., "Oxygen for Space—Produced as You Go;" and Ann Elizabeth Pflug, 17, a senior at New Bedford High School, New Bedford, Mass., "Prime Numbers."

The eight boys were Alan E. Hill, 18, a senior at Sweetwater High School, National City, Calif., "Magnetic Thermonuclear Chamber;" Lawrence Moser Breed, 17, a



ERIC LAWRENCE RICKES—This top young Fair winner indicated his concern for stopping the spread of the Dutch elm disease by attempting to find a method of controlling the fungus tree disease.

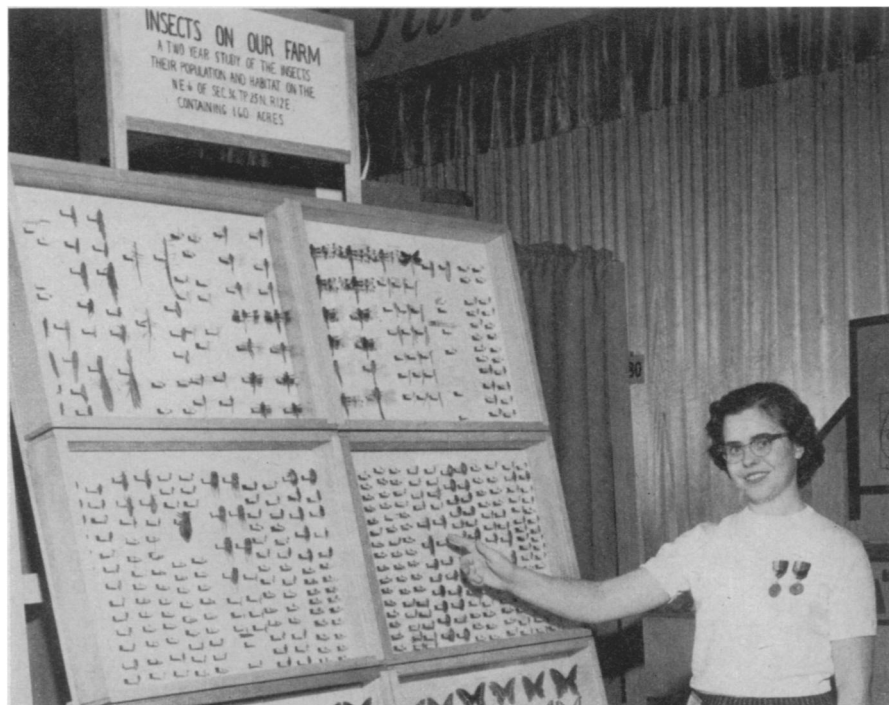
senior at Sidwell Friends School, Washington, D. C., "Four-Dimensional Graphing to Find Complex Roots;" Haven Noble, 16, a sophomore at Davenport High School, Davenport, Iowa, "Solar Motor;" James C. Hartman, 17, a senior at Central Catholic High School, Fort Wayne, Ind., "Titanium—Produced by New Method;" Mel Steinberg, 16, a senior at Lafayette High School, Brooklyn, N. Y., "High Voltage Particle Acceleration;" Michael James Wynne, 18, a senior at St. Louis University High School, St. Louis, Mo., "Ethnobotany of Corn;" Leo G. Morin, 17, a junior at Notre Dame High School, Berlin, N. H., "Axenic Cultures in Medical Research;" and Joe York Thomas, 17, a senior at La Porte High School, La Porte, Texas, "Sodium Azide—A Possible Aid in Combating Cancer."

Fourth Place Winners

The fourth place awards, \$25 in scientific equipment, in the field of physical sciences were won by the following seven girls: Sybil Eileen Trepanier, Iron Mountain, Mich.; JoAnne Joyce Holbert, Kansas City, Mo.; Eleanor Rachel Weisenhaus, Devils Lake, N. Dak.; Nancy Ruth Barnard, Williston, N. Dak.; Anne Garland Lynch, Oklahoma City, Okla.; Mary Lou Lacy, Martinsville, Va., and Martha Jeanell Halverson, Veradale, Wash.

Fourth awards to boys in physical science fields were won by the following 31: Robert Edward Arnell, Anchorage, Alaska; Vernon Allen Evans, San Bernardino, Calif.; Dean Stewart Ehn, Greeley, Colo.; Lawrence Marvin Gettleman, Miami Beach, Fla.; David Stephen Toback, Coral Gables, Fla.; Alan J. Friedman, Atlanta, Ga.; Leland Brooks Jackson, Atlanta, Ga.; William B. Dress, Jr., Evansville, Ind.; David Paul Eartly, Hammond, Ind.; Larry W. Odom, Wichita, Kans.; George V. Waldo Jr., Sunnybrook, Md.; Peter Richard Samson, Lowell, Mass.; Robert Joseph Seguin, Detroit, Mich.; William Edward Hauda, Sault Ste. Marie, Mich.; William H. Brenner, Bay City, Mich.; Keith Robert Spence, Biloxi, Miss.; Antony P. J. Browne, St. Louis, Mo.; Lindsay LaRoy Hess, Bozeman, Mont.; Paul Blutter, Brooklyn, N. Y.; Arthur Nathan Fankuchen, New York; Barry Schindler, New York; Kriss Leroy Stutzman, Archbold, Ohio; Charles A. Frenzel, Bartlesville, Okla.; Gene Cunningham Jr., Oklahoma City, Okla.; Llewain Scott Van Doren, Sunbury, Pa.; Henry Felix Breit, Warwick, R. I.; Joie Pierce Jones, Abilene, Texas; Gordon Wilson Romney, El Paso, Texas; Paul Corneil, Baytown, Texas; Joel H. Dressler, Arlington, Va., and Paul Edward Webb Jr., Hampton, Va.

In the biological fields, the following 14 girls won fourth place awards: Karen Ann Kjelgaard, Phoenix, Ariz.; Karen E. Reynolds, Marysville, Calif.; Kumiko Nagano, Tokyo, Japan; Joanne Marie Zerger, Salina, Kans.; Sarah Elizabeth Southwick, Midland, Mich.; Jane Marie Earl, Austin, Minn.; Clare L. Chatland, Missoula, Mont.; Diane Jean Davis, Hanover, N. J.; Carol Ann McColm, Farmington, N. M.; Barbara Jeanne Reynolds, Yonkers, N. Y.; Nancy Rebecca Green, Enka, N. C.; Lorraine C. Buzas,



EILEEN JANE SETTLE—Some of the eight boxes of insects, collected during a two-year period, were part of the project for which Eileen was awarded one of the four top places at the Fair.

Easton, Pa.; Ethel Mae Birch, Willow Grove, Pa., and Linda Ann Lawrence, Germantown, Tenn.

Boys winning fourth awards in biological fields were: William Paul Boyer Jr., Fayetteville, Ark.; Bing Leat Mah, Modesto, Calif.; Larry Karl Dahlkrist, Palo Alto, Calif.; David M. Jessup, Greeley, Colo.; John D. Friede, Canon City, Colo.; William Albert Dunson, Atlanta, Ga.; Jan Willem van Wagendonk, Bloomington, Ind.; Thomas Michael Church, Fort Wayne, Ind.; Jon E. Cornell, Wichita, Kans.; Richard Edwin Griffith Jr., Hyattsville, Md.; Jerry Dale Roller, Enid, Okla.; Asa William Bennett, Washington, Ga.; John William Betts, Spearfish, S. D., and James Henry Eley Jr., Austin, Texas.

Other Fair Awards

► TOP AWARD winners and their alternates were also announced by judges representing the American Medical Association, and the U. S. Navy, the Air Force and Army.

AMA citations were presented to Clare L. Chatland, 16, a junior at Missoula County High School, Missoula, Mont., and David R. Brown, 15, a sophomore at St. Louis Park Senior High School, St. Louis Park, Minn.

Honorable mention citations from AMA were given to Barbara Ann Conway, 16, a junior at Notre Dame High School, Chattanooga, Tenn., and to Robert LeRoy Sayre, 17, a senior at Vinson High School, Huntington, W. Va.

The two top AMA winners will be guests of the AMA at its annual convention in San Francisco, June 23-27, and their exhibits

will be presented with those of eminent doctors and laboratories.

The five young scientists who won Navy science cruises were: Alan J. Friedman, 15, a sophomore at North Fulton High School, Atlanta, Ga.; Edward Ganz, 16, a junior at Walter Johnson High School, Rockville, Md.; Verne D. Hulce, 16, a sophomore at Lansing Eastern High School, Lansing, Mich.; Joe Ed Gaddes, 16, a junior at David Lipscomb High School, Nashville, Tenn., and Joel H. Dressler, 15, a sophomore at Wakefield High School, Arlington, Va.

Their alternates were: David M. Jessup, 17, a junior at Greeley High School, Greeley, Colo.; David Paul Eartly, 16, a junior at Bishop Noll High School, Hammond, Ind.; David R. Brown, 15, a sophomore at St. Louis Park Senior High School, St. Louis Park, Minn.; Keith Robert Spence, 15, a junior at Biloxi High School, Biloxi, Miss., and Luedric D. Harman, 17, a junior at Ponca City Senior High School, Ponca City, Okla.

A special category award was given to Ichiro Matsubara, 18, a senior at Hibiya Senior High School, Tokyo, Japan.

The five Navy Science Cruisers received models of the Navy's CAG-1, the first guided missile heavy cruiser. They or their alternates will take a five-day Navy science cruise in the fall.

Air Force citations were presented to Leland Brooks Jackson, 17, a senior at Southwest High School, Atlanta, Ga., and to Ronald Michael Benrey, 16, a senior at Bronx High School of Science, New York. Their alternates were Dean Stewart Ehn, 16, a sophomore at College High School, Greeley, Colo., and William Eugene Kirchner, Jr., 17, a senior at St. Mary's Central High School, Bismarck, N. Dak.

First place winners will be guests at the Air Force Association's national convention and airpower panorama in Dallas, Texas, Sept. 24-28. They received models of the Thor rocket and the alternates were awarded models of a jet fighter.

The U. S. Army science awards winners were: William Albert Dunson, 16, a junior at Northside High School, Atlanta, Ga.; Alden H. A. Fairburn, 17, a senior at Lorain High School, Lorain, Ohio, and Paul Edward Webb Jr., 16, a junior at Hampton High School, Hampton, Va.

Their alternates were: Kenneth Merrill Hanson, 18, a senior at Rye Neck High School, Mamaroneck, N. Y.; Joie Pierce Jones, 17, a junior at Abilene High School, Abilene, Texas, and Robert LeRoy Sayre, 17, a senior at Vinson High School, Huntington, W. Va.

The Army will provide alternate trips to the Jet Propulsion Laboratories in California, the Army Ballistic Missile Agency in Huntsville, Ala., or to the laboratories of Walter Reed Hospital in Washington, D. C.

Many Messages Received

The National Science Fair finalists heard words of praise and encouragement from Government leaders and scientists.

President Eisenhower sent the following telegram:

"TO THE YOUNG SCIENTISTS AND THEIR TEACHERS ASSEMBLED AT THE NINTH NATIONAL SCIENCE FAIR, I SEND GREETINGS.

"THE ACTIVITIES OF THE SCIENCE CLUBS OF AMERICA CONTRIBUTE MUCH TOWARD THE QUALITY AND INTELLECTUAL VIGOR OF OUR YOUTH. THE MAINTENANCE OF OUR LEADERSHIP IN THIS CENTURY OF SCIENCE REQUIRES THE FULL

DISCIPLINE OF TRUTH, FREELY EXAMINED AND NOBLY APPLIED.

"IN THIS SPIRIT, IT IS A PLEASURE TO SEND BEST WISHES FOR A SPLENDID SCIENCE FAIR."

Matutaro Shoriki, State Minister and Director of the Japanese Board of Science and Technology, cabled the following from Tokyo:

"MANY THANKS FOR YOUR COR-DIAL MESSAGE ON FIRST JAPANESE PARTICIPATION IN NINTH NATIONAL SCIENCE FAIR STOP DEEPLY SATISFIED WITH ACCOMPLISHMENTS OF YOUTHFUL JAPANESE PARTICIPANTS STOP EARNESTLY HOPE THIS WILL LEAD TO DEEPER UNDERSTANDING AND FRIENDSHIP BETWEEN YOUNG GENERATIONS OF TWO COUNTRIES."

The following are excerpts from messages and addresses:

The Honorable G. Mennen Williams, Governor of Michigan—"Every adult and student who has the opportunity of going through these exhibits will wish to be more like you.

"The National Science Fair demonstrates what can be done to develop and expand our American scientific resources without in any way imitating the Soviet Union."

The Honorable Marion B. Folsom, Secretary of Health, Education, and Welfare—"The leadership of those responsible for the National Science Fair deserves particular commendation in this year of renewed interest and concern for our country's efforts in the field of science. This Fair exemplifies the kind of creative thinking so important to the Nation today . . ."

Dr. Lawrence G. Derthick, U. S. Commissioner of Education—"It has been particularly encouraging to note recent figures which show a fairly substantial upward trend in the number of students preparing

to be science teachers. I am confident that your work here has contributed materially to this trend, and I wish you every success in this year's fair."

Dr. Ellsworth S. Obourn of the U. S. Office of Education—"Out of you, the young dreamers of today and your dreams, come the scientists, the poets, the artists, the musicians, and the engineers of tomorrow. You are the creative minds of the years ahead. Into your hands will fall the mantle that will contain the challenge to push back further the barriers of ignorance and to discover new truth. On you will rest the well-being of a world that today is fraught with terror and fear. Perhaps in no age has a generation of elders passed on to a new generation a future so crucial."

Dr. L. R. Hafstad, a vice-president of General Motors and in charge of the research staff—"This Science Fair stimulus, however, has another facet which should not be forgotten, something immediate and personal. It is the profound satisfaction of individual effort, of intellectual initiative. And with it, usually goes the sheer thrill of exploration. These Science Fair exhibits are evidence you as participants have experienced this special feeling of satisfaction, and I am sure that you have enjoyed it."

More than 30,000 persons saw the Ninth National Science Fair exhibits and reporters covering the event wired an estimated 40,000 words to their newspapers in addition to telephoned dispatches.

Science News Letter, May 24, 1958

GENERAL SERVICE

Science Winners Excel In Logical Thinking

► WINNERS of the Science Talent Search conducted by SCIENCE SERVICE are able to think more logically than college graduates, even those with advanced or professional degrees and those with formal training in logic.

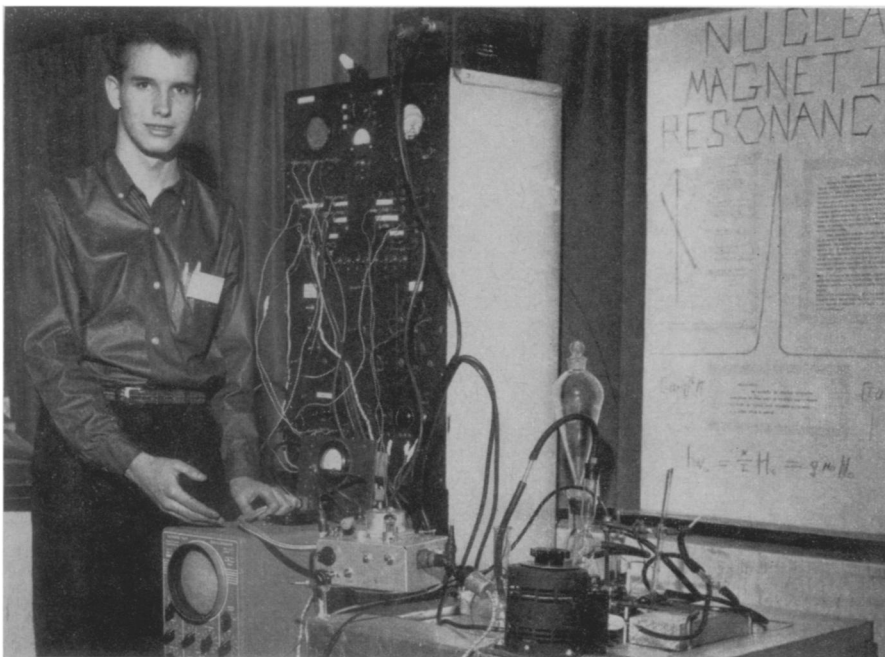
This was reported to the Virginia Academy of Science meeting in Roanoke, Va., by Antonia Bell Morgan of Aptitude Associates, Merrifield, Va. Mrs. Morgan reported results of giving the Morgan Test of Logical Reasoning to the top 40 STS winners in the years 1957 and 1958. The mean score of the 80 high school seniors was 40.1.

Tests of other high school seniors resulted in a mean score of only 16.5 for Swarthmore High School in Pennsylvania and only 7.7 for a high school in northern Virginia.

College graduates with a bachelor's degree had a mean score of 28.6. Those with a master's degree had a mean of 30.5. Those with a bachelor's degree or better, plus training in logic, made 29.6. Engineers with a bachelor's degree made 25.8; lawyers with a bachelor's degree, 27.3; and executive potential trainees, 35.4.

Only in the case of the executive potential trainees was the superiority of the Science Talent Search winners not sufficiently great to be statistically significant.

Science News Letter, May 24, 1958



VERNE DE HULCE—Learning about nuclear magnetic resonance using a spectroscope helped Verne to win top honors at the Fair.

A new eyeglass hearing aid operates on free power from ordinary sunlight.