

GENERAL SCIENCE

Youth Explores Space Age

MAYBE YOU were born too late to look forward to exploring the future predicted by space-age scientists. But you could have traveled a long way into those hidden frontiers by walking, slowly and thoughtfully, through the aisles at the National Science Fair-International at Butler University Field-house in Indianapolis on May 11.

The scientific world's newest ideas and problems were prominent among 370 top level projects exhibited by teen-age finalists representing nearly 200 large regional and area science fairs. These creative and knowledgeable young people were sophomores, juniors and seniors in high schools all over the United States, and in Canada, Japan, Thailand, and the Army Dependents Schools in Europe.

In return for an hour or two of examining colorfully dramatic exhibits and talking to the young people, who constructed these demonstrations of their work, you would have left the National Science Fair with a feeling of having experienced tomorrow—or the next century.

A complete system worked out by David J. Wilson, Jr., 18, of Alabama, permits survival of animals on another planet. John M. Crowell, 17, also from Alabama, exhibited his telemetering system for an earth satellite, while a comparison of three methods of astrophotography on the moon was shown by Harry Crawford, Jr., 16, of Texas.

William P. Cargile, 18, of Alabama exhibited a digital method of unscrambling codes, and a computer designed to translate English, Latin and Russian was demonstrated by Anthony J. Perrella, 17, of Wyoming.

An 18-year-old from Michigan, Philip C. Bockman, explained an improved prosthetic tendon he devised from stainless steel and plastic sponge. Another 18-year-old, David H. Chen, from Maryland, told about his extensive work with the juvenile hormones that may prove so important in prolonging vigorous life.

Several finalists have been investigating experimental methods of protecting against and treating exposure to radiation. The use of sound waves as anesthesia has been studied by James L. Snyder, 17, of Indiana. The production and uses of thermoelectricity, and the development of a new silicone material, two other examples of interesting projects, were presented by David C. Adams, 18, of South Carolina and David C. Hill of Michigan.

A high school senior from Minnesota, Willis B. Hammond, Jr., said that the foul smell of the juice from pea vines he stacked one summer inspired him to do a chromatographic analysis of the liquid.

These, of course, are just a sample of the hundreds of projects seen by thousands of visitors to the Fair. Science clubs and classes, entire schools, educators, scientists, writers, photographers, and the general public enjoyed this preview of tomorrow and its scientists.

The National Science Fair-International is an activity of SCIENCE SERVICE of Washington, D. C. Arrangements for the Fair at Indianapolis were made by a local committee under the chairmanship of Dr. Karl Kaufman, dean of the College of Pharmacy at Butler University.

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Science Fairs Commended

COMMENDING the effectiveness of science fairs and clubs, Dr. T. Keith Glennan, administrator of the National Aeronautics and Space Administration, issued the following statement in connection with the 11th National Science Fair-International.

METEOROLOGY

Ice Nuclei From Ocean

WIDESPREAD RAINFALL often results when large amounts of sub-microscopic particles called ice nuclei are present in the air, Dwight B. Kline of the U. S. Weather Bureau has discovered.

He said one of the major mysteries in cloud physics is the origin of ice nuclei. The most common explanation is that they come from soil dust or volcanic ash dust. Both have siliceous material which is active as ice nuclei.

However, Mr. Kline said that his information points to another possible source: the ocean. A series of ice nuclei measurements over a year and a half in the Washington, D. C., area showed a close connection between large amounts of ice nuclei and air masses that moved in from the ocean.

Laboratory tests confirmed that bubbling action at the surface of the ocean water could release an abundance of ice nuclei into the atmosphere.

SOCIOLOGY

Underprivileged Teens

A SURVEY of teen-agers living in an underprivileged neighborhood shows the young people hold values only slightly different from children in a more privileged community.

Dr. Catherine Urell, a research associate with the Bureau of Educational Research of the Board of Education in New York, reports the underprivileged teen-agers seek a life as average, respected citizens with a steady income.

The survey found the low-income teen-agers most wanted to be "good," "obedient" and "respected" citizens. Their second highest ideal was to be kind and understanding and helpful to others.

Seventeen percent of the underprivileged wanted a professional career. Forty-five percent of the more privileged children had a professional goal.

"Science clubs and science fairs are an essential part of the nationwide effort to upgrade the study and understanding of all the sciences and their important role in this space era.

"Through these activities students of all ages are given a unique opportunity to become personally involved in the challenge and reward of the sciences and future careers in these disciplines.

"The leadership of Science Service, through its science youth program, merits particular mention. This program has made it possible for hundreds of national and local organizations to give valuable support to developing a new generation of American scientists, engineers, technologists, and well-informed citizens."

The National Science Fair-International, which is conducted annually by Science Service as an activity of its science youth program, was held this year in Indianapolis, May 11-14.

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He explained that ice nuclei have the property of converting sub-cooled cloud droplets into ice crystals. Ice crystals grow at the expense of surrounding water droplets in clouds. As they grow, rain is released.

The siliceous material in the ice nuclei could come from sea salt, to which it might be attached, or be suspended in the sea water as well as from land sources.

Mr. Kline said also that on Jan. 15, 1960, high concentrations of ice nuclei were found in five locations at the same time. This suggests the possibility that there may be other sources of ice nuclei than those earlier advanced.

For the study, ice nuclei were "grown" in cloud chambers in a super-cooled sugar solution until they reached visible size. Mr. Kline was in charge of the instrumentation for the study.

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The underprivileged children said they wanted respectability twice as often as a test group from a better neighborhood. Dr. Urell believes children from higher income families probably take respectability for granted.

A large number of the underprivileged named entertainers as their ideals of successful persons, but more than three times as many named parents, teachers, adult relatives and community leaders. Fewer teens from the privileged group named family members as ideals. More named teachers.

Thus, Dr. Urell concludes in the Teachers College Record, a professional journal of Columbia University's Teachers College, that the attitudes of the underprivileged children represent the values and goals of most ethical societies.

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