GENERAL SCIENCE

Today's Scientists of Tomorrow

High school science clubs, local and regional science fairs are providing a vast reservoir for alleviating the scientific manpower shortage.

➤ HOPE for the solution of the serious scientific manpower shortage is seen today in the flourishing high school science clubs throughout the nation.

With the new school year under way, there are nearly 16,000 science clubs in operation with a membership of more than a third of a million.

Local and regional science fairs evolve from these high school science clubs. The climax of this scientific activity of American youth comes with the Eighth National Science Fair to be held May 9-11 next year in Los Angeles.

The science fair movement is one of the fastest growing educational programs in the nation. It is being supported enthusiastically by industry, colleges, scientific societies, newspapers and other mass-communication media, and the general public.

During the 1955-56 high school season, more than 1,500,000 people saw some 187,000 science fair exhibits by elementary and high school pupils. More than 30,000 of these exhibits were shown the last school term at the 110 regional science fairs affiliated with the National Science Fair.

Watson Davis, director of SCIENCE SERVICE, which administers Science Clubs of America and the National Science Fair, pointed out that, since the inception of the National Science Fair in 1950, the program has grown so fast its influence is now nation-wide. He said:

"More than 76% of National Science Fair exhibitors, who are not still in high school, have taken advanced education to train for science and technical careers, according to a survey by SCIENCE SERVICE.

"Surveys have shown that only about half of the students who finish high school in the top 20% of their classes go to college.

"This comparison indicates that science fairs are finding those who pursue higher education and who are most likely to become the scientists of tomorrow."

Show Democracy in Action

Science fairs are an example of democracy in action. Boys and girls regardless of their background are being encouraged to further their activity in the sciences. New ideas are sought out and acclaimed publicly.

Such was not always the case. In the days of Galileo and Copernicus, those with new ideas were considered heretics. They were often persecuted. Columbus was ridiculed when he insisted the earth was round.

However, this is an era of change. With the obtaining of power from the atom, hitherto unknown possibilities have sprung into probabilities and actualities. An atomic-powered submarine has been successfully pioneered. Power plants of the future will be run with atomic energy.

Most conscious and excited about this scientific progress are the boys and girls affiliated directly or indirectly with Science Clubs of America. Science teachers report there are students in all grades who are anxious to pioneer. The fact that others, somewhat older, may have preceded them in exploring new scientific fields does not act as a deterrent, but rather as an incentive. Creative imagination is evident everywhere as students plan and make exhibits for science fairs.

A science fair is a collection of exhibits, each of which is designated to show a biological, chemical, physical or technical principle. In most cases the fair director is a high school science instructor or a college professor, but in a few cases the director is the promotion manager of a sponsoring newspaper.

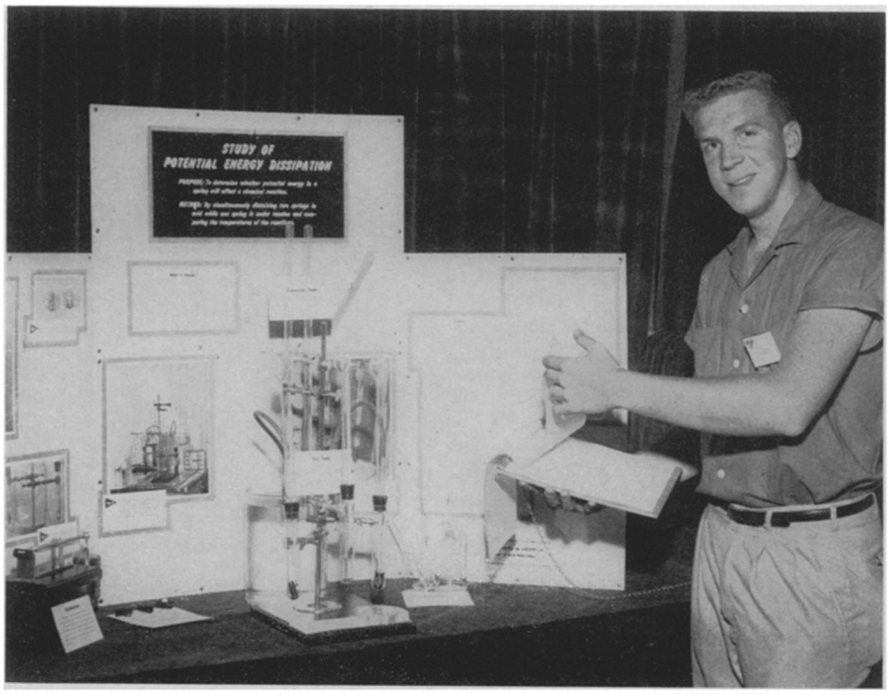
A typical report is from the Delaware County Science Fair, sponsored by the *Philadelphia Inquirer*. Like many others, this fair has become so successful it has become necessary to limit the number of entries. The participating schools are being urged to increase the standards of their students' exhibits by holding elimination fairs within individual schools. Ths policy resulted in a reduction of exhibits to 381 in 1956 from 487 in 1955.

Very Young Participate

A breakdown of these exhibits shows there were 111 from grades 10, 11, 12. From grades 7, 8 and 9 there were 121. From grades 4, 5 and 6 there were 109. And there were 15 exhibits from the kindergarten through the third grade. Twenty-five group projects, not eligible for the National Science Fair, brought the total to 381.

These figures indicate the interest in science for the very young is not unusual, while the interest of those in the elementary schools is becoming increasingly important.

For young boys and girls, science starts out as being merely fun. As they grow older and move into the last two or three years of high school, science takes on a more serious aspect. These are some of the reasons why:



***YOUNG SCIENTIST**—Loren Cameron Mosher, 17, Phoenix, Ariz., is one of the top scientists among the 187,000 youths who did projects for science fairs preliminary to the National Science Fair last May in Oklahoma City. There he was one of the four national first-award winners. His exhibit showed that energy in a coiled spring gave out more heat than an uncoiled spring when both were dissolved in acid.*

1. A chance to prepare for life work.
2. An opportunity for keen competition.
3. A chance to meet other young people with similar interests.

Many of the fair participants start working in their chosen fields before finishing their education. Many employers are anxious to have the services of students while they are completing their education.

This past summer many science students, following their high school graduation and before entering college, took jobs at such places as the National Bureau of Standards and the National Institutes of Health in Washington; the U. S. Naval Ordnance Laboratory at White Oak, Md.; U. S. Department of Agriculture Research Center at Beltsville, Md.; the Mayo Clinic at Rochester, Minn., and the Westinghouse Research Laboratory at Pittsburgh, Pa. Others spent at least part of their vacation in study preparing for the college term.

Here then is a story of democracy in action.

Scientifically inclined youths, regardless of their station in life, get help from many quarters in the competition to become the scientists of tomorrow.

Scholarships Often Awarded

Scholarships are often awarded winners at the science fairs. It has been particularly notable that not only those interested in science, but also those interested in civic betterment acclaim the regional fair participants.

At the National Science Fair creative ability and scientific thought, each worth 30 points, are the main factors the judges look for in determining the winners. Other factors, each worth 10 points, are thoroughness, skill, clarity and dramatic presentation.

In addition to an all-expense trip to the national fair, each competitor receives a medal for being a finalist and shares an opportunity of receiving one of the 60 awards, ranging in value from $25 to $125.

Each participant realizes, however, that his greatest reward comes from the satisfaction of completing a self-assigned task and bringing honor to himself, his school and others who have encouraged him.

A rare educational and entertainment feast awaits the winners, two from each regional fair, who will be selected as finalists to the Eighth National Science Fair in Los Angeles next May.

Facilities of the California Institute of Technology, the University of California at Los Angeles and the University of Southern California will be at the disposal of the visitors.

Trips will be made to such places of interest as the La Brea Tar Pits, the Arboretum, the Marineland of the Pacific, aviation plants and other industries. Walt Disney is preparing a special movie for the National Science Fair official party giving behind-the-scenes views of filming wild life.

Science News Letter, October 13, 1956