

## GENERAL SCIENCE

# Awards Given at Fairs

TWO HIGH SCHOOL BOYS—one from West Hartford, Conn., and the other from Lafayette, Ind.—each won three top awards from the Army, Navy and Air Force at the National Science Fair-International in Indianapolis, Ind.

The three services independently picked James K. Bramblett, 17, of Jefferson High School, Lafayette, and Donald F. Carpenter, 16, of William Hall High School, West Hartford.

Bramblett's three awards were for an exhibition of an ultraviolet flying spot microscope. Carpenter's were for an exhibit on aerodynamics and thermodynamics of a counterflow vortex tube.

The Navy's award includes a cruise and a gift of binoculars to the two boys and these other top winners: Harry C. Brown Jr., 16, of Clinton, Miss.; Roman S. Ohnemus, 17, of Tallahassee, Fla.; Duval S. Bell, 16, of Albuquerque, N. M.; John M. Cone Jr., 16, of Anniston, Ala.; and Carlos Ramirez, 15, of Mayaguez, P. R.

The Army awarded trips to rocket facilities at Huntsville, Ala., to Bramblett and Carpenter.

The Army also awarded trips to various bases and laboratories to Joe E. Candy Jr., 17, of Alva, Okla.; Philip C. Bockman, 18, of Grand Rapids, Mich.; Donald C. Shapero,

18, of Palo Alto, Calif.; Michael L. Lowe, 16, of Dickinson, Tex.; Marvin K. Hutt, 16, of New York, and John M. Cone Jr., who had also won the Navy award.

The U. S. Air Force and Air Force Association awards went to Bramblett and Carpenter and to Gerald G. Birdwell, 18, of Eagle Lake, Tex.; Larry R. Owen, 18, of Nixa, Mo.; and Barbara Jane Dymond, 16, of Fleetville, Pa., the only girl among the top military winners.

Several other major awards were presented to some of the 356 finalists from all over the United States and from several other countries. The American Medical Association presented its top awards to Brenda W. Lisle, 16, of Chattanooga, Tenn., and to Philip C. Bockman, 18, of Grand Rapids, Mich.

The American Dental Association made its top awards to Sheila M. Most, 15, of Gulfport, Fla., and Donald F. Kearney, 17, of Warwick, R. I.

The American Veterinary Medical Association gave its top award to Robert D. Towe, 17, of Bozeman, Mont., and the American Pharmaceutical Association's top award went to Eugene L. Diveglia Jr., 17, of Harrisburg, Pa.

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# Man Seeks Improvement

**The demand for better instruments, ceramics, fuel and more efficient communication means a continued need for scientists. Physics, chemistry and mathematics are vital.**

By DR. PAUL A. SIPLE

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*Excerpts from an address given at the awards banquet of the National Science Fair-International in Indianapolis, May 13.*

MAN IS DESIROUS of improving his mobility. He wants to transfer his location faster over the ground, through water, and in the air, and also safer, cheaper, and more comfortably. To accomplish this there is a continual desire for stronger, lighter, and more heat-resistant metals and ceramics. Chemists will be urged to find better fuels, lubricants, and batteries. There will be need for better instruments to aid and control navigation and guidance. Medical doctors, physiologists, and psychologists will be called upon to improve the human engineering of the vehicles and the health of the travelers moving swiftly from one environment to another. Scientists and engineers, inclined toward community planning, road building, and airport construction, will find continuing challenges as will the inventors and design engineers, working on the new transportation devices.

Equally important to man's desire for

mobility is his requirement for swifter and more reliable communications. He will not be satisfied until he has available a lightweight device to be carried on his person which permits audible and visual communication with anyone he desires no matter if they are located on the opposite side of the world or high above it in space. The scientists of tomorrow will find a demand for their services—solid-state physicists, improving transistors, or the electronics specialists improving thermionics and ion and electron controls. The goals are clearly defined for communications—lighter, smaller, greater range, lower power, simplicity, and abundance.

Despite the increasing availability of power and energy, there will be a continual increasing desire for more. There is challenge aplenty for scientists to develop new and better ways of transferring energy states. That is, reducing the high atomic energies downward and the lower abundant solar and internal earth energies upward to more easily usable levels.

The continuing demand for mathematicians and computer specialists to work out the problems posed by scientists in every field will not soon abate.

The chemists have perhaps the most exciting challenge at the moment. Theirs will be the task of learning practical ways of assembling the basic elements into desired compounds at will. For example, what I refer to as the COHN project visualizes synthesizing the elements of carbon, oxygen, hydrogen, and nitrogen into materials of our daily needs. Virtually all of our food, fuel, and even much of our clothing and shelter are made up of these four elements. They are in unlimited abundance over the earth. Nature makes them into our food, fuel, and materials for us, but scientists of the future will learn how to do it readily and there will be no shortage of our basic living requirements. You who are interested in biochemistry may be the ones who will unlock this great secret of nature.

Naturally, man's desire for freedom from disease, swift repair from injury, a longer life span, better and more abundant foods, and greater and more effective use of his brain power, will occupy the biologists and life scientists for generations to come.

As I mentioned earlier, man's environment has always been a principal subject for the quest of new scientific knowledge. The recent International Geophysical Year gave a strong push to the door through which man has studied the earth and outer space. We are on the threshold of a vast new world into which the students of the earth sciences, biology, and astronomy can select at random new challenges of great importance to man's knowledge.

During the period you have been in high school the field of meteorology has advanced more than in all past history. The relationships of the upper atmosphere to the portion we live in is still to be worked out. The new weather satellites of your generation will develop world-wide forecasting far more accurate than we have enjoyed to date.

Oceanography efforts in this country are about to be increased and many young scientists will find a part in exploring the earth submerged in an environment of water rather than air. The resources of the seas, both biological and mineral, will add grossly to man's material wealth. Mining on the ocean bottom for rare minerals will soon be in man's grasp.

Geology is still a young science and requires fundamental advances to untangle the earth's long history. Some of you may make these great discoveries. The quest to drill deep into the earth to answer riddles about the nature of the core of the earth will be an achievement of your generation. The seismologists must delve even deeper than the Moho drill hole.

The ionosphere physicists have their work cut out for a generation or two ahead to link the relationships of the sun to our earth and outer atmosphere. The magneticians, cosmic ray specialists, auroral and meteor students have riddles to solve that require your help. The biologists have the challenge of discovering the secrets of life itself for they are far from being solved.

The astronomers have so vast a field that their exploration may never end, but the environment closer to us is not even near exhaustion of man's quest for understanding.

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