



# Public Understanding of Science

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Redding, (Calif.) Record-Searchlight

Most of those who see the two scenes depicted here will probably mumble to themselves "How awful." But how many of these readers of *Science* have been stirred to action by such scenes and have helped to prevent similar situations in their own community? And what of Mr. Average Citizen? If informed scientists are not generally stirred to action, can the scientifically uninformed adult citizen be expected to become interested, knowledgeable, and involved in problems of pollution, conservation, use of resources, and legislation relating to these and other problems which plague every corner of this country? Obviously there is a need for much more *public understanding of science* at all levels of the citizenry. But what is meant by public understanding of science?

In the United States, *public* means 125,000,000 adults. To bring understanding of science to the majority of this population, and that should be the goal, will require massive adult education.

*Science* could include the body of scientific knowledge which is now equivalent to several million books. And additions are being made at a fantastic rate. Because it is impossible for anyone to acquire but a small portion of this mass of information and concepts, what should *science* mean

for the adult citizen? There is much room for differences of opinion here, but most would probably agree that *science* should include an understanding of what scientists do when they "do science." Science is an activity involving about one million persons. The public should not only be aware of what these persons do but should recognize those situations in their own lives that involve science or a scientific approach.

That brings us to *understanding*. Since science is not just a collection of facts but is also what people do, citizens should have an understanding of science sufficient to help them in making decisions of all kinds during the course of daily living. Some of these decisions would, of course, be concerned with major national problems whose understanding could be approached in a rational informed manner. Understanding of science should be a part of each individual. If the understanding of science does not help citizens to make decisions and is not exhibited in their daily actions, then it is not an understanding at all.

One might well ask why it is that scientists, who possess this kind of understanding of science as exemplified by their daily activities and professional contributions, do not take more interest in scientific problems of na-

tional scope, magnitude, and importance. Apparently awareness of the national problems relating to science plus an understanding of science are not the total answer. By way of illustration, it is unlikely that any scientists who see the pictures on these pages will be stirred to do something about smoke from garbage dumps or water and air pollution, yet none of us wants skies filled with manmade haze or streams of foam. Then what is the cause of this apparent indifference, even among scientists?

E. G. Sherburne (director, Science Service, Washington, D.C.) will present specific suggestions for attacking this public indifference to national scientific problems at the coming meeting of the AAAS-affiliated academies of science, the Academy Conference. His talk (27 December), "The role of state and local academies of science in the public understanding of science," provides a focal point for much of the Academy Conference. Sherburne suggests that, although water pollution, conservation, and all the other problems are of national scope and importance, these are abstract and impersonal problems when viewed only at the national level. He suggests that each of these problems begins as a state or local problem, often even a very personal problem of one or a few in-



Federal Water Pollution Control Administration

dividuals. It is easy for all of us to be concerned about the smoke from that garbage dump in West Redding, California, but few if any of us are likely to try to put out the fire in West Redding. That is a problem for the citizens of West Redding, not you and me. Similarly, that polluted stream in Canton, North Carolina, should be cleaned up by the citizens of Canton. Perhaps if the citizens of Canton had a scientific understanding of this problem they could take rational action on it. Sherburne suggests how local and state academies of science can bring public understanding of, and hence interest in, specific problems relating to the citizens in a particular city or state. He will make specific proposals for action by state and local academies. Discussants at this important session will be Henry Eyring (University of Utah), John H. Melvin (Ohio Academy of Science), and J. Teague Self (University of Oklahoma).

Sherburne's proposals, and those of the discussants, for this new and important role of academies of science should also be of interest to AAAS members who are not members of academies. All state and local academies, and even AAAS itself, express concern in their constitutions for public understanding of science, but this professed obligation has been only mar-

ginally accepted in terms of their actions. The 47 academies affiliated with AAAS offer a large organization for nonpartisan action at local levels throughout the country. Sherburne stresses the importance of this nonpartisan aspect of the public understanding of science. He believes that there is no other comparable organization reaching most cities and states that could provide nonauthoritative and nonmanipulative aid to the public's understanding of science. Further, academies could provide much help and advice locally to those who are in need of an understanding of science as related to specific state and local problems.

Although no program can be dictated to the participants at the business meeting of the Academy Conference, one can hope that the representatives from local and state academies and the officers of the Academy Conference will be so influenced by the proposals of Sherburne and the discussants as to choose public understanding of science as a major new project. The Academy Conference, hopefully with the help of AAAS, could provide the needed leadership and guidance to local and state academies for a large-scale effort to bring understanding of science to the general public.

#### Other Sessions

In another session of the Academy Conference on 27 December, Robert E. Gordon (University of Notre Dame) will speak on "The role of academies of science in the field of scientific publications." Discussants will be Gordon H. Bixler (editor, *Chemical and Engineering News*, American Chemical Society), R. Hobart Ellis, Jr. (editor, *Physics Today*, American Institute of Physics), and Sylvia W. Rosen (Minnesota Academy of Science).

Also on 27 December, in the late afternoon, President-Elect Y. E. Anderson will speak on "Publications and academies of science." President of the Academy Conference James A. Rutledge will speak that evening on "The requisites of a strong academy."

The American Junior Academy of Science will present programs during the morning and afternoon of 28 December. The Twentieth Annual Junior Scientists Assembly will meet concurrently with the Academy Conference, and the Washington Junior Academy of Sciences will hold its annual Christmas Convention as part of the Junior Scientists Assembly.

Appropriately, the program of the Academy Conference is being cosponsored by AAAS Section T—Information and Communication.—E. KURTZ