

Presentation of Howland Award to Dr. Albert Sabin, May 1, 1974

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In presenting an award one is often subjected to an unusual set of constraints when asked to summarize the contributions of an outstanding physician to medical science, public health, or a specified area such as pediatrics. Honorees are clearly not equal when measured by their impact upon our understanding of disease processes or our ability to control or prevent illnesses of major public health importance. Since the time allowed for the presentation of an award is fairly well standardized, *i.e.*, 20-30 min, there are occasions when the achievements of the honoree must be magnified or expanded to last through the prescribed period of praise. I can assure you this has not been the case for the distinguished pediatricians previously given the Howland Award and it certainly does not apply to Dr. Albert Sabin. Indeed, a reverse type of constraint is in operation today since it would be impossible to list even a brief account of each area of research he has illuminated in the time available, apart from enumerating the civic and scholastic honors already bestowed upon him. Therefore, I will attempt an appreciation rather than a complete summary of his achievements.

Children, mothers and pediatricians are fortunate indeed that Albert Sabin chose a career in the medical sciences. When he was a young man deciding on a course of study the senior members of his family met in council and agreed that his obvious calling was the law. At that time he had the charisma of a trial lawyer and this, coupled with his meticulous concern for accuracy both of word and fact, might easily have produced a series of contributions benefiting society in a quite different and extraordinary manner. It is likely that a consideration of possible careers at that time also took into account his prowess in declamation. This talent might have made him the rival of John Gielgud or Lawrence Olivier if he had chosen the stage for his career. His talent for drama was not allowed to atrophy, however. Albert Sabin's spellbinding lectures have stirred medical students and young doctors throughout the world and have served as a powerful magnet to attract young physicians to a career in research and academic medicine.

I do not know who stirred our honoree in his earliest longing for a career in medical research but I suspect that Albert Sabin did not require much external stimulation before setting his course. Subsequently, most of the fuel for his meteoric ascent into the front rank of medical scientists came from within himself. Clearly, he is an inner-driven man whose strongest motivations stem from personal conviction and personal need. These inner fires have provided a great source of strength and have minimized the pressures which force others to follow cyclical fads in research.

Albert Sabin did not serve the usual scientific apprenticeship. In a sense he sprang forth as a fully mature investigator while still in medical school. As a student he developed a technique for rapid identification of pneumococcal serotype which was widely used in hospital laboratories until the era of

effective chemotherapy. Shortly after this important contribution he isolated and characterized B virus, a simian herpes virus which produces fatal central nervous system disease in man. After internship he was awarded a fellowship to the Lister Institute in London and it was here that he performed a series of classic studies in which the basic properties of B virus were described and its relation to herpes virus of man established.

Returning to the United States after his National Research Council fellowship at the Lister Institute, he joined the staff of the Rockefeller Institute, where he began his long term siege of that important infectious disease, poliomyelitis. His energetic attack on this major public health problem continued over the next 30 years until the disease was effectively eradicated. Most of his significant research in poliomyelitis was performed during his tenure as Distinguished Service Professor of Research Pediatrics at the University of Cincinnati College of Medicine which he joined in 1939. During this period he pursued an inexorable course, probing, thrusting, withdrawing only when his scientific radar told him his plan of attack was not amenable to experimental study at that time. He could not be diverted, however, from his main goal, which was the control or prevention of poliomyelitis. A thousand interesting ancillary opportunities presented themselves during the 30-year period, but Albert Sabin resisted the temptation to be distracted. His aim remained firmly fixed on the primary goal of disease prevention. In the laboratory he has been and continues to be a human missile, self-guided, always directly on target. He has been able to move forward in an unerring fashion because he has asked the proper questions and formulated his research objectives in a most clear and precise manner.

Everyone in this audience knows well of Albert Sabin's brilliant success as a microbiologist, immunologist, and epidemiologist. However, those who do not know him well will be surprised to learn that he has used rather simple laboratory methods in achieving these successes. Unlike many of his contemporaries who became fascinated, even obsessed with more and more complex laboratory methodology and with artificial systems of infection, Albert Sabin maintained his primary focus upon naturally occurring phenomena of human infection and chose to investigate these phenomena by the simplest means possible. In essence, he has used simple methods to unravel the secrets of complex biologic occurrences. His great strength derives from his ability to resolve a research problem into a series of clearly formulated questions and to attack each question with precision and simplicity. I can assure you that when Albert Sabin is moving upon a research objective there is little wasted motion and most of the data which are generated can be interpreted. He moves like a master fencer assiduously avoiding the shotgun approach favored by so many others.

He has not had a large group of scientific associates because he has insisted on performing most of the critical laboratory

work with his own hands. As a result, the enormous product of his labors can be trusted as valid observations from which others can proceed without need for verification. This is one of the highest tributes which can be paid to a scientist. As an example of his personal involvement during the poliomyelitis investigations, he inoculated each of the thousands of monkeys studied and evaluated their clinical status each and every day. Further, he evaluated in meticulous detail the many histologic slides prepared from the brain and spinal cord of each monkey. When tissue cultures came into routine use in the poliomyelitis studies, he evaluated almost all of the critical cultures himself. Similarly, he performed the genetic manipulations involved in cloning the candidate poliovirus vaccine strains and personally characterized the plaque properties of these viruses under different experimental conditions.

At times when rapid progress could not be made in poliomyelitis he turned to other areas of research. In each of these areas his contributions rivaled those in poliomyelitis. A listing of these achievements would include: (1) one of the earliest and most elegant demonstrations of the pathogenic effects of murine mycoplasmas on the central nervous system and the joints of the mouse; (2) basic description of the mode of spread and pathogenesis of several of the important arthropod-borne viruses; (3) the first recovery of the dengue viruses and a description of their basic virologic and immunologic properties; (4) the same regarding sandfly fever viruses; (5) hemagglutination of group A and group B arboviruses; (6) pioneering studies in which much of the basic epidemiology of toxoplasma infection in man was first described; (7) the first description of the genetic basis for

resistance and susceptibility to group B arbovirus infection in an inbred strain of mice, etc., etc.

Apart from personal research contributions he has had a powerful impact upon the scientific community in his capacity as medical statesman and consultant. His council and judgment have been avidly sought by different branches of the government and by many foreign countries as well. At scientific meetings and in committee he has been extraordinarily effective in evaluating the work of his colleagues. The quickness, precision and accuracy of his comments at meetings or in committee are clearly astounding. On occasion at a symposium or conference he has risen to point out flaws in interpretation of data before the projectionist had completed placement of the slide in the projector. Praise from Albert Sabin represents one of the highest levels of approbation to which a young biomedical scientist can aspire. On the other hand, Albert Sabin has a strong belief that there is no place in science for incompetence and when he detects imperfection in experimental design or fallacy in interpretation of data he responds with rapidity and incisiveness. This is not a talent calculated to endear one to his peers, but it represents an essential function in the progress of science and we can all be thankful that Albert Sabin has been so active in maintaining biomedical science on a forward course.

I am certain all will agree that we are honoring a man who is a towering presence in our midst, an extraordinary seeker of truth about the human condition. Long may Albert Sabin soar at the outer limits of discovery in that highly rarified atmosphere which he and very few others can ever aspire to attain.

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Acceptance of The Howland Award

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First of all I want to thank Dr. Chanock for his very generous presentation. One of the sources of gratification in my life is that I had the privilege of providing the facilities in which Bob Chanock began his illustrious career in medical science. I would have much preferred to be standing here now reading the presentation of the Howland Award to him. In view of the age "requirements" for a Howland Award I hope to live long enough to have an opportunity to do it.

I am deeply grateful to the Council of the American Pediatric Society for having added my name to the list of distinguished pediatricians who received the Howland Award before me. Each in his or her own special way made a lasting contribution to the science of pediatrics and to the welfare of children everywhere. Although few, if any, would call me a pediatrician, I have at least this much in common with former recipients of the Howland Award: I also had friends on the council, I am superannuated by ancient standards, and I am

supposed to be at the end or close to the end of my career. However, after a little physical patching up which supplemented my myocardial blood supply 2 years ago, I now find myself working as hard as ever and am as impatient as ever about all the things that need to be done. Despite these "complicating" circumstances, I accept the Howland Award with the greatest of pleasure, because nothing is quite so gratifying to a scientist as the esteem of one's colleagues, because it does not drop like manna from heaven. You have to work hard and long to achieve it—and that is how it should be.

To illustrate this point, I hope you will forgive me a little immodesty contained in the following anecdote. At the 75th anniversary meeting of the Association of American Physicians in 1960, attended by almost 5,000 persons in Atlantic City, there was an unprecedented ovation after my presentation of a 10-min paper on a timely topic. When I returned to my seat next to my dear old friend, the late John R. Paul, he said to