

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

ALBERT B. SABIN

National Cancer Institute, National Institutes of Health, Bethesda, Maryland, USA

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

me: "Don't let it go to your head, Albert! They are not a very critical audience."

I should like to make a plea to the hundreds of young investigators in the audience. Both personal experience over about 45 years, as well as observation of others, had impressed on me the importance of concentrated effort on limited, highly significant objectives and of persistent study to a decisive endpoint. I see too many wasting their investigative energies on too many questions all at the same time on the principle that greatly diversified investment may increase the chances of success. I beg you to pick something that you, rightly or wrongly, regard as important, give it everything you have, and stick with it either to a frustrating, nonremunerative or highly gratifying and soul-stirring conclusion. Especially, if you think you have found something potentially very

important, do not leave it for someone else to work it out to a meaningful conclusion or to prove that you are wrong. I wish to pass on to you a statement or prayer of the successful English pirate, Sir Francis Drake, that was passed on to me by the late Dr. Stanhope Bayne-Jones. It is:

"Grant us to know that it is not the beginning but the continuing of the same until it is thoroughly finished that yieldeth the true glory."

In the search for knowledge nothing is ever quite finished, but it is a great personal gratification, and also a great service to science, to contribute a good, small piece of the action that can become a part of the larger piece that really constitutes the true glory.