Japanese Chemical Society and the Japanese Foundation for Cancer Research.

He led an arduous life as an investigator, administrator, and writer. During his career he published about 300 scientific papers in addition to the books referred to above. In all of these enterprises he took a constant and active part in every piece of research that was published under his name and was personally responsible for writing all of the papers to which his name was attached. His hours of work were long. After dinner at home he would, several times each week, return to the laboratory quite early in the evening, where he could write or experiment uninterruptedly until one or two o'clock in the morning. Yet with all of this activity he was accessible, friendly, and relaxed when anyone came to see him and talk things over with him. During the last three years of his life he had become a boating enthusiast; starting originally with a small outboard motor, he had purchased in 1958 a 22-foot cabin cruiser and had received several certificates from the Washington Area Power Squadron.

His interests were broad and ranged far beyond the sciences. He was always a prolific reader. In his Harvard days I can remember well his delight in Dickens, and especially in *Pickwick Papers*. He read widely in philosophy, theology, and biography and was something of an expert on the history of the Civil War —its battles, issues, and great men. Undoubtedly the breadth of his reading and his appreciation of literature had much to do with the high quality of his own writings.

Jesse Greenstein was outstanding in scientific skill, learning, energy, and devotion to his work. He inspired numerous young men, who came to work at the National Cancer Institute, with much of his own ardent enthusiasm for science. He was proud to be a servant of the United States Government, in a position of great responsibility, and his service went far beyond the allotted duties of his post. He was a loyal friend, whose wisdom and courage were a source of inspiration to his colleagues. His death leaves a gap that will be difficult to fill.

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# News of Science

## Views on Secrecy Given by American Nobel Prize Winners

Responding to a letter from Senator Thomas C. Hennings (D-Mo.), chairman of the Senate Constitutional Rights Subcommittee, 17 American Nobel Prize winners from various fields of science have given their views on the effect of security restrictions on the progress of science in the United States. Most of the scientists stated that their work was such that they had had little contact with classified information. With only one exception, however, they agreed that free exchange of information was the lifeblood of scientific progress and that restrictions of this flow were usually either foolish or destructive. A number of the scientists cited the experiences of colleagues to support their views on the security problem. Selman Waksman cited the case of a researcher who did not receive proper credit for his work because other researchers, free of security restrictions, had published before he was allowed to do so. One scientist, Walter H. Brattain, who was a prize winner in 1956, ended his letter with this admonition: "Don't kill the baby just to protect it from the kidnappers." Excerpts from some of the letters follow.

Dickinson W. Richards: "In a broad sense, however, every scientist suffers when there is any restriction, at any level, to the free exchange of knowledge. Except in so far as such restrictions are absolutely required by the exigencies of national defense, we believe that there should be no restrictions. We should like, for example, to have scientists from Russia and from China visit us freely and without hindrance, we should like to discuss with them problems of mutual interest, teach them and learn from them, we should like to have their young men come and live and work with us, and if there should be a sufficient opportunity for our young men to learn, to have them go and work there."

John Bardeen: "Rapid exchange of information has been vital to this progress. What is done in one laboratory today may depend on results obtained in another laboratory in a different part of the world only months before. For example, one of most exciting developments of the past three years was made by a physicist working in an industrial laboratory in Japan. His idea was soon taken up and is now being pursued by several laboratories in this country.

"With its very advanced technology, the United States is able to take best advantage of any new development in the field. The most important thing is to spare no effort so that our country remains in front and does not lag behind. We then have nothing to fear and everything to gain from free exchange of scientific information."

Walter H. Brattain: "Even more fundamental to this matter is the whole philosophy of our political system. It seems to me that it is based primarily on the premise that if our citizens are well informed they will, under our system, take the appropriate political action and come to the right decision. However, we now find ourselves in a very peculiar situation. Because of security restrictions that seemed quite justified in the atomic area, our nation is faced with very momentous decisions and since our citizens do not have access to the essential information, the basis on which our political system operates is undermined. All our citizens can do is to trust that those of our elected officials who do have access to this information will make the right decision. Does anybody want to argue that our founding fathers had any idea that the system they proposed would operate

properly very long under such conditions as these?"

Felix Bloch: "To quote a specific example in which I have first hand experience, I want to mention the circumstances under which I made the discovery of nuclear induction. My previous work had been in the field of atomic and nuclear physics and it was only my occupation with radar problems during the war which made me familiar with the, then, highly restricted information of radio techniques. The discovery consisted in the application of these techniques to some properties of atomic nuclei and could not have been made without the knowledge of both. It occurred to me only because I worked fortuitously in the one of the many small and separated compartments of war research which happened to contain the information which I needed."

Glenn T. Seaborg: "I think that if there is any conclusion upon which all scientists have complete agreement it is that exchange of information is vital for maximum progress and elimination of waste motion. Also, since, among human pursuits, science is almost unique in being immediately transferable across national boundaries, exchange of information must be considered on a global basis. As chairman of a committee of the United States Senate, you are properly concerned with the implications of free international exchange of information on our position as a nation. Contrary to what one might guess, it is the nation in which science is already flourishing that stands to gain greatly. The probability that a new idea or development in methods can be exploited in generating new ideas and developments is proportional to the number of receptive ears which hear about it and to the adequacy of facilities for doing something about it."

Edward C. Kendall: "The objective of all creative research is to enlarge the horizon which circumscribes the fund of knowledge in the world of science. The best situation in the best of possible worlds would be rapid dissemination of all new work. The information thus made available would, of itself, be a powerful stimulus. This would lead to a constantly increasing acceleration and would indeed be the tangible evidence of what Prof. Charles Beard has cited as the 'invention of invention.'

"As a dismal contrast one merely has to go to the other possible extreme. In such a world, investigators in all research laboratories and medical institutions would work behind locked doors. No results would be published, all workers would be isolated, all publicity by the association of science writers would be suppressed. Interest in science would decrease, the tempo and scale of research would slow down, a feeling of indifference and hopelessness would crush initiative, a moratorium on progress would ensue."

Percy W. Bridgman: "The scientist feels so strongly about this [freedom of communication] that I believe it may well be a decisive factor deterring a young man about to choose his career from entering a [field] subject to such restrictions. A manifestation of this same feeling is the decision of Harvard University, and of other universities also, not to engage in any work with government money under government contract which was not freely publishable. I myself have not had close connection with government work, but in one instance I was decisively influenced by considerations of this sort. At the close of the war I declined to continue work under government contract on a subject of some real scientific interest to me because I found association with the government, and in particular the probability of secrecy restrictions, too distasteful."

William P. Murphy: "It is my impression that the effect of restrictions on the free exchange of information on science developments is at least somewhat exaggerated and that it is actually rather minimal. Much of the complaint has come from a few physicists who are perhaps influenced by a more radical group who are more vocal in their objections because of their basic beliefs.

"It is my belief that restrictions should be continued and perhaps increased in those branches of science which are concerned with the sensitive areas of scientific development where restriction may be more important than would be the benefits which might be derived from the free dissemination of information."

## Bill to Spur Private Philanthropy Introduced in Senate

A Congressional move to stimulate private philanthropy for education has been strengthened by the introduction in the Senate of a companion bill to one introduced earlier this year in the House of Representatives. The Senate bill, S 2241, was entered 24 June by James Murray (D-Mont.). The earlier bill, HR 2440, was introduced 15 January by Representative Frank Thompson (D-N.J.). The two bills, which are identical, are designed to equalize the out-of-pocket costs, to individuals as well as corporations, of gifts to institutions of higher learning. Under the present laws it costs a wealthy man considerably less to give away a dollar than it does a man of moderate means. When a person with a taxable income of over $400,000 a year gives a dollar to philanthropy, 9 cents comes from his pocket and 91 cents from the tax that he would otherwise have had to pay. When a person with a taxable income of $5000 gives away a dollar, 80 cents comes from his pocket and 20 cents from his tax payment.

At this writing the Ways and Means Committee, to which Thompson's bill was referred, is waiting for reports on the measure from the departments of the Treasury and Health, Education, and Welfare. After these reports have been considered the committee will decide whether to send the bill to the House floor.

Murray's companion bill has been referred to the Senate's Finance Committee, chaired by Harry Byrd (D-Va.). There, as in the House, reports will be requested from the pertinent departments of the government, in this case probably the Budget Bureau and the Treasury. Beyond this, the Senate will probably do little more until the House acts, since the House alone has authority to initiate taxation and revenue-raising bills. Murray's action, however, is important because it gives the bill greater publicity and allows the Senate to become familiar with the provisions of Thompson's proposal. Also, with both chambers considering the measure, earlier action is possible.

## $53 Million Asked for 2-Year Seismic Research Program

*The Panel on Seismic Improvement, a subgroup of the President's Science Advisory Committee, recently submitted a detailed report on the need for fundamental research in seismology. The report consists of the panel's recommendations for a research program that would resolve many of the present uncertainties over detection and concealment of underground nuclear blasts. The panel points out that the program, which might be directed by the National Academy of Sciences, would greatly advance seismology. Excerpts from the report follow.*