LETTERS

Japan's Nuclear Bomb Project

Deborah Shapley's article on Japanese nuclear research during World War II (News and Comment, 13 Jan., p. 152) contains several misleading interpretations not supported by the historical evidence available at this time. Shapley writes of the "curtain of silence which the Japanese themselves seem to have pulled over the subject." Yet much of her story is based on translations of historical accounts published in Japan in 1953 and in the early 1970's, which I made available to *Science* at her request. These accounts were made available to me by Japanese historians and physicists, who also provided personal recollections and archival documents. They did so voluntarily in response to my 1974 article (*1*) on the development of nuclear physics in Japan in the 1930's and the destruction of the Japanese cyclotrons by occupation forces after the war. Until then, I was unaware of the Japanese wartime nuclear research projects; indeed, outside of Japan the subject was virtually absent from all of the published studies of the period. At that time, Yagi and Price told me about their 1962 letter (*2*) published in the United States which had asked for more information concerning a reference to the Japanese fission project published in Japan in 1951. That letter did not elicit any responses. I have just learned that in 1959 Arnold Kramish (*3*) cited a 1952 Japanese publication on the subject.

My subsequent study of the issue, which is now being prepared for publication, shows that, during the war, the United States investigated the possibility that Japan might produce a nuclear weapon. The finding was that it would not be possible. The same conclusion was reached by the Japanese physicists themselves. Japan never posed a nuclear threat against the United States, nor did the officials responsible for the decision to drop the bombs on Hiroshima and Nagasaki ever think that was the case. The military and political motives that were the basis of that fateful decision have been well documented by historians, especially by Martin Sherwin in his recent definitive study (*4*) based on previously unavailable documents. The criticism of that decision on humanitarian and ethical grounds should not (and, on the basis of the historical evidence, *cannot*) be dismissed by "arms race" or "technological imperative" explanations as quoted in Shapley's article or her conjecture that if the other side had one they "would not have hesitated to use the bomb against the United States." The consequences of such rationales should be apparent in this age of Mutually Assured Destruction (MAD) and the neutron bomb.

Shapley reports that the U.S. scientists who arrived in Japan just after the surrender found no evidence of a Japanese atomic bomb project, and that such information was neither revealed by Nishina nor vigorously sought by the Americans. However, the official U.S. scientific intelligence mission headed by Karl T. Compton did report that the Japanese had explored the applications of nuclear fission during the war and had not gotten very far. His recommendation that the Japanese be permitted to use their cyclotrons for projects in biology and medicine was approved by the occupation officials, and this policy was in effect when an order to destroy the cyclotrons was received from Washington in November 1945 (*5*). Karl Compton, Ernest Lawrence, Lee DuBridge, and Vannevar Bush, along with atomic scientists' organizations throughout the United States, vigorously protested the destruction. They correctly pointed out that cyclotrons were basic scientific research instruments and could not be used to make atomic bombs, that Japan did not have the necessary uranium, and that in any event all such research was forbidden and was under strict control by the occupation authorities. The historical evidence now available does not change this assessment, nor does it justify the order to destroy the cyclotrons, which Secretary of War Patterson acknowledged in December 1945 was a mistake (*6*).

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References and Notes

1. C. Weiner, in *Proceedings of the XIVth International Congress of the History of Science, 1974, No. 2* (Science Council of Japan, Tokyo, 1975), pp. 353–365.
2. E. Yagi Shizume and D. J. de Solla Price, *Bull. At. Sci.* **18**, 29 (1962).
3. A. Kramish, *Atomic Energy in the Soviet Union* (Stanford Univ. Press, Stanford, Calif., 1959).
4. M. J. Sherwin, *A World Destroyed: The Atomic Bomb and the Grand Alliance* (Knopf, New York, 1975; Vintage, New York, 1977). For documentation of the decision to drop the bombs on Hiroshima and Nagasaki, see p. 209 of the Knopf edition, and, for additional new data, p. 209 of the Vintage edition.
5. Nishina's published account of the event, written shortly after it occurred, is in basic agreement with other documentation from U.S. sources. See Y. Nishina, *Bull. At. Sci.* **3**, 145 (1947).
6. A. K. Smith, *A Peril and a Hope: The Scientist's Movement in America 1945–47* (Univ. of Chicago Press, Chicago, 1965), pp. 352–356; (*1*).