

## V. DINNER FORUM

### "We Turned the Switch"

BY LEO SZILARD

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ON MARCH 3, 1939, Dr. Walter Zinn and I, working on the seventh floor of the Pupin Building at Columbia University, completed a simple experiment to which we had been looking forward rather eagerly. Everything was ready, and all we had to do was to lean back, turn a switch, and watch the screen of a television tube. If flashes of light appeared on the screen, it would mean that neutrons were emitted in the fission of uranium, and that in turn would mean that the liberation of atomic energy was possible in our lifetime. We turned the switch, we saw the flashes, we watched them for about ten minutes—and then we switched everything off and went home. That night I knew that the world was headed for sorrow.

From March, 1939 until October of the same year work in the field of atomic energy was carried on by a handful of men who lacked many of the things they needed and most of all official recognition. From October, 1939, to the end of 1941 we still lacked many things, but we suffered from too much official recognition. Our increasing anxiety about what the Germans might be doing made our slow speed all the more intolerable.

At the end of 1941 there was an important change for the better. This change came in the wake of a visit which Dr. Oliphant of Birmingham, England, paid to this country around the middle of the war. Dr. Oliphant attended one of the meetings of the Uranium Committee as a guest and was not very much impressed by the organization and official guidance of our work. Disregarding international etiquette, he told anyone who was willing to listen what he thought of us. Considerations other than military secrecy prevent me from repeating the exact expressions he used. But he got results.

After the reorganization of our work at the end of 1941 we were all happy for a while. Sometime during 1942 the army was brought into the picture, but the officers who were attached to us realized that they did not know what it was all about and did not make life difficult for us. Toward the end of 1942 and during the first half of 1943 all sorts of troubles developed, not all of them originating with the army. At that time it became evident to most of us that unless our organization could be changed quickly, we would have no bombs ready by the spring of 1944, when we expected the invasion of Europe to begin. We saw no way of bringing about a change without a major row, and we could not take the risk of losing thereby more time than we might gain.

During 1943 and part of 1944 our greatest worry was the possibility that Germany would perfect an atomic bomb before the invasion of Europe. I myself was firmly convinced that the Germans were ahead of us in this work. Today I know that I was wrong and that when the war ended the Germans had not reached the point from which we started when our work began in earnest.

In 1945, when we ceased worrying about what the Germans might do to us, we began to worry about what the government of the United States might do to other countries. Discussion of the subject started in Chicago in March of this year. There were those among us who thought that we should not set the precedent of using atomic energy for the purposes of destruction. About sixty of us at Chicago took the view that Japan was essentially defeated and that

it would be wrong to attack its cities with atomic bombs as if atomic bombs were simply another military weapon. Many atomic scientists at Oak Ridge took a similar view. The use of atomic bombs against Hiroshima and Nagasaki did not end but rather stimulated the discussion of this question.

The Dinner on December 3, celebrating *The Nation's* Eightieth Anniversary, concluded the forum. Leon Henderson, former head of the OPA, presided, and Mrs. Franklin D. Roosevelt made a brief extemporaneous speech. Another guest of honor, Dr. Urey, also spoke extemporaneously, and his remarks as published here are consequently much abbreviated. Dr. Evatt spoke by radio telephone from Los Angeles. The main speech of the evening, by Harold Laski, chairman of the British Labor Party, was printed in full last week.

For some four to six weeks after Hiroshima atomic scientists expressed no opinion on the political implications of the bomb, having been requested by the War Department to exercise the greatest possible reserve. Our response to this request does not mean that we were intimidated by the War Department. We kept silent because we all believed that Hiroshima was immediately followed by discussions between the United States, Great Britain, and Russia, as indeed it should have been, and we did not want to embarrass the President or the Secretary of State.

Then, early in October, in a visit to Washington, I happened to pick up a copy of the May-Johnson bill and brought it back with me to Chicago. We were somewhat alarmed when we read in the papers that hearings were held for one day before the House Military Affairs Committee and then closed down for good. Our alarm increased when on October 9 we discovered that the War Department's early requests to us to exercise discretion in our public utterances were not occasioned by any negotiations with other powers but by its desire to have the May-Johnson bill passed "without unnecessary discussions in Congress."

This caused the Atomic Scientists of Chicago to issue a manifesto calling for adequate hearings in Congress on the general issue involved before any bill on the domestic control of atomic energy should be passed. Our statement marked the beginning of the fight of the scientists against the May-Johnson bill, a fight which has so far not been lost.

Feeling the need for a better understanding of what was happening in Washington, I went there and stayed six weeks. These are my conclusions: The most hopeful aspect of the



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situation in Washington is the fact that the problem of controlling atomic energy has so far not become a political problem, that is, the essential difference is not between Democrats and Republicans or between progressives and conservatives but rather between those who understand what atomic bombs may mean and those who do not understand it. The most important task would therefore seem to be somehow to impart to everyone a realization of the essentially non-terrestrial nature of the atomic bomb.

I would like, therefore, to present tentatively the suggestion that the best way to put our foreign policy on a sound basis might consist in staging a demonstration of an atomic-bomb explosion for members of Congress, the President, and such other citizens as ought to witness it. Those of my friends who saw the tests in New Mexico on July 16 tell me how shaken they were by the experience. Most of them were ten miles or more away; if they had been nearer, the psychological effect would no doubt have been even greater. The risk which the statesmen would run individually by watching from a lesser distance appears to me small in comparison to the risk which we shall all incur collectively if we do not succeed in bringing home to them the non-terrestrial nature of the phenomenon.

Naturally, I am not really worried about the future, except perhaps the next fifteen years. If we manage to get through the next fifteen years, alive, we shall probably emerge immune to atomic bombs. It seems to me that the greatest danger facing us at present is the possibility of a war which would arise more or less automatically out of an arms race in which the United States and Russia built up stockpiles of atomic bombs.

Is it possible to avert this danger? Let us assume that the United States and Russia agreed to have no stockpiles of atomic bombs and to permit no manufacture of atomic bombs on their territory. Let us, moreover, assume for the sake of argument that they both reserve the right to abrogate this arrangement at any time. Could Russia and the United States, under present-day conditions, make arrangements through which they could convince each other, as well as other nations, that secret violations of the agreement would be detected and would become known to the world? My answer to this question is emphatically Yes. Clearly the arrangements would have to include the right of inspection on the part of some international agency.

If Russia and the United States wanted to reassure each other concerning secret violations, they might go about it in the following way: After the agreement is ratified and becomes the law of the land, the President of the United States could call on all American engineers and scientists and ask them to pledge themselves to report to an international agency all violations committed on the territory of the United States. The Espionage Act would have to be modified so that it would no longer cover information of a scientific or technical nature, whether or not relating to national defense. All men classed as scientists or engineers would be invited to spend each year four weeks' vacation or six weeks' if you wish, abroad with their families as guests of the United Nations Organization. The Russian government would be expected to take similar action with respect to its own scientists and engineers.

No arrangement of this sort, of course, could rule out the possibility of war, and in case of war, sooner or later, atomic bombs would drop from the skies. Yet under such an arrangement war would break out only if one of the parties actually decided to start an arms race and risk a war. It would give us a respite which would be worth having, provided we know how to make use of it for building a permanent peace.

## The Task Before Us

BY HAROLD C. UREY

*Atom-bomb scientist; winner of Nobel Prize*

THE year 1945 will go down in history as one of the most crucial, the most epoch-making of many centuries of the past. One can never speak about the future. Future history, in fact, may not last very long. It depends upon what we do with the very important period immediately before us. The point at which we have arrived in history, which is highlighted by the atomic bomb, is this: We have made technological warfare so dreadful that we cannot survive if we practice it. We have that choice to make. Do we wish to have this civilization, which has been built so laboriously for thousands of years, terminated at this point, or do we wish to see it go on? Do we wish to see our own race, evolved through almost endless time—hundreds of millions of years—terminated? Do we wish to go on with this sort of playing with very great fires and have a devastated earth?

These are things which I think can reasonably be expected to be ahead in the next decades if we wish to continue in this direction.

Of course, the problem first of all is how can we impress people with the seriousness of the situation. We need, first of all, to be thoroughly frightened. Of course, fright that leads to hysteria doesn't do us much good, but if we can channel a real good fright into the direction of constructive effort, great benefit may come from it.

As Dr. Szilard has said to you, we need to use equal imagination, equal courage in breaking with the past, in our experience in human affairs, that we have used in developing the atomic bomb. I think that it is possible to arouse the people of this country to the seriousness of the situation and induce them to think differently about the changed situation. Any solution that the scientific fraternity has been able to think of, or any one else has been able to suggest that I know of, involves some legal means of preventing war.

The essential problem of preventing war was considered by the founders of this country. Our own federal government was the result of these discussions. I should like to see the time come when the manufacture of atomic bombs and other weapons of war will be handled by a world organization such as counterfeiting is by our government. I believe this may happen sooner than we think. There should be laws against the manufacture of atomic and other weapons of war, and a police force to detect violations and arrest people (not states) who violate the law. There should be courts of justice to try those accused of violating the law. If guilty they should be imprisoned. I am convinced that only such a procedure will prevent war.