reviews

Human qualities and political realities

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Energy and Conflict: The Life and Times of Edward Teller. By S. A. Blumberg and G. Owens. Pp. xvii+492. (Putnam: New York, 1976.) \$9.95.

THE role of physics in society has been transformed out of all recognition during the past fifty years. The demonstration that at least some of the discoveries of modern physics have immediate relevance for problems of human society has led inevitably to many aspects of physics research becoming inextricably linked with politics. Those physicists who aspire successfully to lead the work in such fields need not only the conventional gifts that make a great scientist—curiosity, creative imagination, enthusiasm, deep insight, critical scepticism and so on—but also a wide understanding of human and social problems and of political realities. This book describes how one such physicist met the challenge.

Edward Teller is one of a remarkable group of Hungarian-born emigrés (including Eugene Wigner, John von Neumann and Leo Szilard) who made great contributions to the development of nuclear energy in the USA. Teller had shown remarkable aptitude for research in theoretical atomic and nuclear physics and in theoretical chemistry, and his original contributions in these fields are very considerable. Unfortunately he was much less successful in dealing with the political problems to which I have referred, with the result that he has become a controversial figure, forfeiting the respect and friendship of many of the physicists whose good opinion he valued most and rightly or wrongly establishing for himself the image of a rather sinister Professor Strangelove figure to large sections of the public.

This biography of Teller traces his career through his early days as a student and brilliant young research physicist in Budapest, Germany and Copenhagen, his emigration to the USA, his involvement with the early work in neutron physics, and nuclear fission; and, throughout World War II and afterwards, his single-minded commitment to the realisation of a thermonuclear weapon, the so called super-bomb. His campaign to secure agreement to a crash program to develop the hydrogen bomb brought him into

conflict with many of his scientific colleagues—especially Robert Oppenheimer, who had been in charge of the development of the wartime fission bomb at Los Alamos. Teller was given the green light to go ahead. In the cold war atmosphere of the time that produced the hysteria of McCarthyism, of which most of Teller's colleagues were thoroughly ashamed, Oppenheimer's opposition to the development of the hydrogen bomb was represented as something sinister, and Eisenhower ordered that Oppenheimer's security clearance should be subject to a hearing, as required by law, to show cause why it should not be rescinded. In the subsequent hearings before a specially constituted commission, Teller's evidence was decisive. The counsel for the Commission cross-examining Teller, put to him the key question "Do you or do you not believe that Dr Oppenheimer is a security risk?" Teller's reply included the damning words "I would like to see the vital interests of this country in hands which I understand better and therefore trust more".

This moment was a watershed in Teller's career. He has never been able to live it down. The Commission went on to remove Oppenheimer's clearance. Oppenheimer continued with his scientific work as Director of the Institute of Advanced Studies at Princeton. But he was a sensitive man and he never fully recovered from the ordeal through which he had had to pass.

Teller was given the opportunity to build up a new weapons laboratory at Livermore, California, in competition with the Los Alamos Laboratory, set up by Oppenheimer during the war, and was able to realise his ambition, which had become almost an obsession, to provide the US Army with its hydrogen bomb.

The story of the development of the hydrogen bomb is a fascinating one and both it, and the monumental clash between the personalities of Oppenheimer and Teller is well told. Both were equals as physicists but it would be hard to imagine two more different personalities. Oppenheimer was a man of great culture with very broad interests and understanding of social problems and their perspectives. Before the War he had identified the true nature of fascism and realised that only by building a popular front with all

forces opposed to it, including the communists, could it be fought and defeated.

Teller was much more limited in his understanding of the broader problems of society. His attitudes were no doubt conditioned by his background and education in Hungary and Germany as the son of a prosperous Jewish lawyer. His family suffered discrimination under the Bela Kun regime of 1919 on account of their bourgeois origins. They witnessed the rise of anti-Semitism in Hungary during the period of the Horthy regime, eventually culminating in the unspeakable excesses against the Jews of the Nazi Arrow Cross Movement. He emerged with a simplistic, uncritical equation of Communism with Nazism and an irrational hatred of the Soviet Union which has undoubtedly coloured his judgment. While Oppenheimer looked beyond the era of the cold war with its "peace by mutual terror" to an era of negotiation, détente and "peace through understanding" which would make the qualitative escalation of nuclear weapons unnecessary, Teller apparently saw and still sees only the need for weapons escalation unlimited.

This book has no doubt been originally conceived as an apologia for Teller, to try to do something to restore his image. Nevertheless it is by no means an uncritical eulogy, and brings out some of the weaknesses as well as the favourable qualities of its subject. It seems to deal objectively with the clash of personalities between Oppenheimer and Teller, the highpoint of the narrative. Teller emerges from the book as a warm and friendly man and, to his credit, with a sincere detestation of secrecy in science. Yet, in the opinion of the reviewer, such desirable personal qualities cannot balance out the great harm his uncompromising hawkish attitudes have done to the prospects of building a peaceful and secure future for mankind. He represents an example and a warning of a very talented scientist with many laudable and human qualities, whose lack of understanding of the social and political forces at work in our society has been a misfortune for himself and his colleagues. □

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