The Inexorable Atom

Atomic Shield, 1947/1952. Volume 2 of a History of the United States Atomic Energy Commission. RICHARD G. HEWLETT and FRANCIS DUNCAN. Pennsylvania State University Press, University Park, 1969. xviii + 718 pp. + plates. $11.95.

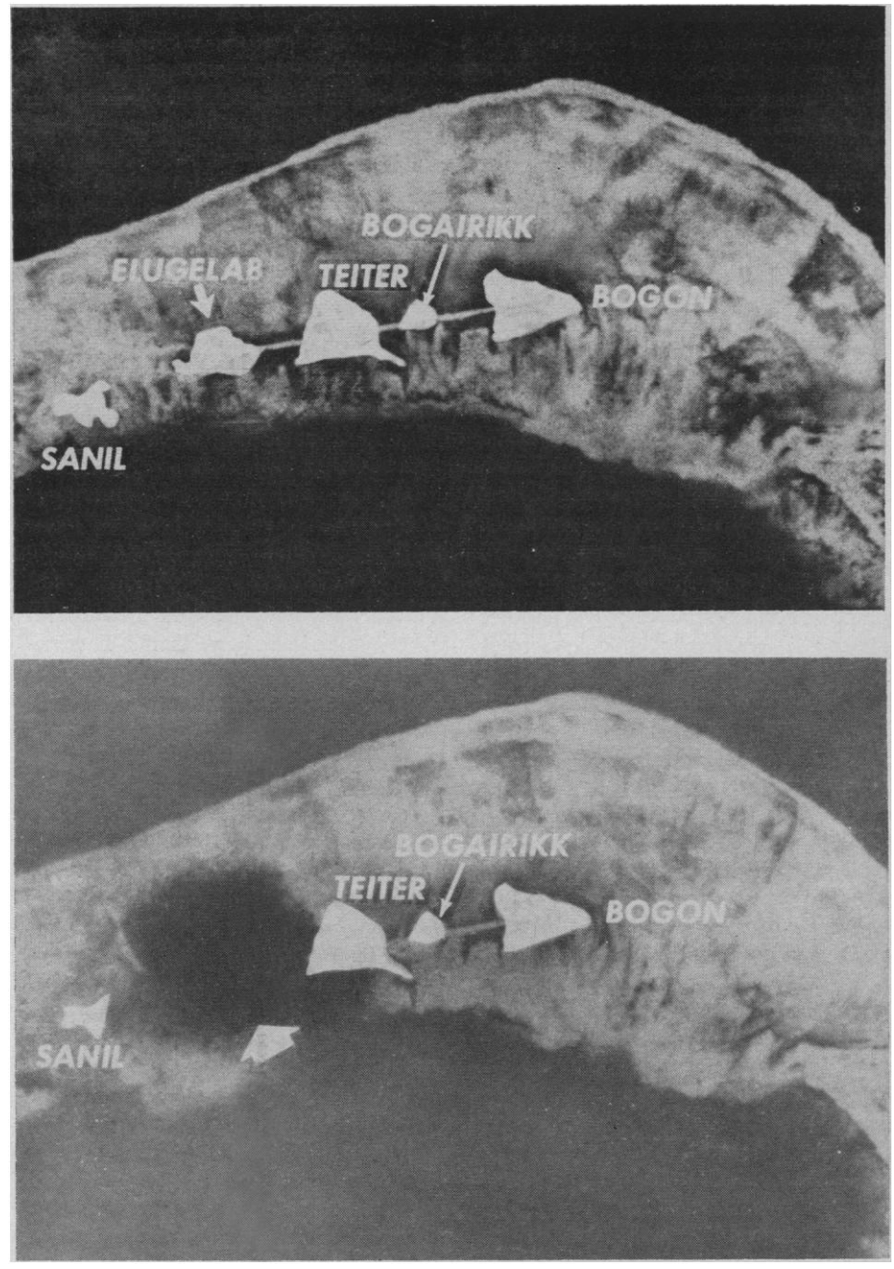
Perhaps this dismal time distorts the recollection and darkens the humor, but even if one allows for that, "Atomic Shroud" seems a more appropriate title for this volume than the one chosen by the authors. Reading their long and detailed history of the first six years of the Atomic Energy Commission (the preceding volume dealt with the events that led to its establishment) reveals little reason even in those days for the optimism inherent in the metaphor "atomic shield." J. Robert Oppenheimer said it well in a report to President Truman: "Atomic armament, which is now held to be the shield of the free world, may in a foreseeable time become the gravest threat to our welfare and security." Hewlett and Duncan note in their preface the hold the metaphor had on the men in their history:

> . . . we soon detected in the documents a strong undercurrent of development around which most of our material could be organized. This central idea was the inexorable shift in the Commission's aims from the idealistic, hopeful anticipation of the peaceful atom to the grim realization that for reasons of national security atomic energy would have to continue to bear the image of war. Hence our title, *Atomic Shield*, a phrase used by scientists, military leaders, and the Commissioners themselves to justify, or perhaps to rationalize, the nation's expanding nuclear arsenal.

The book is constructed around that "inexorable shift."

Hewlett, Chief Historian of the AEC and a member of its staff since 1952, and Duncan, his colleague there, have had "complete access to all records in the files of the Commission and its contractors." They have chosen to see their material from the point of view of some of the men they write about: "The central perspective of Volume II was clearly to be that of the five Commissioners . . . ." There is nothing unusual about this; historians try to see things as the people they study saw them, knowing of course that the results of their efforts can only be crude approximations. If in the attempt to get into the minds of other men, however, the historian gives up his own perspective and the obligation to analyze the thoughts and actions of his characters, he is doomed to be a chronicler creating thin narratives that reveal little about the human situation. In the end his work will be untrue to the lives and times of the people he considers and untrue to himself and his era. It is a delicate, perhaps impossible, balance the historian must strike between the perspectives of men in the past and his own.

In writing their book, an effort of six



The Eniwetok chain in the Pacific before and after the detonation of *Mike*, the first American thermonuclear device, on 31 October 1952. In the 10.4-megaton explosion Elugelab Island vanished, leaving a crater over a mile wide. [U.S. Air Force photographs reproduced in *Atomic Shield, 1947/1952*]

years, Hewlett and Duncan made an important decision that affects the nature of their work:

> Although we felt a temptation to adopt a topical and analytical approach, which several of our advisers urged upon us, we rejected this form of organization in favor of the narrative, chronological style of Volume I [Hewlett and Anderson, *The New World, 1939/1946*].

How do they justify that choice? They say,

> A string of loosely joined essays would have been easier to write, but we thought it our duty as historians to attempt a more fundamental synthesis.

That they have achieved a synthesis there can be no doubt. That it is "more fundamental" may be argued, but anyone interested in the development of the Atomic Energy Commission and the evolution of its policies, the early politics of atomic energy, the beginnings of the armaments race, government-industrial relations, or the role of scientists in public affairs will be indebted to the authors.

The book is not in fact a strictly chronological narrative, for many of the chapters have a central theme. For example, two chapters discuss the problems of administering the laboratories and facilities of the AEC; two others survey research in nuclear physics and radiobiology; two chapters deal with the breakdown of Anglo-American cooperation on atomic energy; another tells of the decision to build a thermonuclear bomb, and four others trace the implementation of that decision. So it is not topicality that the book lacks, but rather analysis of the several critical themes that run through most of the AEC's history. The themes weave in and out of the narrative, stare out from the quoted words of scientists and government officials, sleep uneasily between the lines. Hewlett and Duncan avoid grappling with them, however, choosing instead to float on the story like Huck Finn and Jim on the Mississippi, gliding by dark shores best left unvisited. One sympathizes with the authors, for what momentous themes they faced and how these haunt us still. Merely listing them is enough to shake any historian: the role of nuclear weapons in American foreign affairs; strategic bombing versus tactical warfare; secrecy in science; loyalty and security; scientists and policy making; military and industrial relations; personal morality and state demands; technology and democracy. These were the issues that troubled the men Hewlett and Duncan write about. Even a quick reading of the *Bulletin of the Atomic Scientists* for the years 1947–1952 reveals how much scientists worried over these matters. Many felt frustration at having failed to educate Congress and the public about the perils and needs of the nuclear age. They despaired over suggestions that the United States use nuclear weapons in an attempt to end the war in Korea or to launch a "preventive" war against the Soviet Union and China. They questioned the attention given to weapons development to the detriment of basic research. For scientists—and the rest of us—the seven years following World War II were a terrible experience. The high hope that they could help bring about the peaceful use of atomic energy through international cooperation was soon shattered by the realities of the Cold War. The atomic bomb became a keystone of American strategy, and military and Congressional leaders demanded more nuclear weapons. Scientists decried secrecy and called for the national debate of issues related to defense, but the debate never took place.

That many government officials and scientists thought it necessary to forge an atomic shield while others had doubts about the wisdom of that course is true enough. The historian needs to analyze these attitudes and the circumstances that generated them. This requires more than the quick sketches of the military situation abroad and the political atmosphere at home the authors provide in *Atomic Shield*. The period they write about was one of the darkest in American history. The lines of the Cold War hardened; the United States and the Soviet Union could not reach agreement over control of nuclear weapons; the armaments race began; West Berlin was blockaded. Revelations about spying and questions of loyalty raised doubts and created confusion. America was gripped by a Red scare, and fear and hysteria contaminated much of the public life. There was the Hiss-Chambers affair, the Rosenberg case, and the trial of the 11 in New York for violation of the Smith Act. There were security hearings, the accusations by Representative J. Parnell Thomas and Senator Joseph McCarthy, and the dismissal of academics and others from their jobs under suspicion of communist associations.

In this nightmare the Atomic Energy Commission functioned. It established administrative procedures, decided priorities and organized laboratories, struggled to keep the control of nuclear weapons in civilian hands, lived with secrecy and loyalty questions. Hewlett and Duncan certainly refer to the difficulties of the period as they affected the activities of the AEC; but to mention McCarthy only once (for a general manager the Commissioners sought "a man with a sound conservative background [who] would help to scotch the charges Joseph R. McCarthy was making in the Senate that the Commission had ignored the communist leanings of many American scientists"), and to omit the controversy over the use of nuclear weapons in the Korean war, leaves too much untold. It was a sick time, and to tell the story of the AEC without showing the extent and pervasiveness of the sickness and analyzing its impact on the AEC is to do less than justice to the history and may even distort it.

Perhaps the most important part of the book is the account of the decision to develop a thermonuclear bomb. The struggle behind the scenes was titanic. Here are the activities of Edward Teller and his supporters, the opposition of Oppenheimer, David Lilienthal and others, the maneuverings and debates of scientists, congressmen, soldiers, and Commissioners. The repercussions of the decision were enormous. Out of it came a reevaluation of American strategy—Paper 68 of the National Security Council, the result of a study ordered by President Truman in his directive of 31 January 1950 approving a hydrogen bomb program. Hewlett and Duncan give little space to that critical document. They ignore the important controversy over the B-36 and the strategy of deterrence in the fall of 1949, an issue central to the shaping of American policies. It may be unfair to ask more of them. They had enough problems to live with, including the "restrictions of classification" which prevented them from describing in detail the development of nuclear weapons and the fundamental breakthrough that led to the hydrogen bomb nearly 20 years ago. The authors say that

> [never] at any time did the Commission require us to revise, delete, or change the interpretation of our manuscript, except for classified information which would adversely affect the national security. This exception, however, is an important one.

. . . The restrictions of classification have unavoidably blemished our work on some topics. . . .

Atomic Shield, in spite of its limitations, is an important book. Those scientists who are troubled by young people's rejection of science and technology would do well to read it, for the history of the AEC reveals the roots of the discontent: secret research, the development of weapons, the military-university-industrial complex. Scientists were active in these affairs and not always reluctantly. In the shift from the ideal of the peaceful atom to the reality of nuclear weapons lies the painful story of the scientific community's involvement in the shaping of global power policies. This is a tortured history which touches the very condition of life in this country and elsewhere, and many young men and women are demanding that scientists face up to it.

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Rehearsing the Arguments

Preventing the Spread of Nuclear Weapons. First Pugwash Symposium, London, April 1968. C. F. BARNABY, Ed. Humanities Press, New York, 1969. xiv + 374 pp., illus. $9.50. Pugwash Monograph 1.

Implications of Anti-Ballistic Missile Systems. A Pugwash Symposium. C. F. BARNABY and A. BOSERUP, Eds. Humanities Press, New York, 1969. x + 246 pp. $7.50. Pugwash Monograph 2.

These two monographs are the first published proceedings of symposia organized by the Pugwash group for the purpose of exploring specific and well-defined topics in greater depth than is possible at the larger annual Pugwash Conferences on Science and World Affairs. In addition to the papers presented at the symposia, the editors have themselves provided in both monographs background papers and summaries which are useful in integrating the widely diversified and somewhat uneven contributions of the individual participants.

The first of these symposia, on Preventing the Spread of Nuclear Weapons, took place in the spring of 1968, when the Non-Proliferation Treaty (NPT) was in its final stages of negotiation. This treaty, which was originally worked out between United States and Soviet negotiators, had already been significantly modified as a consequence of the strong political objections of other nations to many of its discriminatory features. Many of the papers elaborate on the problems presented by the NPT, but in general the tone of the symposium was more favorable toward that treaty than were the attitudes of many of the governments from which the symposium participants were drawn. However, now two years later, when the NPT has come into force and the rhetoric has largely subsided, it is instructive to look back and refresh the mind about the argumentation of that time.

Mendl (United Kingdom) presents an interesting analysis of the motives for acquiring nuclear weapons, and reminds us that in every case the decision to acquire them was taken without giving any opportunity for public discussion. Several papers review the problems of maintaining safeguards against the diversion of nuclear materials from peaceful uses to weapons, and Prawitz (Sweden) makes a plea for reducing discrimination by requiring such safeguards for countries that have as well as for those that do not have nuclear weapons. Some of these discussions seem dated, with the treaty in force and anti-diversion safeguards being applied in the United States and the United Kingdom, but they are of continuing interest because they deal with what is still the major problem for many nations that have not yet acceded to the treaty.

The summary is particularly useful. It is interesting to see the words of caution against the excessive optimism expressed in many nations at that time concerning nuclear power programs, particularly the peaceful uses of nuclear explosives. Many of these warnings have been substantiated by sobering experiences since 1968. There are also useful reminders that, now that the treaty is in force, nations must push on beyond it if its objectives are to be realized. Perhaps of particular note is the suggestion that the few reactor-exporting countries, upon which most of the rest of the world is dependent, should adopt policies that will closely control the plutonium produced in those reactors, so that it could not easily be turned into weapons if the treaty were abrogated.

In sum, this monograph is a useful reference on the background of the negotiation of the NPT and brings together many of the pertinent documents. It also contains ideas that are still useful for those who are engaged in working toward restriction of nuclear weaponry.

The second monograph, *Implications of Anti-Ballistic Missile Systems,* is somewhat less successful, perhaps partly because of the unfortunate timing of the symposium. In July 1968 both the United States and the U.S.S.R. had just agreed to initiate talks at an early date on limiting strategic arms. During this interim participants from neither nation desired to make any statements that might upset the negotiations or be misinterpreted by the other. In fact Soviet participation was curtailed at the last minute and no papers were given by the Russians. Furthermore, the background material and papers suffer from having been written before the U.S. ABM Safeguard system had been conceived, and they seem scanty by comparison with the deluge of information, and misinformation, that inundated the U.S. public in 1969.

Perhaps of most interest in this volume is the material dealing with the ABM as a defense against a Chinese threat, the rationale which is again becoming popular this year to justify an ABM. D. Carlton from the United Kingdom has an original discussion favoring a limited ABM for the United States and the Soviet Union to protect against a spasm attack by a third nuclear nation. He argues that the capability for such an attack should be eliminated and in this connection urges the United Kingdom to give up its strategic nuclear force. He believes that other nations, which might not forego such a capability on their own, might be kept from an irrational act by a limited ABM. In making his case he categorizes the arguments of the opponents of ABM's as irrational, but neglects to consider that any leader who was so irrational as to order a spasm attack might not be deterred by an ABM of unknown capability. A number of other authors are less impressed with the usefulness of such an ABM system and point out its defects.

In sum, this monograph contains some interesting discussions, but it does not offer much that is new to those in