War and System

Report from Iron Mountain on the Possibility and Desirability of Peace. Introductory material by LEONARD C. LEWIN. Dial Press, New York, 1967. xxxii + 109 pp. $5.

On the authenticity of this supposedly leaked government report I can add nothing to the incomparable testimony of "Herschel McLandress" (*Book World,* 26 Nov. 1967). As he there so felicitously phrased it, "The public would not be more assured had I written it myself." When it comes to content, however, there can be no doubt: What we have here is a pure put on. Despite the "inside" atmosphere, the pose of hard-nosed grappling with truths too unpleasant for popular consumption, pretentious allusions to large sums spent on computer studies—of which no evidence appears—and other pseudoscientific trappings, the reader will find in the end that he has been given no new evidence—merely a few old opinions.

These opinions are that the government maintains large defense programs in order to promote economic prosperity, rejects disarmament through fear of the economic adjustments involved, and distrusts peace because it would be politically and socially unstabilizing. To all intents and purposes, this is the old pre-Krushchev communist propaganda line, now being exhumed and mustered in, for the duration, by the Maoists, Castroites, and other New Left. This propaganda line is the real "point" of the book; the rest is essentially window dressing.

The anonymous authors cheerfully wave aside the fact that their theses have been demolished by a number of careful studies:

> . . . the reason for our seemingly casual dismissal of so much serious and sophisticated work lies in no disrespect for its competence. . . . To put it plainly, all these programs, however detailed and well developed, are abstractions. We find that at the heart of every peace study we have examined . . . lies one common fundamental misconception. It is the source of the miasma of unreality surrounding such plans. *It is the incorrect assumption that war, as an institution, is subordinate to the social system it is supposed to serve.*

In reality, "War itself is the basic social system." On the basis of this claimed higher insight, the conclusions of common sense are reversed. The purpose of national defense is not to ward off external threats and preserve the national interest in case of international conflicts. On the contrary, "war-making societies require—and thus bring about—such conflicts. . . . Threats are usually created or accelerated to meet the changing needs of the war system."

As sociology, this is rather primitive. It certainly does not explain how nations keep their defense expenditures down to only a small fraction of the national income and cut defense expenditures severely from time to time. It does not explain how some countries remain neutral and avoid war and how some societies in history have lacked war-making capacity. And it underrates the very real dangers of living in an international environment without the protection of a rule of law.

But military activity is not after all portrayed as quite an end in itself. It does, it seems, serve society, but not in the way usually supposed. For one thing, it is alleged to provide an essential means of preserving prosperity. In explanation the book quotes with approval a sentence from *The Economic Impact of Disarmament*, a panel report published in 1962 by the U.S. Arms Control and Disarmament Agency (ACDA). I happen to have written that particular sentence myself; and since the book completely distorts its significance by taking it out of context, it may be worth citing. The sentence is:

> It is generally agreed that the greatly enlarged public sector since World War II, resulting from heavy defense expenditures, has provided additional protection against depressions, since this sector is not responsive to contraction in the private sector and provides a sort of buffer or balance wheel in the economy.

After citing this sentence, the book says:

> The *principal* economic function of war in our view is that it provides just such a flywheel. It is not to be confused in function with the various forms of fiscal control. . . ."

Now it so happens that the very next sentence in the ACDA Panel Report, following the one quoted, was:

> The high tax rate required by this high level of Government expenditures provides a large volume of revenue which is very sensitive to changes in income, so that shocks of the economy are in good part absorbed in declines in taxes rather than in disposable income. A reduction in the size of the public sector would weaken this type of protection.

In short, the stabilizing effects of large defense programs as argued in the ACDA panel report have actually nothing to do with their defense contents in particular, but are based solely on their strengthening of fiscal policy instruments—just the opposite point to the one which the book sought to support by citing the sentence out of context.

In arguing that expanded social welfare and construction programs could never really replace defense programs as creators of expanded economic demand, the report concludes (without benefit of any quantitative evidence) that "the maximum program that could be physically effected along the lines indicated could approach the established level of military spending only for a limited time—in our opinion, subject to a detailed cost and feasibility analysis, less than ten years." After this the capital construction phase would be completed and there would be only "a permanent comparatively modest level of annual operating cost."

In fact this is nonsense. Total nondefense government expenditures (including state and local) are already considerably higher than defense expenditures. The requirements for rebuilding our decaying central cities, combatting the progressive deterioration of our physical environment, and achieving minimum health and educational standards transcend any possibility of meeting our requirements even if defense expenditures could be eliminated tomorrow. By the time we have made some solid progress in meeting these backlogs—it will take decades rather than years—we will be confronted with heavy capital costs of renovation and rebuilding. No more than other forms of fixed capital investment do public highways, public buildings, and other public works once built continue to meet our needs for all future time.

The crucial fact for the reader to bear in mind is that the defense program utilizes less than a tenth of all the output of our economy. Our economy must grow by 10 percent every two or three years to maintain adequate employment and living standards anyhow—and normally does. Even general and complete disarmament would involve defense cuts of not more than 1 percent of the gross national product a year, at most. Thus defense is simply not of major strategic importance, economically speaking.

As for the claimed biological, social, and political determinants and value of war, they are equally unimpressive. Konrad Lorenz's *On Aggression* is of course referred to (and by its impressive original German title), but no men-

tion is made of the fact that his scientific colleagues have been quite unable to repeat his key observations and experimental findings on the key instinctual role of animal aggression and that he himself draws relatively optimistic conclusions in applying his studies to human society.

For the rest, we have only pretentious dogmatizing:

> The war system, for all its subjective repugnance to important sections of "public opinion," has demonstrated its effectiveness since the beginning of recorded history. . . .
>
> . . . *any* condition of genuine total peace, however achieved, would be destabilizing until proved otherwise.
>
> War . . . has uniquely served societies . . . as an indispensable controller of dangerous social dissidence and destructive antisocial tendencies.
>
> It has enabled societies to maintain necessary class distinctions. . . . No modern political ruling group has successfully controlled its constituency after failing to sustain the continuing credibility of an external threat of war.
>
> It is entirely possible that the development of a sophisticated form of slavery may be an absolute prerequisite for social control in a world at peace.

The reader will find the text studded with similar profundities: a sort of hand-me-down Oswald Spengler.

I have read longer and duller books than this, but never, I believe, a worse one.

EMILE BENOIT
Graduate School of Business, Columbia University, New York City

Vapors

Theory of Fog Condensation. A. G. AMELIN. Translated from the second Russian edition (Moscow, 1966, B. V. Deryagin, Ed.) by Z. Lerman. Israel Program for Scientific Translations. Jerusalem; Davey, New York, 1967. xii + 236 pp., illus. $14.

This book is not primarily concerned with fogs in the atmosphere. Rather, it treats the general problem of condensation within a gaseous volume. It discusses industrial applications extensively, but mentions meteorological examples only briefly and cursorily.

The author restricts himself to the formation of fogs by condensation. The formation of mists by spraying or other mechanical means is not discussed. However, condensation is such a complicated process that there is no shortage of material to be covered. The deficiency in this book is rather the slighting of some of the topics which could well have been explored in greater depth.

The idea of treating condensation of drops in complete generality and then applying the results to various specific systems which occur in nature and in industry is an excellent one. I know of no other attempt to carry out this procedure. The same principles, both for homogeneous and for heterogeneous nucleation, are invoked by various investigators, be they physical chemists, process engineers, or meteorologists working on problems in cloud physics. In bringing together the theories into a unified presentation this book performs an important service. However, it is only partially successful, because of some lack of rigor and an unevenness in the coverage of the material.

The book begins with a fairly thorough treatment of the theory of homogeneous nucleation. Its treatment of condensation on nuclei is much less complete. It then covers, in varying degrees of depth, the formation of supersaturated vapor and fog by adiabatic expansion, radiative cooling, turbulent mixing, molecular diffusion, thermal conduction, and chemical reactions. In the discussion of these several processes a number of practical problems are discussed, including preparation of metal powders and carbon black and the prevention of fog during condensation in spray towers and bubblers.

The author is obviously less well acquainted with the meteorological aspects of the subject than with the physical chemistry. His treatment of radiative cooling, for instance, is primitive, and his statement that "The radiative cooling of a cloudy atmosphere is lower than that of a clear atmosphere, since clouds reflect radiant energy" is actually wrong. Because water in liquid drops has a much larger overall emissivity than water vapor, radiative cooling of clouds is greater than that of clear air containing the same amount of water substance. Similarly, he attributes the formation of clouds and fog at fronts to mixing of the air masses on the two sides. Actually they are formed for the most part by adiabatic cooling of air being lifted by the convergence of the air masses.

This translation is one of a number, mostly of books originally published in Russian, which the Israel Program for Scientific Translations has made available to English-reading scientists. The program is to be congratulated both on the quality of the translations and on the fact that the prices of the books are much more reasonable than those of most translations. On the other hand one might take the liberty of pointing out that the format leaves something to be desired. For instance, running heads at the top of each page to identify the chapters would be helpful, and the diagrams and symbols in equations frequently could be larger and clearer.

M. NEIBURGER
Department of Meteorology, University of California, Los Angeles

Earth and Space Sciences

The Encyclopedia of Atmospheric Sciences and Astrogeology. RHODES W. FAIRBRIDGE, Ed. Reinhold, New York, 1967. xvi + 1200 pp., illus. $35. Encyclopedia of Earth Sciences, vol. 2.

This one-volume encyclopedia covers rather well the broad range of topics suggested by the title. Atmospheric Sciences includes both the chemical and the physical phenomena of the atmospheres of the earth and other planets. Astrogeology ranges between geology and astronomy. Thus one finds articles such as Cosmology, Universe, Galaxy, and Cosmic Rays alongside articles such as Climate and Geomorphology, Atmospheric Circulation—Global, Aeronomy, Geomagnetic Disturbances, Van Allen Radiation Belts, and Lunar Geology.

I tried to judge the quality of this encyclopedia by looking up articles on subjects that I felt I knew something about (to see if I agreed with the presentation) and articles on subjects about which I knew little (to see if the articles left me edified). In my opinion the book passed both these tests rather well. For example, the article on aeronomy is exceedingly well done in its accuracy, conciseness, and completeness, and I found the article on hydroclimate both interesting and informative.

Following the book-reviewer's syndrome, I searched for errors and omissions. They seemed remarkably few, and they were not especially significant ones: for example, a log scale on the figure on page 258 reads, from right to left, 10^5, 10^3, 10, 0; Aeronomy is not cross-referenced under Upper Atmosphere; and there is no index heading under Scale Height.

This encyclopedia is a handy refer-