Book Reviews

Inspection for Disarmament. Seymour Melman, Ed. Columbia University Press, New York, 1958. 291 pp. $6.

Abraham Lincoln, voicing his conviction that bold ideas and new proposals must come from without the Government, once wrote that "the people will save their Government if the Government itself will do its part only indifferently well." A group of "outsiders" working under the aegis of Columbia University's Institute of War and Peace Studies has succeeded in a combined effort which would have pleased Lincoln mightily; they have come to grips with one of the thorniest and yet most compelling problems of the nuclear era—the task of inspecting for weapons should the nations of the world agree to disarm.

Writing in the foreword, William T. R. Fox states the problem and the hope in a single sentence: "New vistas for negotiation and agreement would be opened up by a technically well-founded judgment that it would be possible to install on this planet a disaster-proof alarm system to detect and identify a clandestine violator of a disarmament agreement." He makes it clear that the technique of arms control must be capable of ferreting out "militarily decisive amounts" of forbidden war materials. The double emphasis—militarily decisive and disaster-proof—strikes a note of realism that has been lacking in the language of the prophets of doom who insist on fool-proof or cheat-proof inspection.

The book, as organized by Seymour Melman, a dynamic industrial managerial expert at Columbia University, consists of three parts. There is a general report of some 50 pages which defines the problems of inspection and surveys the gist of the 18 individual reports which follow. Then there follow three brief reports of "evasion teams" which were assigned the task of finding loopholes in the inspection systems for disarmament.

I would suggest that the reader savor the full flavor of the 18 separate reports before tackling the general report. Some of the specific reports are so compressed that editor Melman faced an extremely difficult summarizing chore. That Melman succeeded in keeping his 18 authors from wandering away from the main topic is a notable achievement.

One of the most refreshing aspects of the book is that most of the contributors are newcomers to the disarmament field. This probably accounts for the attitude of enthusiasm and optimism which they adopt.

The Columbia group began its work early in 1957 with financial support from the Institute for International Order. They energized themselves with the incentive that a disarmament agreement "would help to preserve the human species and to prevent a world holocaust." However, they divorced themselves from the politics of such an agreement and fixed their attention upon a workable inspection system.

The over-all approach to this challenging problem is a bold one. There is a direct address to the central issue of general disarmament on a broad scale rather than to piece-by-piece, incremental arms limitation; this may be viewed by some as unrealistic, but the value of the study is that it is not watered down. Indeed, there are many today who feel both that the past decade of arms talks have failed because they have aimed too low and that a more radical approach might work.

Not all of the 18 expert opinions on inspection can be invoked in a brief review. However, one may summarize and consolidate their views. Aerial inspection is appraised as being useful for present-day delivery systems but "of almost no value once the intercontinental ballistic missile becomes part of the military arsenal." Not much hope is held for fiscal inspection since governments are experienced in concealing the use of funds from the public; a small percentage of a national budget can be kept from public scrutiny. In the United States a budget which is a significant fraction of $1 billion is concealed for intelligence purposes.

Jay Orear's analysis of the feasibility of detecting nuclear tests has already been published in the *Bulletin of the Atomic Scientists* and has been given in amplified form as testimony before the Humphrey committee investigating disarmament. If the Columbia study produced nothing more than the Orear paper it would have been well worth the effort, for this analysis demonstrated again that nonaccess to secret data is no real barrier to evaluation of nuclear issues.

Official secrecy serves to inhibit public discussion and undermines confidence in nonofficial studies. Moreover, secrecy can prevent outside experts from putting the right numbers into their analyses. For example, James H. Boyd (Columbia) assumes that the critical mass of fissionable material is about 90 pounds. But such miscues should not detract from the fundamental good aim and focus of the individual studies made by the Columbia group.

It is distinctly encouraging that the report is not monopolized by the atom. The valuable analyses of John B. Walsh (Columbia), Eugene A. Avallone (C.C.N.Y.), Henry Burlage (M.I.T.), and Charles J. Marsel (N.Y.U.) concern missiles, guidance systems, propulsion, and fuels. They emphasize the fact that numbers of nuclear weapons in stockpile are futile digits unless they can be delivered on target. Therefore, delivery vehicles, especially missiles, become of surpassing importance in disarmament-inspection studies.

The multiple approach to inspection, accented throughout the book as highly significant, looks most promising in the case of inspection for missiles. For example, ferreting out the production of an Atlas type ICBM is no needle-in-a-haystack dilemma; this is quite apparent from the fact that the needle is over 100 feet in length. An intercontinental missile is the product of a highly developed and specialized technology. Approximately 40,000 separate parts must be assembled for a single ICBM. Some of these components, such as gyroscopes and accelerometers, require ultraprecision manufacture. For example, only one firm in the United States was able to supply a machine precise enough for ultraprecision gear hobbing.

Very few military men would be willing to stockpile missiles without proof-testing a sufficient initial quantity of the birds to be sure of performance characteristics. Once proof-tested, the missiles would require periodic testing to assure their viability. With this in mind D. G. Brennah (M.I.T.) discusses the detection of high-altitude missile tests in an analysis which should be related to Orear's paper. Clearly, if monitoring posts are installed in the major countries of the world to detect nuclear tests, they ought to be instrumented to detect missiles as well. The spacing between stations is compatible with the twin detection of bombs and missiles.

Vincent Groupé (Rutgers) presents a very brief discussion of the inspection problem as related to biological warfare —or the "poor man's A-bomb." He avoids underlining any conclusion, but

one does not have to read between the lines to realize that, as far as inspection is concerned, the problem of biological warfare is vastly different from all others discussed in the book.

A fascinating insight into the production and smuggling of clandestine arms is provided by Lt. Col. Rivlin, an officer in the army of Israel and a man with 20 years' experience in covert operations. His cloak-and-dagger story is worthy of book-length expansion and might even achieve best-seller lists if he accentuated the humorous angles which developed when the Hagana set out to frustrate British control. The Hagana located a transportation center less than 100 yards from the British Headquarters in Tel Aviv; it smuggled illegal cargo by draping it with an overlayer of fresh fertilizer and in one case with rather ripe onions; over-all, it conducted an efficient underground operation with minimal interference.

Sociologist William M. Evan (Columbia) reports on public opinion polls, including some Gallup polls not published heretofore, on attitudes toward inspection and supranationalism. It is discouraging to find the United States lowest (West Germany and Japan are highest) on the list of countries favoring worldwide inspection. On the other hand, 97 percent of those queried from the membership of the Federation of American Scientists favored inspection (3 percent of the FAS must be given hearing tests!) as opposed to 53 percent of the American Legionnaires favoring inspection for disarmament. (No comment.)

Psychiatrist Alberta Szalita completes the team of 18 experts and provides some highly interesting insights into the psychological aspects of questions bearing on man's capability to live in peace. She asks: "Does man possess psychological equipment for disarmament as well as for evasion?" Commenting on governmental decisions, she states: "It is also plausible to assume that some, if not many, of the decisions are prompted by personal needs and the nature of the personality characteristics of some government representatives." This point is well taken, for when decisions are reached in secret the personality traits of the decision-makers may be decisive.

The reports of the three evasion teams are so terse as to discourage further compression. However, they emphasize that "The sooner a disarmament agreement could be achieved between the nations, the simpler the problem of inspection." They recognize that evasion is easier in a totalitarian country. They stress the fact that the Achilles heel of disarmament is the secreting of stores of arms prior to inspection. They note "how vast a distance still separates the world from genuine full disarmament."

This optimistic yet realistic appraisal of inspection for disarmament does not attempt to deal with political feasibility. Its obvious hope is that disarmament will reduce international tensions and that small steps will lead to big steps. This view will be challenged by those who feel that there can be no mechanical crutch for limping into an era of reduced tension. Arms, they say, are the end products of fear and while more arms increase tension, less arms do not necessarily decrease it in the era of nuclear missiles.

The great merit of this pioneering book is that it penetrates to the core of the disarmament-inspection problem. Columbia University Press manufactured the book in an incredible five weeks in order to bring the book to the public on the heels of the Geneva talks. It is to be hoped that this good timing will give this book the kind of national readership which it so much deserves. It is without doubt the most significant book I have read this year.

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The Kingdom of Jordan. Raphael Patai. Princeton University Press, Princeton, N.J., 1958. ix + 315 pp. Illus. $5.

This volume is considerably more important and more widely useful than its simple title would suggest. The real worth of the book is not immediately apparent even in some of the earlier chapters, which, almost in Baedeker fashion, deal with physical environment and supply skeletal outlines of Jordan's history, its contemporary political and economic structure, and its attributes as a Middle Eastern state. Interspersed among these factual recitals, which presumably are intended to serve principally as a context for a detailed treatment of Jordanian society, are enlivening observations on the unifying influence of religion and language, on pan-Arabism, and on the relationship between power-prestige and cultural attitudes. These sociological excursions give advance notice of the fact that the essential contribution of the book, as might be expected from the author's previous writings, consists in a masterly analysis of the human components of Jordan—an analysis that holds good to an almost equal degree for the surrounding Arab countries.

Most of the topics with which the author is mainly concerned—the family, the nomads, villages and towns, religion, health, language, and education—have been discussed by other students of Arab life and Islamic institutions in recent years. Few, however, have shown the depth of perception and understanding of the characteristics peculiar to the several elements in the Jordanian population that are displayed here. Patai is nearly at his best in dealing at some length with the changes that have been taking place in nomadic life since World War I. One misses only an evaluation of two of the more potent of the causative factors: the high-power rifle and the motorcar.

The final chapter, on "Values and outlook," is an excellent synthesis of all that has gone before. It makes clear the problems and perplexities of groups at various cultural levels in a predominantly Muslim environment now in transition between customary and traditional values and the contrasting ones of an ever-encroaching modern world. Caught up in this process, the Arab has to form new concepts of freedom, independence, and leisure. In this connection the author explains some of the manifestations —such as the irruption of street mobs— which of late have seriously complicated political processes in Jordan and neighboring countries. Ascribing many of these phenomena to youths recently emancipated from the discipline of the family, he remarks: "They discover that they can support causes by participating in street demonstrations, that theirs is the freedom of the crowd, the independence gained through anonymity, the emotional satisfaction of mob action. This is a truly new experience. . . . Now . . . they feel free to commit irresponsible acts in the name of patriotic fervor and indignation." Here, the author tacitly suggests, is raw material for Communist endeavor. The question of the hour, he concludes, is: "Into what direction will these changes lead the nascent Jordanian nation?"

HALFORD L. HOSKINS
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The Terpenes. vol. V, *The Triterpenes and Their Derivatives.* Hydroxy acids, hydroxy lactones, hydroxyaldehydo acids, hydroxyketo acids, and the stereochemistry of the triterpenes. John Simonsen and W. C. J. Ross. Cambridge University Press, New York, 1957. ix + 662 pp. $15.50.

This most recent volume in the monumental series on the chemistry of the terpenes is, for the most part, an extension of volume IV, covering the more highly oxygenated triterpene derivatives. The chemistry of the triterpenoid hydroxy acids, lactones, aldehydo acids, and hydroxyketo acids is presented in the classical framework employed in the earlier volumes of the set.

The use of outline formulas is welcome, but here, as in volume IV, the authors have produced distorted and somewhat confusing diagrams through a