been meticulously detailed, but the deductions he has drawn from them have been experimentally tested to determine their objectivity and their validity. Unlike many naturalists, Tinbergen constructs ingenious methods of testing what he thinks he can deduce from his observations, and, by so doing, is able to present his observations in critically acceptable form. The first essay in this book deals with insect studies at Hulshorst, in Tinbergen's native Holland, where he first found the type of study that he decided to make his life work. This is followed by two chapters on experiences in the arctic, especially in Greenland, where he made his notable studies of snow buntings and phalaropes. Following these are a number of chapters devoted to a variety of creatures—falcons, sand wasps, butterflies, gulls, and ducks, as well as penetrating discussions of both animal camouflage and the symbiotic relations between insects and flowers. All in all, a pleasant and stimulating literary experience is in store for those who read this book.

All three books are well indexed. While this is of less importance in the second and third than in the first volume, the presence of an index indicates to me at least, that the author attempted to make his ideas and his data available to his readers, an attitude always to be commended. Anyone who has had to peruse, page-by-page, old unindexed travel books for the observations of natural history they contain must have had occasions to condemn the authors for this lack of cooperation.

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Men and Atoms. The discovery, the uses and the future of atomic energy. William L. Laurence. Simon and Schuster, New York, 1959. xiii + 302 pp. $4.50.

This is a fascinating account, written by the science editor of the New York *Times*, of the birth of the atomic age. Laurence was the only reporter privileged to be in on the secret of the first nuclear bomb before it was exploded above the New Mexico desert in 1945.

Though much of the story has been recorded previously, the reader may enjoy reliving the cloak-and-dagger intrigue that surrounded the Manhattan Project and some of the events of the tense 3½-day countdown that preceded the triggering of the bomb—Bacher struggling with a balky mechanism while he assembled the vital core of the bomb in an old ranch house; Kistiakowsky braving an electrical storm to inspect the bomb-laden test tower; Oppenheimer and General Groves anxiously eyeing the foreboding skies. Then "there rose as if from the bowels of the earth a light not of this world, the light of many suns in one" to herald the end of World War II and the beginning of man's efforts to avoid universal suicide.

Actually, the book covers a great deal more than the Manhattan Project and should give the lay reader, in particular, a good idea of how basic research provides the building blocks for the foundation on which technology lies. This lesson comes through despite the chronologically disjointed narrative (perhaps a reflection of the occupational disease which afflicts us newspapermen) and Laurence's unrestrained prose—sometimes as purplish as the awesome fireball it seeks to describe.

Among other things, Laurence painstakingly debunks the popular notion that the atom-bomb project was sparked by Einstein's famous letter, written in 1939, to President Roosevelt. "The tragic truth is," Laurence says, "that the Einstein letter . . . played no part whatever in the decision (26 months later) to go all out on the building of an atom bomb." For, the author points out, "it was not until December 6, 1941, the day before Pearl Harbor, after the British scientists had shown us that an atom bomb was a definite possibility and when it appeared that we had handed the Germans a head start of three full years (an assumption later proved to be erroneous), that we at last decided to go start work on the project."

As Laurence details our procrastination and lack of top-level concern, the reader should come to realize the implication of two situations: the danger to democratic survival of a scientifically illiterate electorate and, worse yet, the folly of entrusting our national fate, in times such as these, to lawmakers and policy planners ignorant of the ways of science and technology.

The reader should also sense the utter ridiculousness of some of our secrecy rules while, at the same time, recognizing the treacherous cunning of traitors like Fuchs, who breached the tight security precautions to "feed Soviet agents the secrets of the atom bomb and the early theories about the hydrogen bomb."

Undoubtedly, some readers will take issue with the author's discussion of "clean" hydrogen bombs (though he makes it clear they'll never be as pure as Ivory soap), with his defense of our recent nuclear weapons tests (to which I subscribe), and with his conviction that "there cannot be another war" because an aggressor would risk "the certainty of absolute and swift annihilation" (an obvious reality which madmen have a tragic habit of overlooking).

But, all in all, the book is well worth your reading.

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Libraries and Bibliographic Centers in the Soviet Union. Indiana University Publications. Slavic and East European series, vol. 16. Paul L. Horecky. Indiana University, Bloomington, 1959. xviii + 289 pp. $3.

Paul Horecky, assistant chief of the Slavic and East European Division of the Library of Congress, characterizes his study as "an attempt to present an up-to-date and realistic picture" of libraries and bibliographic centers in the U.S.S.R. The attempt is timely, worth while, and highly successful. Drawing its information from a wide range of Soviet material and from interviews with American visitors to Soviet libraries, the book has a double merit: it presents a great deal of carefully sifted information about the institutions in question and also points out the rather special role such institutions have been made to play in the Soviet environment. On the factual side, the book describes the Soviet legal deposit-copy system and organs of bibliographic registration and the various aspects of the network of libraries and collections; on the analytical side, the book touches upon the Soviet concept of librarianship as a vehicle for indoctrination.

The well-organized volume begins with a glossary which defines pertinent Soviet terms that often puzzle the nonspecialist, and includes 12 chapters of closely packed data interspersed with elucidating organizational charts, diagrams, and tables. Thirty-four "supplements" containing additional relevant material, a selective and up-to-date bibliography of sources, and a detailed index add to the value of the publication.

The readers of *Science* will be particularly interested in the chapters dealing