

Books

Where Science and Politics Meet

by Jerome B. Wiesner

McGraw-Hill\$6.95

Reviewed by Joel N. Franklin,
professor of applied science

Since 1964 Dr. Jerome B. Wiesner has been Dean of the School of Science at MIT, where some years previously he had been the director of the Research Laboratory of Electronics. In 1958 Wiesner was staff director of the American delegation to the Geneva Conference for the Prevention of Surprise Attack. In 1961 President Kennedy appointed him Special Assistant for Science and Technology. From 1962 until 1964 Wiesner was director of the Office of Science and Technology.

Where Science and Politics Meet is a collection of papers written and addresses given by the author from 1960 to 1965. The book has three parts: I, "Where Science and Politics Meet"; II, "Education for Modern Life"; and III, "Learning About Disarmament."

Part I begins with a remembrance of President Kennedy. Wiesner, who gave Kennedy advice about science from the time he was in the Senate, notes Kennedy's broad general knowledge of science and his appreciation of the leading role of technology in the present and in the future.

"Technology and Society" presents several important examples of contributions of computer technology: the simulation, directed by Wiesner, of the economy of Pakistan; and the computer determination of the structure of molecules by Watson and Crick. Wiesner suggests areas of future technological development and estimates reasonable increments in current expenditures for them.

Computers

Wiesner lays great stress on computers, as in this quote: "The introduction of computer courses and the use of computational methods in teaching physical sciences, engineering, economics and social sciences would so enhance the professional competence of the students involved that extraordinary measures should be taken to assist the colleges in this effort. Possibly, computers should be included in the category of academic facilities that the federal government will help to finance under the College Aid Bill."

The chapters "Living with Science"

and "Science and the Affluent Society" present a history of science in our government and give recommendations for scientific policy. Like Kenneth Galbraith, Wiesner believes in government support of worthy projects which private industry would find unprofitable to support. In Wiesner's view, developmental projects should be kept under strict surveillance, but basic research should be given much greater freedom. Considering government support of university research, Wiesner perceives the conflict between the policy of supporting the centers of excellence and the policy of building the competence of underdeveloped universities. Part I ends with essays on "Federal Research and Development" and "Water Resources Research."

Education for modern life

Part II, "Education for Modern Life," discusses federal support for primary and secondary schools, the problem of meeting our technological manpower needs, and education for scientific productivity. In the important essay, "Science and Education for Developing Nations," Wiesner states that "... modern technology and agriculture cannot be transferred intact from one environment to another," and "I do not believe a nation can produce the manpower necessary for a complex society without a good university system."

"The Role of Science and Technology in Industrial Development" shows how a university, like Caltech in the Los Angeles area, creates new industry. "What to Do about Scientific Information" is concerned with government classification and distribution of newly-appearing scientific results.

Part III, "Learning About Disarmament," is highly technical. In "The Relationship of Military Technology, Strategy, and Arms Control," Wiesner shows how limitations in our knowledge of seismology hampered some disarmament negotiations. There are discussions of surprise attack; of comprehensive arms-limitation systems; and of inspection for disarmament, including a theoretical, mathematical analysis.

The book ends with a brilliant, incisive essay - "National Security and the Nuclear Test Ban" - by Wiesner and Dr. Herbert F. York, chancellor of the University of California at San Diego and a member of the President's Science Advisory Committee. The main contention is that the task of tech-

nic defense against thermonuclear-missile systems is hopeless. Defense in the Battle of Britain in World War II is contrasted with defense against a modern missile attack. In the Battle of Britain, "interception of no more than 10 percent of the attacking force gave victory to the defending force . . . Yet the delivery of only one (thermonuclear) warhead would result in . . . an effective attack." Although Wiesner and York conclude that there can be no adequate technical defense, they confidently believe that there is a non-technical solution whose first important step is the partial nuclear test ban.

In the opinion of this reviewer, Dr. Wiesner's book is an important contribution to our philosophies of science, government, education, and disarmament. The book is not easy to read, and it suffers the lack of coherence common to all collections of previously-written papers. But the best of Wiesner's essays are self-sufficient and outstanding in their originality, their balance of judgment, their perceptiveness, and their constructive practicality.

Letters

St. Georges, Delaware

EDITOR:

The man I work for is by way of being an amateur philologist. His friends frequently send him new words for his collection, and not long ago one of them phoned to see whether he had ever heard of a millifung, which was used for scorekeeping in Caltech's First Annual Eucalyptus Decimation Contest (*E&S*-June 1965).

He hadn't. Neither had I. Neither had Webster nor several other reasonably good authorities. We give up. Please let us know what a millifung is.

MRS. CHARLES J. ZENCEY

From the inventor of the millifung, Tim Hendrickson '67, comes this official definition:

The fung (a millifung is 10⁻³ fung) is now standardized as an English unit of normalized tree-felling time.

For those of you who wish to use the fung for tree decimation contests of your own, its derivation is: Let T be a tree of circumference c (inches) with cross-sectional area a (square inches), felled in time t (seconds). Then the fung rating, F, is given by $F = t/c^2$ (sec/in²).