Books

The New Priesthood — the Scientific Elite and the Uses of Power.

by Ralph E. Lapp

Harper & Row $4.95

Reviewed by J. N. Franklin, professor of applied science

Dr. Ralph Lapp got his PhD from the University of Chicago in 1945. Since then he has been assistant director of the Argonne National Laboratory, consulting scientist for the Bikini bomb tests, and science adviser on the War Department general staff. In 1947 he became head of the nuclear physics branch of the Office of Naval Research. More recently he has been an author of books on science and society, such as *Nuclear Radiation Physics; The New Force; Atoms and People; Radiation — What It Is and How It Affects You; Man and Space; The Voyage of the Lucky Dragon;* and *Kill and Overkill.*

These are the main points he makes in *The New Priesthood:*

1. "Democracy faces its most severe test in preserving its traditions in an age of scientific revolution."
2. "Scientists in advisory positions wield enormous power."
3. "The danger is that the new priesthood of scientists may usurp the traditional roles of democratic decision-making."
4. The new economy will be a "PhD-based economy."
5. The present system of advice by scientists to Congress and the Executive is unreliable, unrepresentative, and inefficient.
6. There should be a Department of Science in the President's cabinet. This department would, among other functions, replace the National Science Foundation and the Atomic Energy Commission.
7. "The full impact of the new world of technology is yet to be felt; it lies in the field of computers and data processing machines."
8. In 1980 around $25 billion will be spent for non-defense research and development.
9. Financial support should be shifted, relatively, from the physical to the biological sciences as support for each is increased.

More specifically, Dr. Lapp, in Chapter 2 ("University, Laboratory, 'Think' Factory"), talks about the dangers to universities which come from "big science" and "team science." For example, "academic carpetbaggers" are alleged to obtain advancement by bringing in large government contracts. The government-supported program in high energy physics is criticized as a "tour de force in pure science" of dubious practical value. "Think" factories are: Aerospace, MITRE, IDA, RAND, SDC. Lapp criticizes them for the high salaries of their officers and for the seclusiveness of their research.

After a discussion of the atomic effort and the roles of science and the military in World War II, the author deals, in Chapter 5 ("The Merging of the Cults"), with the defeat of the May-Johnson bill, which would have put atomic energy under military control. Oppenheimer, Conant, and Vannevar Bush testified *for* military control. (Oppenheimer is described as speaking with a "mixture of slang and over-humility.") Harold Urey spoke very effectively against military control. Eventually, Senator Brian McMahon led the fight to defeat the May-Johnson bill. By the way, that's not Lyndon, but Edwin Johnson.

A chapter on "Scientist Citizens" talks about the fallout problem, and includes some colorful invective against Lewis Strauss, attributed to a "highly placed AEC official": "If you disagree with Lewis about anything, he assumes you're just a fool at first. But if you go on disagreeing with him, he concludes you must be a traitor."

"The Public Response" discusses Pauling's famous petition and Teller's theory of underground nuclear testing. Lapp agrees with Churchill that there is danger in "peace through mutual terror," and he states that it is the responsibility of experts to speak out, and of laymen to make their own interpretations.

A chapter on "Science and Congress" recommends the creation of a full-time, central Congressional Research Institute to advise Congress on research and development. Lapp repeatedly criticizes the National Academy of Sciences and the National Science Foundation for doing too little, and further criticizes the Space Board of the National Academy for containing only "space enthusiasts."

Chapter 9, "Scientists and Politics," on the "new breed of scientist-politician," contains a fine analysis of the difference in attitude between politicians and scientists. The scientist is an innovator; the politician prefers the tried and true. "The trick in politics is not to have ideas but to implement them."

Chapter 10, "Scientists and the Executive," is very critical of the President's Science Advisory Committee. (Caltech readers will note that R. F. Bacher and H. P. Robertson were on the first President's Science Advisory Committee. This book is full of references to other Caltech celebrities, including Beckman, Pauling, Harrison Brown, DuBridge, C. C. Lauritsen, Frank Goddard, and others. There are, in addition, nine direct references to Caltech.)

Chapter 11, "The Tyranny of Technology," predicts and characterizes the great future growth and influence of science and engineering.

In the opinion of this reviewer, *The New Priesthood* will reinforce the latent public fear of science and scientists. As we in science and technology know, our only power in government is to frustrate or to abet the research projects of our colleagues. We simply do not, with our computers, make *decisions* about Vietnam or the Dominican Republic. As experts, we should and do make recommendations pertaining to our special fields. As individual citizens in a democracy we share the public duty to commit ourselves to our beliefs. The title of *The New Priesthood*, its chapter headings, and its style are anxious and exaggerated. While we in science and technology may be mildly amused or annoyed by Dr. Lapp's many criticisms of our most honored institutions, the public may be confused, dismayed, and misled. Today, when the public regard of science and technology is at a new height, when the scientific contribution to the national defense and to the public welfare is of a new magnitude, Dr. Lapp's book is a step backward into the dark ages of estrangement of science and the people.

Alumni Books

Mechanics of Incremental Deformations

by Maurice A. Biot, PhD '32

John Wiley and Sons, Inc. $17.50

A collection of papers on the theory of elasticity and viscoelasticity of initially stressed solids and fluids, including thermodynamic foundations and applications to finite strain.

Fundamentals of Microwave Electronics

by Martin Chodorow and Charles Susskind '48

McGraw-Hill $12.50

A graduate textbook on microwave-tube design, both for the experienced reader and for the beginner.