Professor Steinbuch says in the preface that "a superficial critic" might voice the objection that the book is split into two sections (technical part and non-professional philosophy). It does indeed have two parts although there is no reason to object to this arrangement. The first few chapters give a review of the technological aspects of information theory, signal processing, memory and learning devices, and data-control systems. The author presents these topics in a simplified manner by practically eliminating mathematical formulas. Instead, he gives a great number of descriptive pictures. There is, however, a tendency to include too much information per illustration, which does not always keep the message clear and effective.

Most of the information presented in these chapters is not new. They constitute a long introduction to the second and seemingly more important part of the book. In this second section, the author uses a mixture of philosophy and technical analysis to relate manifestations of mental activities directly to various functions of mechanical devices. Discussions of such qualities as learning, motives, and intelligence are centered around repeated statements to the effect that "under no circumstances does it appear to me to be probable or, even less, proven that any superphysical influences have to be assumed for the explanation of mental functions." The author does not ignore the fact that there exist processes of the mind for which a purely physical analogy cannot be given now. This he does not accept as an argument against his approach but interprets it as a probably temporary lack of sufficient insight into information theory.

This book is not a text; it is a thought provoking technical and philosophical essay, sometimes emotional and potentially controversial. The conservative reader may even become angry—it is probably accidental that the very attractive semi-hard plastic binding is fire-engine red.

**Biography of Physics.** By George Gamow. 338 pp. Harper & Brothers, New York, 1961. $5.95. *Reviewed by William F. Meggers, National Bureau of Standards.*

WHEN this reviewer began to study science, he read *A History of Physics* written in 1898 by Florian Cajori. That book discussed some 700 natural philosophers and physicists (Abney to Zeeman) and their works between 384 B.C. and 1898 A.D., but it was written too soon to mention quanta, relativity, atomic and nuclear physics, or such names as Planck, Einstein, or Bohr. During the past four decades at least ten histories of physics, including modern developments, have been published but none is quite like George Gamow's *Biography of Physics* written with the primary aim to "give young readers (and maybe some older readers too) the impulse to study physics". An attempt is made "to give the reader the feeling of what physics is, and what kinds of people physicists are, thus getting him interested enough to pursue his studies by seeking out more systematically written books on the subject".

A biography is a written account of a person's life, but this "Biography of Physics" contains more physics than biography. In each of the eight chapters, the history of an era or subject centers about one or a few leading individuals (with brief biographies and usually recognizable pen sketches by the author), and other physicists are mentioned to fill in the background. Altogether, about 200 physicists are indexed, from Aristotle to Yukawa (Zeeman is not mentioned). There are copious quotes from the works of Archimedes, Galileo (including his recantation extracted by the Holy Inquisition), Newton, and Faraday, but none from later physicists. This might suggest to some readers that modern physicists (excepting Gamow) do not write interestingly about their subject. More than half of this book is devoted to three chapters: Relativistic Revolution, The Law of Quantum, and The Atomic Nucleus and Elementary Particles, which belong entirely to this century.

It is regrettable that the biographies of physicists are often too brief (to show "what kinds of people physicists are"), and sometimes in error. For example, Rydberg is described as a "German spectroscopist" and Balmer as a "German schoolteacher", but in truth Rydberg was a Swede and Balmer a Swiss. Also Rutherford is said to have discovered alpha, beta, and gamma rays in 1899, whereas, the last is usually credited to Villard. In this first edition, there are also a number of misspelled or misused words; perhaps the best example is found in a statement "about Otto von Guericke's invention of the air plumb". These minor defects are compensated by delightful descriptions of physical experiments, by clever cartoons illustrating the principal physical principles, and by several anonymous, amusing poems, including a limerick! We sincerely hope that this book will attract more people to physics, inspire talented young students to major in it, and alleviate the general public's abysmal ignorance of this vital subject.

**Modern Physics Buildings: Design and Function.** By R. Ronald Palmer and William Maxwell Rice. 324 pp. Reinhold Publishing Corp., New York, 1961. $13.50. *Reviewed by J. L. Olsen, Swiss Federal Institute of Technology.*

MANY physicists must at some point in their career help design a new laboratory. For this, a mixture of good ideas and solid facts is needed and just such a mixture is provided by this book. Plans of thirty-three recently completed or designed physics buildings are given which incorporate many admirable ideas and provide a goldmine of stimulation and information. Brilliant, boringly efficient, and perhaps plain boring designs are included. This is all to the good and this section alone would make the book worthwhile.

The text also includes chapters on space requirements, floor plans, lecture rooms, research laboratories,


PHYSICS TODAY