anced collection of photographs and drawings to illustrate this book, including some from the work of farmer-photographer Wilson Bentley of Vermont, whose photomicrographs of snow and frost were collected over a period of 40 years before Nakaya. Through his acknowledgments and a good index, it is apparent that he has drawn upon a wide knowledge and familiarity with snow-lore and snow-science. He makes room for the Abominable Snowman and Alfred Wegener, Homer and Chaucer, Olaus Magnus and Vincent Schaefer, Byrd and Hobbs, "Snowshoe" Thompson and Langmuir.

This is by no means a textbook or even a technical book, though it treats of a subject that has a technical side. From the very first chapter one knows that the author loves winter and the snow, and before bumping up against the glossary, the average reader will also have an appreciation of what scientists have accomplished in finding out how, when, where, and why it snows, and of the men (other than Bell) who have left "footprints in the snows of time" for those who would follow. *The Wonder of Snow* belongs on every high-school science reference shelf and will make a splendid gift for youngsters and oldsters alike who have a fondness for nature and out-of-doors—and snowflakes.

HERBERT B. NICHOLS
U.S. Geological Survey, Washington, D.C.

H. A. Lorentz, Impressions of His Life and Work. G. L. de Haas-Lorentz, Ed. North-Holland, Amsterdam, 1957. 172 pp. + plates. $3.

The purpose of this volume is to give an impression of one of the greatest physicists of the first quarter of our century.

Most of the book is taken up by the very personal reminiscences of Lorentz's eldest daughter, herself a physicist and the wife of a physicist. Interspersed between these reminiscences are contributions by friends and pupils. Fokker gives a semipopular account of Lorentz's *oeuvre,* Van der Pol assesses the importance of Lorentz's work in the field of modern telecommunication, Thysse tells the fascinating story of how Lorentz calculated the influence of the proposed reclamation of most of the Zuyder Zee on the behavior of the tides in the remainder, and Casimir discusses the influence of Lorentz's ideas on modern physics.

One is left with a very definite picture of the man and physicist Lorentz, not least through the short contributions by Einstein (especially written for this volume) and Ehrenfest (a translation of his speech at Lorentz's funeral). Anybody interested in the history of science and in scientists as human beings will read this volume with great profit.

D. TER HAAR
Clarendon Laboratory, Oxford

Electricity and Magnetism. B. I. Bleaney and B. Bleaney. Clarendon Press, Oxford, England, 1957 (order from Oxford University Press, New York). xiv + 676 pp. Illus. $10.10.

Here is just the book for a scientist who cultivates another field to have on his shelf for easy reference. The authors, B. I. and B. Bleaney, both lecturers in physics, at different colleges of Oxford University, hope to fill "the need for an up-to-date text on *Electricity and Magnetism* which would cover the whole field, both the theory and the practice," for their undergraduate students, and a few "chapters have been included which may form part of a graduate course."

They use the word *comprehensive,* which is surely no overstatement, for after eight chapters on "fundamentals at an elementary level," they romp through chapters on alternating-current theory; electromagnetic waves (including filters, transmission lines, and waveguides); electromagnetic machinery; thermionic vacuum tubes (three chapters, and it must be these they had in mind when they spoke of "practice"); and alternating-current measurements. After these come the chapters that I suppose are suitable for a graduate course: theory of the dielectric constant; theory of conduction in the solid state; the atomic theories of paramagnetism, ferromagnetism, and antiferromagnetism; and magnetic resonance. There is a final chapter on units, and I am happy to see that the authors use the rationalized metre-kilogram-second system throughout the book.

It is hardly necessary to remark that a book with this coverage, even a book of nearly 700 pages, can never be profound. But it is surprising how thorough the book can be and still remain readable and easy to follow. This argues careful planning and elimination of nonessentials. I find that when I read in unfamiliar fields, the book is interesting and informative; when I read in fields that I know well, it is clear and accurate.

Definitely this is a book to be taken down off the shelf when some information is wanted on, say, contact potentials or nuclear magnetic resonance. You will find a brief and illuminating section on either. This may be enough, but it may very well be that you will then want to read further in more detailed treatises. This is where Bleaney and Bleaney fail us, for they have missed the opportunity to give lists of references for the inquiring reader. Perhaps in some future edition . . .

You should not approach this book without a previous knowledge of general physics, such as most American colleges give to freshmen. In mathematics, the language of calculus is supposed to be familiar. Vector analysis is used, with a notation nearly enough like the common style to keep one from feeling much annoyance on this score; the appendix is adequate for purposes of review rather than of learning.

The exposition is clear and straightforward. The style is simple, but it has an elegance that we have come to expect of the English universities. *Electricity and Magnetism* is pleasant reading and, in brief, is a book I shall be glad to have for my own frequent use.

H. H. SKILLING
Stanford University

Modern Mathematics for the Engineer. Edwin F. Beckenbach, Ed. McGraw-Hill, New York, 1956. xx + 514 pp. Illus. $7.50.

The Department of Engineering at the University of California has organized a series of lecture courses in modern physics, mathematics, and chemistry. The objective was to acquaint engineers with some late scientific discoveries and to stimulate their application in engineering.

The first set of these lectures—those on physics—was published a few years ago and contained an authoritative, broad, and largely nontechnical presentation of a large part of modern physics, with very little use of the mathematical formalism. The present volume, covering the lecture course on mathematics, has a quite different character. It covers topics which can be treated by differential and integral equations, probability and game theory, and computational methods—topics which form a smaller, though fundamental, part of modern mathematics.

The book contains an "Introduction" (Weller) and is divided into three parts. The first part is called "Mathematical Models." There are chapters on oscillations (Lefschetz), stability theory (Bellman), calculus of variations (Hestenes), and hyperbolic (Courant) and elliptic (Schiffer) partial differential equations. Two chapters are on applications: exterior ballistics (Green) and elastostatics (Sokolnikoff). Obviously these applications were selected because the lecturers happened to be specialists in these topics.