La Chimie Nucléaire et Ses Applications. M. Haïssinsky. Masson, Paris, 1957. 651 pp. Illus. Cloth, F. 5600; paper, F. 5000.

In the case of a rapidly expanding field, up-to-date books are very important, and this one answers that need in nuclear chemistry. Prior knowledge on the part of the reader of the fundamental laws of radioactivity is assumed by the author.

The author points out that his work encompasses a greater field than the title would indicate. He has avoided in the title the use of such expressions as radiochemistry and tracer chemistry. He feels that this semantical approach is the least confusing.

At the risk of contributing to this confusion in nomenclature, I suggest that the book can be somewhat arbitrarily divided into four broad parts. The first eight chapters and one later chapter could be classed as nuclear chemistry and nuclear physics. The chapters which constitute this section are, "A brief history of radioactivity," "Nuclear chemistry and nuclear physics," "Fundamental particles," "The nuclei," "Spontaneous radioactive transformations," "Nuclear reactions," "Nuclear fission and reactors," "The natural radioelements," "The transuranium elements," "Chemical effects associated with nuclear transformations," and "Dissipation in matter of the energy of radiations."

The physical chemistry section includes: "Isotopic effects and separations," "Isotopic exchange," and "Distribution of a micro component between two phases."

The applications of natural and artificial tracers in the following fields are described: astrophysics, geology, and geochemistry; electrochemistry; analytical chemistry; chemical reaction mechanisms; biochemistry, physiology, and medicine; and technical and industrial applications.

The fourth part is devoted to radiation chemistry and radiation physics: chemical actions of ionizing radiations; radiolysis of water and aqueous solutions; radiolysis of organic compounds and biological effects of radiations; actions of radiations on solids; and fluorescence and coloration produced by radiations.

There is no part of the book devoted expressly to chemical separation procedures and techniques. However, this topic is given considerable attention in the sections on nuclear chemistry and physical chemistry.

There are a sufficient number of references to original publications to supplement sections of individual special interest.

In order to discuss all of the topics listed above, a book must necessarily be written in a concise manner. However, this work is clear and readable. It should be of value both to individuals who are primarily interested in nuclear properties and to those who use radioactivity in tracer applications.

WARREN G. SMITH
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Linear Algebra for Undergraduates. D. C. Murdoch. Wiley, New York; Chapman & Hall, London, 1957. xi + 239 pp. Illus. $5.50.

Of the many books on matric theory which have appeared in the last decade, few are aimed directly at the undergraduate. This book seems to be so directed. The author states that the only prerequisite to its study are college algebra, including determinants and some knowledge of three-dimensional analytic geometry. However, a little more mathematical maturity would stand the student in good stead, since contact is made with vector analysis, systems of differential equations, and dynamics. These can be by-passed, however, and an appendix of 32 pages gives a good summary of solid analytic geometry.

The approach is by means of vector spaces. The usual elementary properties of matrices are developed, including quadratic form theory with applications to analytic geometry. Elementary divisor theory is entirely omitted, and the space devoted to the similarity of matrices is small.

The book contains relatively few of the concepts of abstract algebra, which I regret, for here is a place in the curriculum where a number of abstract concepts could be introduced, well clothed, in the flesh. Many important concepts are introduced casually in the problems; among these are symmetric, skew symmetric, and nilpotent matrices and the congruence of matrices. But, all in all, this should be a satisfactory text at the level for which it is designed.

C. C. MACDUFFEE
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Geologic Field Methods. Julian W. Low. Harper, New York, 1957. xv + 489 pp. Illus. Professional edition, $6; text edition, $4.50.

Prepared for the student or inexperienced field man, this book contains many useful details concerning techniques and methods. Suggestions for the use of the plane table, hints for the preparation of geologic maps, description of work with key beds, instructions for measuring dip and strike and for computing the thicknesses of formations, and directions for making field sketches are among the subjects comprising the ten chapters. The author's selection of topics must have been governed largely by the questions asked repeatedly by the immature field geologist. This book therefore meets a felt need, and I am sure that many teachers will recommend it to their students.

Several of my colleagues who have examined this volume hold the view that the addition of carefully selected bibliographic references would overcome the most serious shortcoming of the book. To this I would add a plea for better English. The monotony, for example, of reading sentence after sentence beginning with "it is" does not add force to the exposition.

This book is a welcome addition to the library of the geologist.

HUBERT G. SCHENCK
Stanford University

Laboratory Glass-Working for Scientists. A. J. B. Robertson, D. J. Fabian, A. J. Crocker, and J. Dewing. Academic Press, New York, 1957. xiv + 184 pp. Illus. $4.

This little volume contains a great deal of valuable information regarding the physical and chemical properties of various glasses used in scientific laboratories and describes in an easily understandable fashion the manipulations of glass that are of most importance to the experimental scientist. Far from trying to teach the skills possessed by professional glass blowers, the authors have emphasized methods which are relatively easy and simple and which, while not necessarily producing the most beautiful result, will enable the reader after some practice to assemble a usable piece of apparatus. Facilities for performing many of the operations and some "tricks" described in this book are not readily available everywhere. A fairly extensive chapter deals with the equipment needed for a glassworking shop, stressing the point that while a great many operations can be carried out with a few primitive tools, it is false economy to waste valuable research time for lack of proper shop facilities. The chapter on basic glassworking operations contains the usual information on bending, joining, and simple blowing procedures; methods for cementing and metalizing of glass are also described. Other chapters deal with the use of glassworking machines, with glass-to-metal seals of various kinds, and with the design of simple and of somewhat more complex pieces of apparatus, like McLeod gauges, diffusion