ties of the feldspars, and a collection of historical notes and old names. The book is profusely and well illustrated and handsomely printed.

Feldspars are a difficult subject on which to write a book. There have been nearly as many advances in our fundamental knowledge of feldspars in the last two or three years as in all previous years, and therefore, although the author provides excellent coverage of the literature through 1967, and although the coverage is not dogmatic and he indicates what problems are in need of further study, the book is out of date.

The book is also flawed by loose organization, uncritical discussion of the cited references, and an imprecise and confusing terminology. Some material is repeated and many subjects are mentioned long before they are fully explained. The chemistry of the feldspars is, for reasons obscure to this reviewer, treated as a separate subject only in the preface. The concept of "structural state" is not treated as such. There is in fact no attempt early in the book to set up a chemical-crystallographic framework in which feldspar composition, phase relations, and crystal chemistry could be discussed. There is hardly any critical synthesis of earlier work. Authors are quoted correctly in context, but contradictions arise from the inclusion of data from papers that supersede earlier work which may be cited elsewhere in the book. There are occasional factual slips, as when the author states (p. 133) that artificially prepared maximum-microcline–low-albite solid solutions will break down in a few days at room temperature. The reader is plagued by the lack of a consistent nomenclature and classification of feldspars, despite the fact that the entire first section is devoted to this topic. Mineral names, particularly those of alkali feldspars, are used loosely, often with meanings based on field occurrence or morphology rather than on strictly applied chemical or x-ray crystallographic characteristics. Many mineral names (clevelandite, anemousite, isomicrocline, and moonstone, to name a few) are defined and used in the text when they would be more properly placed in a separate glossary.

In summary, it is my opinion that the present volume will be of limited use either to the student or to the professional mineralogist. The professional mineralogist will find it useful mainly for the completeness of the bibliography and as a guide to the critical problems in feldspar mineralogy for which more data are needed. The deliberate omission of determinative tables reduces its usefulness as a text for students. The book is, however, a necessary first step toward synthesizing the knowledge gained so far on feldspars, a task which can approach completion only when feldspar research reaches a breathing point.

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Radiation Detection

Semiconductor Detectors. G. BERTOLINI and A. COCHE, Eds. Interscience (Wiley), New York; North-Holland, Amsterdam, 1968. x + 518 pp., illus. $22.50.

This book, well and clearly written by the editors and a number of others prominent in the radiation detector field, concerns itself with the uses and study of silicon and germanium radiation detectors having good energy resolution.

The topics covered include semiconductor properties of silicon and germanium; the behavior of lithium in silicon and germanium; theoretical determination of the mean energy for electron-hole pair creation and the Fano factor; characteristics and construction of diffused, surface barrier, and lithium-drifted detectors; low-noise electronics, pulse-shape and time-resolution studies; neutron, heavy-charged-particle, beta-ray, x-ray, and gamma-ray spectroscopy, including particle identification and channeling; and the search for new semiconductor materials for gamma-ray spectroscopy. The chapter on this last subject, by G. W. Mayer, also sheds light on fundamental properties of compound semiconductors.

Considerable information is included from papers presented at the 1966 scintillation and semiconductor counter symposium, the 1966 New York meeting on semiconductor materials for gamma-ray detectors, and the 1967 Gatlinburg meeting on semiconductor detectors.

According to the editors, this volume is directed both to nuclear spectroscopists and to students of physical properties of semiconductors; one would have to agree that these two groups could derive considerable benefit both from a first reading of it and from having it available for reference. The chapters on spectroscopy are alone worth the price of admission and will be invaluable to the physicist attempting to choose the right detector for his experiment.

The bibliography (including many useful survey articles) is excellent. Delightfully, there are only five "private communications" out of nearly a thousand references.

This book provides instant access to almost everything in the literature through 1967 but does not contain much new information. The editors, of course, cannot be blamed for the absence of information on recent advances in certain fast-moving areas, such as the very-low-noise field effect transistors that became available about a year ago.

The section on low-noise electronics includes a good fundamental discussion of noise in field effect transistors and an analysis of various pulse-shaping networks, but lacks a thorough discussion of how to use d-c restorers and any consideration of practical fine tuning of field-effect-transistor preamplifier systems for optimum performance. A full treatment of these subjects would be invaluable to many experimenters.

Although this book may be of only modest value to producers of semiconductor detectors, it will be a valued possession of those who actually employ them.

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Atomic Scattering

Electronic and Ionic Impact Phenomena. H. S. W. MASSEY, E. H. S. BURHOP, and H. B. GILBODY. Second edition, in four volumes. Vol. 1, Collision of Electrons with Atoms. H. S. W. Massey and E. H. S. Burhop. xx + 664 pp., illus. $32. Vol. 2, Electron Collisions with Molecules and Photo-ionization. H. S. W. Massey. xviii pp. + pp. 665–1316 + plates. $32. Oxford University Press, New York, 1969. International Series of Monographs on Physics.

It has become customary, in the atomic scattering field, to divide the subject matter roughly into two parts. In the first, the projectile is a light particle such as an electron, a positron, or a photon; in the second, both projectile and target are heavy atoms, ions, or molecules. The division is made because of the natural grouping of experimental and theoretical techniques as well as the historical divi-