few typographical errors were found. In the formula for silvering mirrors, on page 343, caustic soda may be meant instead of "soda."

Altogether, the book is excellent and should be of value, not only to the professional optical shop workmen and apprentices for whom it was prepared, but also to scientists and amateurs who have any interest in the grinding and polishing of glass and crystals. It should be in every optical workshop.

LYMAN CHALKLEY
5320 Middleton Lane, Washington 22, D.C.

Matthews' Textile Fibers. Their physical, microscopic, and chemical properties. Herbert R. Mauersberger, Ed. Wiley, New York, and Chapman & Hall, London, ed. 6. 1954. x + 1283 pp. Illus. $16.50.

This sixth edition of an important reference work originated by J. Merritt Matthews 50 years ago has become a multiauthored compilation of which Mauersberger serves as a coauthor and editor. The great advance of the textile industry in production of synthetic fibers such as nylon, Dacron, Orlon, Acrylon, and Dynel, has required extensive additions to a text designed to cover the properties of these materials and the procedures for identifying them, either alone or mixed with other fibers. The book has been revised throughout with incorporation of new illustrations, new technical data, and extensive additions, not only in synthetic organic fibers, but also in the discussion of inorganic (glass) fibers, and identification and quantitative analysis.

In the discussion of each of the principal types of textile fibers, consideration is given to history and use, statistical information, microscopic characteristics, physical and optical properties, and chemical properties. The latter include effects of solvents, acids, alkalis, and the general dyeing properties of the fiber. The book is limited to the fibers and spun threads, and does not include characterization of woven fabrics produced from these fibers.

WALLACE R. BRODE
National Bureau of Standards

Experimental Inorganic Chemistry. W. G. Palmer. Cambridge Univ. Press, New York, 1954. 578 pp. Illus. $9.

The author has written a book that combines the theory and practice of inorganic chemistry in a usable, useful, practical, and interesting fashion. It is recommended to all teachers of inorganic chemistry (not to be confused with general chemistry) as a pedagogically stimulating textbook. Emphasis is placed on the laboratory approach. Directions are given, not only for the synthesis of large numbers of typical and representative compounds but also, in many instances, for the analysis of the resulting products. "In analyzing the compounds they [the students] have themselves prepared they find no drudgery."

Some readers will argue that the organization of subject matter on the basis of the Mendelyeev classification of the elements is not modern, but this is a minor point since the theoretical material is most certainly up to date. Commendable is the emphasis on structural inorganic chemistry that constitutes an important part of both the introductory summary and the theoretical material preceding the experimental operations in each chapter. Specialists may also criticize choice of theoretical matter, but the teacher will find this book to be the best, if not the only "teachable," textbook covering the practice of inorganic chemistry. It emphasizes the necessity for analysis as an *important* adjunct to synthesis. Theory is employed to furnish the background for experimental operations. Such an approach is in itself both refreshing and novel, since so many chemists seem to forget, in their Aristotelian quest for knowledge, that chemistry deals with matter. It is a well-balanced textbook and should find wide and favorable acceptance.

L. F. AUDRIETH
Department of Chemistry and Chemical Engineering, William Albert Noyes Laboratory, University of Illinois

The Determination of Crystal Structures. H. Lipson and W. Cochran. vol. III of *The Crystalline State,* Lawrence Bragg, Ed. G. Bell, London; Macmillan, New York, 1953. ix + 345 pp. Illus. + plates. $8.

Lipson and Cochran's volume is the third of a series under the general title *The Crystalline State,* edited by Sir Lawrence Bragg. Two decades have passed since the appearance of the first volume, *A General Survey,* written by the editor himself, and the very great advances that have been made in x-ray analysis since Bragg's volume appeared are partly evidenced by a comparison of it with the present work. Volume II, *The Optical Principles of the Diffraction of X-Rays,* by R. W. James (1950), is chiefly devoted to the physics of x-ray scattering.

Lipson and Cochran have concerned themselves with the problems of structure determination "from the stage at which a set of structure amplitudes has been obtained to the final accurate positioning of the atoms." The treatment is practical throughout; matters that are not immediately applicable—for example, the full development of space-group theory—are omitted. The series of volumes does not provide a discussion of modern experimental methods; perhaps a review of these is contemplated in a future volume.

Here is a work of tremendous practical value to crystal-structure analysts; and at the outset, I express my personal admiration for the amount of material and experience that have been assembled and the splendid way in which the material is presented.

The work opens with a review of x-ray optics. A discussion of the results of space-group theory follows. The third and fourth chapters are concerned with techniques for computation of structure factors and Fourier series, respectively. The following four chap-