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LUDWIG REIMER: ELEKTRONENMIKROSKOPISCHE UNTERSUCHUNGS UND PREPARATIONSMETHODEN *Second revised edition. Springer-Verlag, Berlin, 1967, XII + 598 pp., 247 figs. DM 98.—*

The second edition of any scientific textbook always indicates, how well the first edition was received by its readers. Because the first edition of professor Reimer's textbook on electron-microscopic examination- and preparation methods was both useful and cosmopolitan, the same general plan has been followed in the re-edition, which has been completed by recent knowledge obtained from published proceedings of conferences and from original papers in scientific journals.

While proceedings of conferences contain contributions by various authors, the writer of a textbook has to consider all aspects of E-microscopy in general and choose only items, which are most essential for the problem in question. Prof. Reimer's successful compilation of all essential knowledge available has to be ascribed to the fact that he himself developed the theoretical fundaments of E-microscopy in his scientific specialization.

The book is divided into two almost equal parts, dealing with examination- and preparation methods. Part I is concerned with the physics of the E-microscope in general, analyzing all factors influencing the quality of the image, whereby all possibilities for obtaining the most perfect image and its reproduction on photographic material have been considered.

Although the E-microscope represents a standard unit, usually unchangeable by the research worker, the writer gives practical advice on its top functions, magnifications, on a number of optical constants, on diffraction patterns and contrasts, on changes in the material examined under the microscope, on maximum contrast in normal and also stereoscopic photography. These data are of greatest importance to every research worker.

Part II, dealing with preparation methods, is even more important and more valuable from the practical point of view. All methods, now considered classical working procedures in modern electron microscopy, are discussed together with their diverse variants. Also information is available on the most modern perspective procedures described in the latest literature. The individual chapters deal with the preparation of lattices, evaporation methods, the preparation of supporting films, with the surface replica processes, with thin metal foils, the embedding and sectioning of ultrathin sections, preparing of preparations from organic microparticulates (bacteria, viruses, homogenates a. o.); an illustration on the use of the autoradiographical method for the elaboration of materials has been added.

Although the author's special orientation is directed towards the physical principles of electron microscopy, great attention has been given to the biological part. Numerous methods such as replica a. o. are discussed in detail on the grounds of the author's experiences with work on metallurgic material. Most revealing and instructive are the many illustrations, photographs and drawings, interspersing the clearly formulated text, which make even the most intricate theoretical problems accessible to the reader. The references following each chapter comprise all literature published until 1964, completed with citations up to 1966.

The work will be of value to all serious research workers, who wish to develop better understanding of the possibilities of electron microscopy. The typographical arrangement of the book conforms to the highest standards.

RNDr. Jaroslav Weiser, D. Sc.