or spelling (mole, gm, sec) and duplicate use of symbols (X for coordinate and mol fraction, P for vapour pressure and probability of formation). As is quite common among US authors, far too little reference is given to European researchers. Even in an introductory text authors who have made outstanding contributions to the subject should not be missing (in the present case *inter alia* Stranski, Budevski, Kaishev, Hartman).

The book provides interesting reading, is well illustrated, and the quality of printing and binding is excellent. It can truly be recommended.

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Dislocations in solids. Edited by H. SUZUKI, T. NINOMIYA, K. SUMINO and S. TAKEUCHI. Pp. xviii+672. Utrecht: VNU Science Press, 1985. Price DM 265.00.

One of the less spectacular but nevertheless significant events of the year 1984 was the fiftieth anniversary of the recognition of the dislocation as the 'carrier' of plastic deformation in crystals. In 1934 Orowan, Polanyi and Taylor introduced the first correct models to account for the plastic properties of crystalline materials. The anniversary was marked by a number of conferences where pioneers and younger disciples of the field met in varying composition to 'celebrate', *i.e.* to present papers.

The Yamada Science Foundation has been a very active sponsor of international meetings in recent years. Topics and invited lectures are always very well selected, and the high standards of these conferences have found worldwide recognition. The ninth Yamada Conference, on 'Dislocations in Solids', was held in August 1984 in Tokyo. It was organized by the editors of these conference proceedings. Following the general routine pattern, camera-ready texts of 146 papers are presented in about 670 pages. There is an index of authors, which includes many of the leading experts in the field, but no attempt has been made to provide some guidance through the immense amount of information by a subject index.

The papers are generally of high quality and show that the refereeing process was taken seriously. The nine invited papers (F. R. N. Nabarro on historical aspects, K. Kawamura on long-range topological disorder, J. M. Galligan on dislocation 'flutter', T. Suzuki and H. Koizumi on quantum tunneling of dislocations, J. De Hosson on dislocation dynamics, H. Alexander, H. Gottschalk & C. Kisielowski-Kemmerich on the dislocation core structure in Si, R. Jones on electronic spectra of dislocations in Si and diamond, V. I. Nikitenko, L. M. Dedukh & V. K. Vlasko-Vlasov on dislocations and other defects in magnetics, D. R. Nelson on defects in amorphous materials) are well suited to broaden the view of the field.

The historical foundation of dislocations in solids has many facets. Nabarro draws attention to some very early experimental and theoretical investigations where the basic idea of a crystal dislocation was almost there ('tantalizingly close'). In retrospect, it seems an unbelievably long time from the turn of the century, when the elastic (continuum) theory for dislocations was available (Weingarten, Timpe, Volterra), until 1934, when the celebrated event occurred. In a concise and yet amusing way, Nabarro guides the reader through this story of close but not quite correct guesses and correct but (at the time) not verifiable ideas. We know today that etch pits due to dislocations ending on a crystal surface had already been observed in 1865, and the first known observations of a dislocation in the bulk (decorated, in rock salt) dates back to 1905. Nabarro illustrates how Prandtl, Dehlinger, Yamaguchi and others contributed important steps toward the concept of a crystal dislocation until the correct pattern finally emerged.

The other invited papers expand the view into the future as the material presented here is related to some of the most advanced experimental techniques and theoretical ideas in dislocation research. Though mostly written for specialists, they will give an impression of current activities to the non-specialist, too. The contributed papers (of four pages each) are mostly highly specialized research reports. They represent the bulk of the 15 chapters ranging from elastic theory and fracture to atomic structure, and covering dislocations in metals, semiconductors and ionic crystals as well as grain boundaries in crystalline materials and defects in amorphous structures.

The book will be useful to anyone who wants a quick reference guide to current topics in dislocations. Together with the other books produced in the wake of the 1984 celebrations it shows that dislocations have matured since 1934, but that many open questions also remain to be solved with today's and tomorrow's advanced techniques.

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Books Received

The following books have been received by the Editor. Brief and generally uncritical notices are given of works of marginal crystallographic interest; occasionally a book of fundamental interest is included under this heading because of difficulty in finding a suitable reviewer without great delay.

The physics of magnetic recording. By C. D. MEE. Pp. xvii+270. Amsterdam: North-Holland, 1986. Price Dfl 75.00. This book is in fact a reprinting of the book which originally was published in 1964.

Halide glasses for infrared fiberoptics; proceedings of a NATO workshop. Edited by R. M. ALMEIDA. Pp. xi+412. Dordrecht: Martinus Nijhoff, 1987. Price Dfl 195.00, US $85.50, £69.95.