declared compulsory reading for crystallographers wishing to make electron-density studies based on diffraction measurements. The most accurate available crystal structures, with respect to both molecular geometry and motional description, come from low-temperature (*e.g.* 15 K) neutron diffraction analyses. George A. Jeffrey (29 pp.) shows how results from such analyses compare with those from *ab initio* computations and how subtle differences provide information about how molecules may be deformed by crystal field effects.

It is not so well known that precise structural parameters for small symmetric molecules can be derived from NMR coupling constants measured in oriented solvents, *i.e.* liquid crystals. This topic is discussed in a chapter by Peter Diehl (23 pp.), who shows that structural parameters obtained in this way are quite comparable with those obtained by other spectroscopic techniques or by gas-phase electron diffraction.

The next three chapters deal with computational methods. James E. Boggs (14 pp.) describes the calculation of equilibrium geometries and vibrational constants by molecular orbital calculations; results for small symmetric molecules are comparable to those from good experiments, and the range of application of the method will surely be extended as even bigger and better computers become available. Norman L. Allinger has a chapter (19 pp.) on the development and present status of molecular mechanics and Frank H. Allen has one (24 pp.) on the retrieval and analysis of molecular structural information from the Cambridge Structural Database.

The last six chapters deal with applications in the border areas between structural and mechanistic chemistry. Georges Wipff and Stéphane Boudon (33 pp.) discuss mainly the structural expression of electron delocalization and other stereoelectronic effects; Valeria Ferretti, Katharina C. Dubler-Steudle and Hans-Beat Bürgi (25 pp.) explain how structure correlations can be used to derive information about chemical reaction pathways and energy surfaces for chemical reactions; Aldo Domenicano (32 pp.) reviews structural substituent effects in benzene derivatives; Joel Bernstein (29 pp.) examines the effect of the crystal environment on molecular structure - comparison of molecules in different polymorphic modifications can be most informative. Jeremy K. Burdett swings expertly between experiment and theory in his chapter (32 pp.) where he describes how accurate structure determination has illuminated several problems of inorganic chemistry - the role of agostic hydrogen atoms in transition-metal chemistry is one. And, finally, Vincenzo G. Albano and Dario Braga (25 pp.) discuss structural variability in metal cluster compounds.

This book has been a long time in the making. Its starting point was a set of lecture notes prepared by the instructors at an International School of Crystallography course entitled 'Static and Dynamic Implications of Precise Structural Information' held at the Ettore Majorana Centre for Scientific Culture at Erice, Sicily, in 1985. The seven-year interval between the Erice school and publication of the book has not been in vain. The authors of the various chapters and the editors have evidently put in a great deal of work, with the result that most contributions have gained in thoroughness, perspective, and clarity. In pleasing contrast to most other multi-authored books of this kind, effective editing has reduced repetitious overlap between the various contributions to a minimum; in its place, extensive cross referencing connects related material in different chapters. In addition, the material has been kept reasonably up to date with many references to the post-1985 literature. The overall result is that the original lecture notes have been transformed into an important book which will remain the standard work for teachers, students and researchers for many years to come.

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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.*

**Structure reports for 1984. Vol. 51B. Parts 1 and 2. Organic compounds.** Edited by GEORGE FERGUSON. Pp. vi + 2094. Dordrecht: Kluwer Academic Publishers, 1992. Price Dfl 680.00. ISBN 0-7923-1758-0. The present volume continues the aim of *Structure Reports* to present critical accounts of all crystallographic structure determinations. 724 pages are devoted to organic compounds, 256 pages to main-group compounds and 977 pages to transition-metal compounds. Subject, formula and author indices are provided.

**Quasicrystals, networks and molecules of fivefold symmetry.** Edited by I. HARGITTAI. Pp. xiii + 314. New York, Weinheim and Cambridge: VCH Publishers, 1990. Price £55.00. ISBN 089573723X. A review of this book, by J. H. Robertson, has been published in the January 1993 issue of *Acta Crystallographica*, Section A, pages 214-215.

**Introductory solid-state physics.** By H. P. MYERS. Pp. xi + 546. London: Taylor and Francis, 1990. Price (paper) £18.00. ISBN 0850667615. A review of this book, by B. J. Hickey, has been published in the January 1993 issue of *Acta Crystallographica*, Section A, page 215.