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**BOOK REVIEWS**

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**Mixed Crystals** by A. I. Kitaigorodsky (Springer GmbH & Co., Ausbeferungs, Gesellschaft, Postfach 105 160, Haberstrasse Be7 Germany) 1984, pp. 360, Price: US \$43.70.

The book essentially deals with the crystal chemistry of mixed systems. A variety of mixed systems of intermetallic, inorganic, organic, polymeric and biological origin has been discussed in a lucid and concise manner. The author has interwoven such a bewildering array of topics through the connecting thread of the principle of close packing. *The key-to-the-lock principle* of packing of molecules in crystals developed by the author earlier for mainly organic (molecular) solids has now been successfully applied not only to organic solid solutions but also to polymer systems. In the end, the author goes on to apply the principle to biopolymer systems as well, and asserts that the principle is of universal applicability in dealing with the structure of matter.

The first chapter presents a particularly fascinating account of the history of mixed crystals much of which is applicable to solid state-structural chemistry in general. In chapters 2-6, a useful discussion of introductory aspects, which includes phase diagrams, crystallography, thermodynamics of solid solution formation and x-ray scattering, is presented. The approach is refreshingly novel, combining the traditional with the latest. The formalism of Khachatryan dealing with concentration waves and diffuse scattering of x-rays due to short range order in solid solutions are noteworthy. Much of the book is devoted to organic solid solutions where the author has made immense original contribution.

The book is written in a simple, pleasant style and nearly free from typographical errors. There are a number of useful illustrations and a collection of good references on each section. While the book may not be useful as a text in a course on solid state science, it will certainly be of interest to practitioners of solid state science, be they physicists, chemists or technologists interested in the general area of mixed crystals.

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**Perspectives and Recommendations** by Gordon Bixler and L. W. Shemilt (Published by International Rice Research Institute, Los Banos, Laguna, Philippines, P.O. Box No 933, Manila, Philippines) 1984, pp. 164. Price - Not given.

The International Union of Pure and Applied Chemistry (IUPAC) established immediately after World War I continued till the early '70s to deal with various theoretical and applied aspects of chemistry, in accordance with its primary objective. However, in the early 1970s, several Members of the IUPAC Governing Bodies proposed that its scope be extended beyond these activities and consequently in 1975, the IUPAC started its CHEMRAWN programme, the acronym for Chemical Research Applied to World Needs. The first meeting of CHEMRAWN held in Toronto, Canada in July 1978, very relevantly dealt with the possibilities of making the best possible use of both the existing and the future sources of organic raw material, since by that time, the oil crisis of 1973 had started making its impact felt not only on the Third World Countries but even on most of the European nations. The second meeting of CHEMRAWN held in December 1982 at Manila, Philippines had as its focal theme: The International Conference on Chemistry and World Food Supplies: the New Frontiers. India can feel proud of the fact that among the leading organisers of CHEMRAWN was Dr M. S. Swaminathan, one of the most distinguished agricultural scientists of this century, the Director General of the International Rice Research Institute, Manila.

This slim, beautifully written and printed book, in its 164 pages, contains not only a wealth of information but also points out in blunt and direct terms the formidable task to which not only the agricultural scientists but all those who are connected in one way or the other with meeting, the needs of food for this planet's ever increasing population must address themselves immediately, unless the gloomy predictions of Malthus should one day become a grim reality. The contributors to this book are some of the foremost scientists, administrators and policy planners. To the present reviewer, it is extremely difficult to single out any one of the eight Plenary lectures as the best of all. However, those by Dr Norman Borlaug, Dr David Hopper and Dr M. S. Swaminathan are the

three most thought-provoking, as is the Foreword by Dr Cyril Poonamperuma. The Recommendations, pithily stated in only five pages, are apt and to the point, as is the Chapter entitled "Chemistry and World Food Supplies". The reviewer cannot resist the temptation of quoting the following two statements from that Chapter:

- (1) "Farmers, livestock keepers, and food processors and distributors will not only have to produce, process, and distribute twice as much food as they do now. They will also have to change the mix among cereals, meats, and vegetables as well as increase production and distribution by perhaps as much as another 100% to satisfy the greatly expanded demand in developing countries for other than the simplest of diets based primarily on the major cereals."
- (2) "The task of feeding present and future populations is too great and too important for energy to be wasted on confrontations among organisations and people concerned with accomplishing the task."

This is a book which should find a pride of place on the bookshelves of not only all the important libraries of the world, but also on the tables of agricultural scientists, administrators, planners and policy makers all over the world, since food has been and shall continue to be basic need of mankind. This book is of special relevance in view of the stark contrasts in

matter of affluence of food, feed and fodder between the countries belonging to the European Economic Community and the Third World Countries, which have been so forcefully highlighted by Dr Bruno Kreisky, former Chancellor of Austria in his memorable Acceptance Address on the occasion conferring him with the prestigious Jawaharlal Nehru Award for International Understanding for 1983 by the President of India on January 11, 1985 at the Teen Murti House, New Delhi. As Dr Kreisky aptly stated, "the imposition of the conservative western philosophy" was at the root of all the evils in the world. Fortunately, countries like India and China have amply demonstrated their ability to keep famine, starvation and death at bay by an admirable amalgam of following pragmatic policies blended with an increasingly greater use of indigenous technologies. The present reviewer has every hope that these extremely sound policies laid down by the architects of independent India would be followed and even strengthened further by the new Indian Government, so that in the years to come, India is not only able to adequately feed its own increasing population but also to extend its friendly cooperation in this important field to the other Third World Countries.

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## NEWS

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### GENE THERAPY AND CONSUMERISM

... At a recent meeting genetics and the law, "Tabitha Powledge [*Bio/Technology* magazine] speculated that germ-line gene therapy may be carried out with *in vitro* fertilization and embryo transfer in private clinics. 'All this time we have feared that human genetic engineering was going to be imposed upon us by a totalitarian government,' she said. 'Instead, it now seems possible that genetically engineered embryos will be just another consumer

product, available for a fee. Is this any more acceptable?' In closing, Powledge . . . advised, 'It's time to start thinking about human genetic engineering in new ways. Indeed, it's almost too late.'" [(Beverly Merz in *Medical World News*, 8 Oct 84, p. 46-62) (Reproduced with permission from Press Digest, *Current Contents*®, No. 52, December 25, 1984, p. 14. Published by the Institute for Scientific Information®, Philadelphia, PA, USA.)]

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