

## Preface

The International Conference on Magnetism and Crystallography was held in Kyoto, Japan during the period 25-30 September, 1961. This meeting, organized jointly by the Science Council, the Physical Society and the Crystallographic Society of Japan, consisted of the following two parts which ran in parallel:

Part I: *International Conference on Magnetism*, sponsored by the International Union of Pure and Applied Physics (IUPAP).

Part II: *International Symposium on Electron and Neutron Diffraction*, sponsored by the International Union of Crystallography (IUCr).

The Organizing Committee of the Conference was financially assisted by a grant from the Japanese Government and also by generous donations from numerous industrial and commercial organizations in Japan. Further, financial aids from the UNESCO through the respective Unions and from the Charles F. Kettering Foundation (U.S.A.) played an essential role in the activity of the Organizing Committee. Without these generous supports and donations the Conference would certainly not have been so successful.

The Conference was held in a modern municipal building, the Kyoto Kaikan, and was attended by about 600 Japanese and 225 foreign scientists from 19 countries. The approximate ratio of the people whose main interests were in Parts I and II respectively was roughly 3 to 1.

The formal opening took place on Monday morning 25 September and there the addresses of welcome were given by Prof. I. Nitta, Vice-Chairman of the Organizing Committee, by Dr. K. Wadati, President of the Science Council of Japan, and by Prof. K. Hirasawa, President of Kyoto University. These were followed by the addresses of Prof. L. F. Bates representing the IUPAP and Prof. P. P. Ewald representing the IUCr.

The major scientific programme of Part I comprised about 200 papers read during nineteen morning and afternoon sessions, namely Sessions M-1 to M-19, and that of Part II about 100 papers read during eleven morning, afternoon and evening sessions, namely Sessions C-1 to C-11. Besides these there were two Joint Sessions of Part I and Part II, namely Sessions J-1 and J-2, on the topic "Neutron Diffraction Study of Magnetic Materials". These Joint Sessions, in which about 20 papers were read, played an important role in the Conference not only because of the importance of the field but also because they gave a close linkage between the two parts of the Conference.

The programme of the Conference contained also a schedule of a number of social events such as banquet, beer party, cocktail party, concert and sight-seeing tours in Kyoto. The series of social events, and at the same time the schedule of the Conference, were closed by an excursion on Lake Biwa and on Mt. Hiei east of Kyoto, and by a farewell party in the Mt. Hiei Hotel on the afternoon and evening of Saturday 30 September.

The plan of publishing the Proceedings of the Conference was discussed jointly by the Programme Committee and the Publishing Committee. Taking into account the volume and diversity of the papers, and also the circumstance that the Conference was a combination of Part I and Part II and the Joint Sessions, they concluded that it would be most practical and convenient for readers to have the Proceedings published in the following three separate volumes:



Volume I, papers on Magnetism read at Sessions M-1 to M-19 of Part I of the Conference.

Volume II, papers on Electron and Neutron Diffraction read at Sessions C-1 to C-11 of Part II of the Conference.

Volume III, papers on Neutron Diffraction Study of Magnetic Materials read at Joint Sessions J-1 and J-2 of Part I and Part II of the Conference.

These volumes are to constitute Supplements B-I, B-II, and B-III to Volume 17 of the Journal of the Physical Society of Japan.

This volume, Vol. II, contains all the papers presented at Sessions C-1 to C-11 and constitutes, together with Vol. III, the proceedings of the International Symposium on Neutron and Electron Diffraction, or Part II of the Kyoto Conference. The papers, however, are not given in order of presentation but are arranged according to subject matter. These and other editorial changes were made by the following editors:

Shizuo Miyake (chief); Yonezo Morino (for "Gas Electron Diffraction"); S. Miyake and Kazutake Kohra (for "Scattering Phenomena in Electron Diffraction"); Ryozi Uyeda and Norio Kato (for "Diffraction Effects in Electronmicroscopic Images"); Goro Honjo (for "Structure Studies by Electron Diffraction" and "Technique and Application of Electron Diffraction"); Sadao Hoshino and Ryuzo Ueda (for "Neutron Diffraction")

The preliminary compilation of the Discussion was done by the co-chairmen of the relevant sessions using both the manuscripts submitted to them by the speakers and the magnetic tape recordings, and then the drafts were forwarded to the editors for their consideration. They found that it was necessary to make some selections, deletions, changes of order, and slight alterations of the spoken words, in order to make the discussion meaningful and concise. In this respect the editors are responsible for any lack of thoroughness which might have occurred.

Finally the writer wishes to express his gratitude to all contributors of papers and participants in the discussion for their kind cooperation in making this volume a very good up-to-date summary of the relevant field of research. He believes that the quality of the papers collected here is an eloquent testimony of the success of the Conference. In this connection he, as a scientist of the host country, would like to mention his pleasure in the fact that, in addition to many excellent and impressive works presented by foreign scientists, Japanese scientists also have made a definite contribution to the study of electron diffraction for which they have a continued history of research for about thirty years since its discovery. At the same time, it is also a pleasure to acknowledge the many important suggestions and the stimulation which Japanese scientists obtained in the field of neutron diffraction by their contacts with the scientists from abroad. Much of the work in this field is incorporated in this volume as well as in Vol. III; this is a valuable summary especially for Japan since this field of research is just starting here after the construction of atomic reactors has been delayed for various reasons.

The writer is indebted to the Commission on Electron Diffraction of the IUCr for giving strong support to the Japanese plan of the Conference, and also to the Publishing Committee headed by Prof. K. Yosida and to the staff of the Journal of the Physical Society of Japan for their cooperation in the publication of this volume.

Tokyo, February 1962

SHIZUO MIYAKE