REPLICATION AND RECOMBINATION OF GENETIC MATERIAL. Ed. W. J. Peacock and R. D. Brock. Australian Academy of Science, Canberra. 1968. Pp. 276. $5.50.

At the end of August, 1967, an International Conference, sponsored by the Australian Academy of Science, was held in Canberra. Under the general heading of the " Replication and Recombination of Genetic Material ", the topics included within the meeting extended over a wide area. The 24 chapters, contributed by some of the more well-known names in their fields, range from studies on replicating RNA molecules to a consideration of the biochemical and genetic autonomy of chloroplasts; from a discussion of differences in chromosome size between related plant species to a review of genetic recombination in fungi.

The volume begins with an impressive summary by Spiegelman of his work on the *in vitro* replication of viral RNA molecules. It ends with a useful review on the genetic control of recombination in *Drosophila* by Lindsley, Sandler, Nicoletti and Trippa. Catcheside summarises his findings with mutants affecting recombination in *Neurospora*, while Meselson reports on the demonstration of reciprocal recombination in prophage *lambda*. Thomas, Marc Rhoades and MacHattie discuss their findings on the molecular genetics of viral DNA, illustrated with clear electron micrographs of circular DNA molecules. Marcus Rhoades, in a consideration of the cytological basis of crossing-over, demonstrates an unambiguous correlation between the completeness or efficiency of chromosome pairing and recombination frequency in maize.

In common with the proceedings of other International Conferences of this type, the quality and length of the papers contributed is variable, but the emphasis is on being concise and informative. Some include new information, unpublished elsewhere; others concentrate on summarising or reviewing previously published information. It is to be expected that some of the findings included in such rapidly advancing fields will now be supplemented or out-dated. But all geneticists interested in these topics will wish to consult this book and all can expect to find something of interest for the effort.

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AN INTRODUCTION TO HORMONE SYSTEMS

HORMONES, CELLS AND ORGANISMS. P. C. and A. G. Clegg. Heinemann, London. 1969. Pp. 214. 35s.

This book provides a clear and well-thought-out introduction to many of the questions which currently interest endocinologists. The way that hormones act, and the way that they are controlled, are illustrated with examples from a number of homeostatic systems. The hormonal systems regulating the metabolism of glucose, the metabolism of electrolytes, and that of water are considered in detail. The book also gives a clear description of the roles of hormones in the integration of digestive processes, in reproduction, and in the response of mammals to stress. Throughout the book the importance of understanding the mechanisms of action of hormones is emphasised. The current theories, including the one which states that hormones act on the