

Preface

In 1985 I discussed with John Sommerville the state of chromosome research. We both felt that it would be worthwhile organizing a workshop for colleagues active in chromosome research, since the exciting new developments in this field obtained with the new molecular techniques often appeared to be insufficiently integrated into classical knowledge.

When Peter Hausen and I considered that the 65th birthday of Professor Wolfgang Beermann ought to be celebrated with some kind of scientific activity, emphasizing the importance and widespread influence of his scientific work, I remembered our earlier discussion. We felt that the birthday of W. Beermann would be an excellent opportunity to assemble scientists from all over the world and to try and achieve some kind of integration of classic and modern aspects of chromosome research. The opening and closing words spoken by Mel Green and Joe Gall are enclosed, since they emphasize one of the chapters written in chromosome research.

This volume is a document of a symposium organized in 1986 in Tübingen. However, it is not the documentation of a symposium in the usual sense. I have asked the invited speakers of this symposium to prepare a manuscript which meets the original intention and tries to integrate the classic knowledge from cytology and genetics with molecular data. Although some topics of chromosome research have occasionally been treated in other publications, a comprehensive assembly of the present knowledge has not yet been available. I hope that this volume alters the situation by providing an up-to-date account of various fields of chromosome research.

In various contributions it will become evident that often fundamentally new ideas are still necessary to arrive at a real understanding of the phenomena. This is particularly true for all questions on chromosome structure. Understanding gene regulation is closely connected to understanding chromosome structure. This shows that we are still far away from even understanding gene function. This book may help to induce new approaches stimulated by the recognition of the unsatisfactory state of our insight.

For several reasons it has not been possible to achieve a complete coverage of all the divergent aspects of chromosome structure and function. In particular, the important contributions of yeast chromosomes, which have not been appreciated by the classic cytologists as suitable material for research, are not represented. I hope that this volume will nevertheless prove valuable for all those fascinated by chromosomes, by questions on gene function and by cellular differentiation processes.

I am extremely grateful to all contributors for their dedication and co-operation. I feel very excited to read the various chapters on a research line which has been the focus of my own scientific career and which began in the 1960's in W. Beermann's Department in the extremely fascinating and stimulating environment of internationally leading colleagues. Only today can I fully appreciate the primary importance and value of such a scientific environment for post-graduate education.

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WOLFGANG HENNIG