Preface

The study of chromosomes is basic to genetics. The laws of heredity embodied in genes and chromosomes are undoubtedly universal for all organisms, including plants, animals, and humans. Notwithstanding this general uniformity, the chromosomes of plants, their behavioral characteristics, and role in evolution show certain distinctive features. In addition to polyploidy and the location, nature, and amount of repeat sequences, the totipotency of the plant cell enables it to have the unique potential of generating genetic diversity and chromosome variants.

These reasons led us to plan a book on plant chromosomes covering all the basics on the one hand and advances including molecular characteristics on the other.

The treatment of the subject in *Chromosome Botany* aims to present the chromosomes as a dynamic entity against the backdrop of growth, differentiation, reproduction, and evolution. Structural details, identification of gene sequences at the chromosome level, behavioral pattern, generating specific and genetic diversity in evolution, as well as the genome as affected by environmental agents, are discussed.

The objective is to provide the readers, even those uninitiated in genetics, with a concept of the totality of the chromosome as vehicle of hereditary transmission, which is the foundation of the entire discipline of molecular genetics. The authors would consider their effort successful if it proves to be useful for a beginner as well as an advanced student of plant chromosome.

The authors are grateful to successive generations of students and research scholars who had been, unwittingly or otherwise, subjected to lectures at classrooms and laboratories on these topics and also to their colleagues and families for forbearance. They are especially grateful to Professor A.K. Sharma, Founder, Centre of Advanced Study on Cell and Chromosome Research for correcting the manuscript and writing the Introduction. Thanks are also due to the Council of Scientific and Industrial Research (CSIR), University Grants Commission (UGC), Ministry of Forests and Environment

(Government of India), and Indian National Science Academy (INSA) for financial assistance.

Archana Sharma
Sumitra Sen
Centre of Advanced Study on Cell and Chromosome Research
Department of Botany
University of Calcutta
35 Ballygunge Circular Road
Calcutta 700 019
India