
BOOK REVIEW

Cytogenetics of Crop Plants by M. S. Swaminathan, P. K. Gupta and U. Sinha, Macmillan India Limited, New Delhi, 1983, pp. 591, Rs. 45.00

A compilation of 19 papers by leading Cytogeneticists from eight countries, the book is well organised and expertly edited. The first five papers are of general nature, covering haploidy, somatics, self-incompatibility, cytoplasmic inheritance, and crop improvement. The remaining 14 papers cover some major groups of economic plant species. It is unfortunate that important crops like rice, sugarcane, potato and tobacco are not covered, though much is known on the cytogenetics of these plants. Wheat cytogenetics is covered in three papers, maize in two and one each for barley, oats, cotton, tomato, Brassicas, Alliums, pulses, cucurbits and *Festuca-Lolium* complex.

Since World War II there has been a rapid expansion of our knowledge in genetics, thanks to the convenience caused by bacteria as an experimental tool in the hands of microbial geneticists and biochemists. The knowledge which started flowing from the microbiological and biochemical genetics laboratories soon started influencing the works of animal, human and plant geneticists. Thus a revolutionary trend in cytogenetics started, leading towards molecular aspects of the scientific basis of inheritance. The contribution of this branch to human and animal welfare and to crop improvement in recent years is most invaluable. We have now reached a stage that no real advancement of these areas are possible without an understanding of the cytogenetics of the concerned biological species. The future of mankind depends on how we utilize the knowledge in this field for crop improvement so as to meet the challenges of population explosion. These aspects are well brought out by M. S. Swaminathan

and P. K. Gupta in the introductory paper. The papers covering the fundamental aspects are of advanced standard, dealing with techniques and methodology, latest trends in research, and summarising the salient findings of most recent works. Also, there is emphasis on genomic make-up and evolution of species and genera. For example, the paper on 'Somatic cell genetics in crop improvement' by S. S. Bojwani and D. W. R. White deals with somatic hybridisation, protoplast fusion, selection system, tissue culture as a source of genetic variability, genetic transformation, etc. The importance of self-compatibility studies in understanding the evolutionary trends in plants is brought out by K. K. Pandey. The paper on 'Molecular basis of cytoplasmic inheritance in plants' is expertly dealt with in a simple and systematic manner by C. S. Levings *et al.*

The papers on individual or groups of economic plant species give the latest information on their cytogenetics and invariably bring out the deficiencies in our present knowledge and the suggested future lines of work. These are very valuable to the specialists in the respective fields. The importance of the crops covered in this treatise vary with the national context. While wheat, maize, tomato, cucurbits and Brassicas are more or less of uniform importance in most parts of the world, pulses, *Festuca-Lolium*, *Avena*, barley etc. may not be equally important in different countries. In a publication of this type such important crops like rice, sugarcane, tobacco and potato should have been covered to fully justify the title. However, the contents are of very high quality, meeting the needs of research scientists and post-graduate scholars in Cytogenetics and Plant Breeding.

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ANNOUNCEMENTS

INSA MEGHNAD SAHA MEDAL FOR 1984

Dr Raja Ramanna, Chairman of the Atomic Energy

Commission, has been awarded the Meghnad Saha Medal for 1984.
