

affected individuals. There is also a chapter on multifactorial disorders which serves to underline the complexities of trying to establish how specific genomic alterations can give rise to disease. In some parts, the text repeats from previous chapters.

The book concludes with an overview of current and future developments with particular respect to inherited diseases. It does not touch on the possible advantages of screening for families at increased risk of developing cancer nor the ethical problems which are of major concern as a result of this information.

Overall the book is well written with very clear diagrams and is easy to follow. The size is very convenient to carry around and this makes interrupted reading possible. For those who need an introduction to this subject, whether it be medical or ancillary staff, I would strongly recommend that a copy be available. For those with a specialist interest, however, further detailed reading is needed.

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Cytogenetics in Plant Breeding. J. Sybenga. Springer-Verlag, Berlin. 1992. Pp. 469. Price £127.00, hardback. ISBN 3 540 52112 7.

This monograph is volume 17 in a series on Theoretical and Applied Genetics. Volume 1, *Meiotic Configurations*, was also written by John Sybenga. The author takes the view that a basic knowledge of chromosome structure and function, as well as methods in chromosome analysis and engineering, is a prerequisite for today's plant breeder. He also fully justifies his remark in the preface that cytogenetics 'is often conceptually more complicated than cell and molecular biology', by producing a solid, scholarly and systematic work. The early chapters, covering a couple of hundred pages, are a fundamental and contemporary statement of the basic

material on chromosome structure, mechanisms of genetic transmission, karyotype analysis and chromosome structural and numerical variants. It is clear that the author has a thorough grasp of both the depth and breadth of his subject matter, and as he weaves the threads and finds coherent themes he also points the reader along the many diverse tracks that lead into the core of cytogenetics, and gives clear signals to both the historical and the modern perspectives. There is useful compilation of groundwork here for the purist as well as the practitioner. Breeders wanting to apply the science will find the text well organized into meaningful sections to do with estimating, recording and manipulating recombination; genome analysis and the identification analysis of related genomes; manipulation of genomes to effect gene transfer; manipulation of genome composition; and manipulation of the genetic system. It is refreshingly simple to find ones way around the text and to identify specific bits of information, such as the consequences of secondary and telocentric trisomy or the induction of autotetraploidy. A particularly useful, and somewhat novel, chapter (7) is that dealing with diagnosis of specific karyotype variants: it will be of considerable help to the novice, and even the more experienced worker, at those awkward moments when one looks down the microscope and is perplexed by the presence of an extra chromosome, or a heteromorphic bivalent. Notwithstanding some heavy stuff, in parts, the author has not overlooked the elementary either, such as the worked example of a three-point test cross using kernal markers in maize. Inevitably one who has worked so much on rye has drawn heavily on this species for examples. Sybenga passes rather more quickly over some other important crops such as *Zea mays*, but choices have to be made and there are other good texts which serve a different purpose in dealing with individual crop plant species. There is extensive cross-referencing, a comprehensive and useful bibliography and a well-structured subject index. It's a pity about the price.

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