and what is still in the pipeline and may turn out to be incorrect. So these chapters also leave us in the air. The real problem here is that, while there is quite an extensive list of references, it is not connected up with the numerous statements in the text, so that one does not know where to look for further information on such exciting topics as the use of somaclonal variation, plants with a built-in insecticide (does eating such plants do one any harm?), Calgene's 'Flavour Saver Gene' in tomatoes (since Calgene is an American company, this should surely have been spelt 'Flavor'), stealing a virus's clothes to make tomato and potato plants resistant to potato X and potato Y virus, and so on. For those of us – (geneticists, MPs, MEPs as well as the person in the street) worried about the speed of progress and possible dangers inherent in such projects, this book is not sufficiently helpful. Can we look forward to an expanded version, with a fuller list of references properly integrated into the text? This would of course be a major undertaking for one author, let alone a committee; and meanwhile knowledge, published and unpublished, accumulates at an awe-inspiring rate.

So, in my opinion, this book fails to fulfil the expectations of its title and is likely to be found frustrating by many of its readers. But it will at least give the reader many good talking points for parties and dinner tables, and the exciting prospects of which we are given a taste should help to line the empty coffers of some of our university research teams.

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*Human Cytogenetics: A Practical Approach, Volume II: Malignancy and Acquired Abnormalities* (second edition). Edited by D. E. ROONEY and B. H. CZEPULKOWSKI. IRL Press at Oxford University Press. 1992. 293 pages. Price Paper £22.50, ISBN 0 19963313 4. Spiralbound £30.00 ISBN 0 19 963290 1.

The second edition of this book (the first appeared in 1986) has undergone a form of mitosis resulting in two 'daughter' volumes of equal size but very different content.

The second of these volumes is entitled *Malignancy and Acquired Abnormalities*. Two-thirds of this volume deals with the cytogenetics of malignancies. As befits our current state of knowledge, five chapters are devoted to leukaemia cytogenetics followed by a chapter on solid tumour cytogenetics. The remainder of the book deals with Mutagen-induced Chromosome Damage; Breakage Syndromes; Somatic Cell Hybrids; Flow Sorting and Microdissection. Most of the contributors are UK cytogeneticists working in diagnostic laboratories, and all have a great deal of practical experience.

The section of the book which will probably be referred to most frequently by practising cytogeneticists is that on leukaemia cytogenetics. A useful overview chapter on methodology is followed by three largely descriptive chapters on the cytogenetics of myeloid, acute lymphoid and chronic lymphoid leukaemias. These chapters are well illustrated with pictures of chromosomes of varying quality: accurately reflecting what is seen down the microscope! These chapters also sensibly address the question of what approach to analysis should be adopted. References to the use of other techniques (see fluorescence in-situ hybridization) to confirm and support conventional cytogenetic findings could perhaps have been expanded. This section of the book is rounded off by a stimulating review of the role of cytogenetic findings in leukaemia. This chapter is particularly perspicacious in that it is written by a clinical haematologist. Anyone who remains to be convinced that the cytogenetics of leukaemia is little more than a glorified form of stamp collecting should read this chapter.

There is an adequate index and a useful glossary of haematological terms together with a list of reagent suppliers.

This volume and its 'sister' are aimed primarily at practising cytogeneticists as a technical *vade mecum*, and as such can be recommended. The nature of the information is such that it won't date too quickly, and at the asking price is well worth the investment.

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*Introduction to Theoretical Population Genetics*. By THOMAS NAGYLAKI. Spinger-Verlag. 1992. 369 pages. Price £35.00. DM. 98.00. ISBN 3 54 053344 3.

Mathematical models and methods have a long history in genetics, tracing back to Gregor Mendel, who used elementary mathematics to calculate the expected frequencies of the 'genes' in his experiments. In fact, he had studied mathematics and physics (at the University of Vienna), and this educational background may have influenced him to introduce the atomistic approach to heredity, and to formulate abstract models. Later, Hardy and Weinberg used simple mathematics to derive what is now called the Hardy–Weinberg law. Since the pioneering work of Fisher, Wright and Haldane, mathematical models and methods have become common in population genetics. Numerous good textbooks and monographs have been published, many of these treating probabilistic or statistical aspects of theoretical population genetics. Others, like those of Crow and Kimura, or Ewens, give a broader overview of mathematical models in population genetics.