

starting up in the field. The book is user friendly and good value for money.

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**Interspecific and Intergeneric Crosses in Cultivated Plants.**  
 A. Belea. Akadémiai Kiadó, Budapest, 1992. Pp. 255. Hardback, price £18.00. ISBN 963 05 6053 4.

The subject of this book is one where a comprehensive review of the techniques and achievements, both contemporary and historical, should provide a valuable and needed source of information and references.

In the Preface the author states that the book is aimed at researchers and specialists and assumes that the reader is already acquainted with the subject at university level. This is the level at which it would have the most value but the level actually achieved is more that of the university student, and for most of the subject matter, it does not achieve sufficient depth to be of real value to the research scientist.

The book is divided into five chapters, which cover most aspects of intergeneric and interspecific hybridization. The first chapter, the Introduction, includes a historical review and also covers the taxonomic concept of the genus and the species. In this an attempt is made to define a species although it leaves the reader with the impression that a species is indefinable.

The second chapter, entitled 'Circumstances Required for Interspecific and Intergeneric Crossing', covers items such as flowering time, climatic conditions and crossability. Chapter 3, 'Morphology of Interspecific and Intergeneric Hybrids', contains a large section on the detailed morphology of F<sub>1</sub> and F<sub>2</sub> progenies. Chapter 4, 'Sterility, Fertility and Cytology of Interspecific and Intergeneric Hybrids', again has sections on progenies but also covers a range of cytogenetic techniques and discusses aneuploidy and polyploids. The final chapter, 'Practical Results and Future Prospects', is fairly brief and outlines the origins of some crop varieties.

Overall, the book very much reflects the author's area of research and, as such, is very heavily biased towards interspecific and intergeneric hybrids between wheat and its relatives; so much so in places that it appears that other cultivated plants are only added as an after thought.

A large number of detailed tables appear throughout the book, many from the author's own research, but often with inadequate captions. For example, there is a large list of hybrids within the Triticeae but it is not clear whether this is a comprehensive list or just a list of those hybrids obtained by the author. There are numerous tables of quantitative characters for interspecific wheat crosses of questionable value which could easily have been omitted, especially as many of the combinations would be better classified as intraspecific rather than interspecific. Much of the textual detail of the wheat crosses, particularly that relating to morphology, has insufficient explanation for readers who are not closely

familiar with the genus *Triticum*. A genetic explanation for much of the variation described in the hybrid progenies has been almost entirely ignored. Similarly, data on different levels of chromosome pairing in hybrids is given but the causes of these differences are not explained.

The most serious fault with the book is the fact that it contains quite a number of factual errors. These include discrepancies between the text and the tables, the placing of genera into the wrong tribe, incorrect references, wrong symbols assigned to genomes and chromosomes, and even discoveries attributed to the wrong person. It would appear that the author often cannot have actually read the publications referred to. Most, but not all, of the errors detected were in connection with wheat, which, like that of the author, is also my area of research and consequently the subject with which I am most familiar. Because of the errors discovered I have serious misgivings regarding this book and can in no way recommend it. This is a pity, as in concept it is good and it is very reasonably priced.

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**Non-isotopic DNA Probe Techniques.** L. J. Kricka.  
 Academic Press (Harcourt Brace Jovanovich), New York.  
 1992. Pp. 358. Price £40.00, hardback ISBN 012 426295 3.

Traditionally DNA probe hybridizations have been carried out with radioactively labelled probes, <sup>32</sup>P being the most commonly used radionucleotide. Recent advances in nucleic acid technology, however, now offer alternatives to radioactivity with several advantages. There is none of the hazard associated with the use of radioisotopes, probes are stable and their use is not restricted by a short half-life, protocols are more rapid and reagents are generally less expensive. For someone wishing to adopt a non-radioactive technique, the choice can often appear extremely daunting. Although most methods have been developed within the last 5 years, the range of non-isotopic methods available is now very extensive and information is dispersed. This book is intended to give research workers and assay developers a single source of information on non-isotopic procedures for DNA hybridization. This has not, to my knowledge, been attempted previously. It was therefore with great interest that I approached the book.

The book consists of 13 chapters in total with 11 devoted to an impressive range of detection methods such as time-resolved fluorescence, bioluminescence, chemiluminescence and colourimetry of labels, such as alkaline phosphatase, horseradish peroxidase, glucose-6-phosphate dehydrogenase, lanthanide chelates and acridinium esters. Each chapter is prepared by an inventor or developer of the particular method thereby providing an expert account.

The first chapter, written by the editor L. J. Kricka, consists of a general introduction to the applications of non-radioactive hybridization techniques with general information on labelling and detection. The chapter provides