

have been discovered.

'Different types of messenger RNA editing' by R. Cattaneo discusses six different types of RNA editing and their mechanisms. The most puzzling RNA-editing system is that of plant mitochondria. In fact, four out of the six RNA editing types discussed concern mitochondrial systems.

'Spontaneous mutation' by J. W. Drake describes selected advances in the analysis of spontaneous mutation and shows the current futility of mispairing schemes postulated in the 1950s. The existence of forces that could power the evolution of spontaneous mutation rates has also been discussed.

An article related to the above is 'Mechanisms and biological effects of mismatch repair' by P. Modrich. Mismatch correction has been divided into two groups: long-patch mismatch correction where the excision repair tracts can be a kilobase or more in length, and short-patch repair of 10 nucleotides or less identified both in bacteria and mammalian cells. The mechanisms of both are different and have been discussed in this article.

Still another related article is 'Modulation of mutagenesis by deoxyribonucleotide levels' by B. A. Kunz and S. E. Kohalmi. In this article the authors have focused on the pools of deoxyribonucleotide (dNTP) pool imbalances and one manifestation of genetic instability, namely, mutagenesis. Perturbations of dNTP levels during DNA replication produces a range of genetic effects associated with aberrant replication or failure to accurately repair DNA, including mutation, recombination, enhanced cellular sensitivity to DNA damaging agents, chromosome rearrangement, breakage and loss and oncogenic transformation.

Talking of oncogenic transformation, an interesting article is 'Loss of constitutional heterozygosity in human cancer' by D. Lasko, W. K. Cavenee and M. Nordenskjold. The article focuses on recessive mutations in retinoblastoma. But the information obtained with this tumour is also likely to be applicable to other tumours where the nature and interaction of genes will be more exciting.

There are two interesting articles on receptors. The first one, 'Transcription and activation by estrogen and progesterone receptors' by H. Gronemeyer,

attempts to explain how the receptor recognizes its target genes, which structures of the receptor are responsible for transcriptional activation, and the roles of agonists and antagonists in these processes. It also discusses aspects of estrogen and progesterone action that are still not fully understood.

The other article 'Molecular and genetic insights into T cell antigen receptor structure and function' by A. Weiss deals with the remarkable complexity of the structure of the eight-chain receptor, which has probably evolved in order for it to efficiently recognize peptide antigen and determinants of the major histocompatibility complex and to transduce signals across the plasma membrane. This review focuses on recent molecular and genetic approaches that have been used to study this complex oligomeric receptor and how such studies may provide insights into its normal function and also of other oligomeric receptors.

An article of general interest is 'Genetic control of cell interactions in nematode development' by E. J. Lambie and J. Kimble. Over the past decade it has become clear that the molecular controls of a nematode like *Caenorhabditis elegans* are similar to those in vertebrates. In this review the authors emphasize those interactions in this nematode which have been best characterized genetically and which have provided experimental accessibility for the analysis of regulatory cell interactions during development.

Plant geneticists would find the articles 'Genetic and developmental control of anthocyanin biosynthesis' by H. K. Dooner, T. P. Robbins and R. A. Jorgenson and 'Phytochrome: a light-activated molecular switch that regulates plant gene expression' by P. H. Quail particularly interesting.

Other articles include: 'Towards a genetic dissection of the basis of triplet decoding, and its natural subversion: programmed reading frame shifts and hops' by J. F. Atkins, R. B. Weiss, S. Thompson and R. F. Gesteland; 'Regulation of bacterial oxidative stress genes' by B. Dimple; 'Regulation of gene expression in fermentative and respiratory systems in *Escherichia coli* and related bacteria' by E. C. C. Lin and S. Iuchi; 'Regulation of expression of the late

genes of bacteriophage T₄' by E. P. Geiduschek, and 'Genetic analysis of yeast phospholipid biosynthesis' by D. M. Nickoloff and S. A. Henry

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Reliability Analysis and Prediction: (A Methodology Oriented Treatment). K. B. Misra. Elsevier Science Publishers B. V., Sara Burgerhartstraat 25, P. O. Box 211, 1000 AE Amsterdam, The Netherlands. 545 Dutch Guilders. 1992.

Apart from some early work on the reliability of the telephone system, emphasis was placed on reliability during the 1940/1945 war, where failure could be disastrous. Over the last 30 years there have been numerous books published on 'reliability' (some 130 are listed in K. B. Misra's book). The vast majority have been largely mathematical and usually specific to one section or aspect of reliability. For many years there has been a need for a comprehensive volume which would collate and summarize all the knowledge which has been accumulated by experience in reliability improvement over this period.

Such a book is now available in K. B. Misra's *Reliability Analysis and Prediction: A Methodology Oriented Treatment*. This book now provides the student, researcher or practical engineer, with all the knowledge he requires for his particular application. As a reviewer who pioneered reliability work in electronics for the Armed Forces in the 1940s; has lectured extensively worldwide and has written numerous papers, including three books on reliability, the reviewer has studied this book extensively and in his opinion it contains the most complete coverage of any book on reliability yet written. This is illustrated by the chapter headings, as follows: Reliability engineering: an overview; Reliability mathematics; Reliability data analysis and management; Reliability prediction from stress-strength Models; System reliability modelling; Reliability evaluation techniques; Maintainability

analysis, and finally, System analysis through fault trees.

It may be argued that the book is too 'voluminous', but there a few books published which are regarded as 'landmarks' or 'milestones' in any technique or subject. Colloquially, they are known as 'the Bible' or fount of knowledge. Such a book for many years was F. E. Terman's *Radio Engineering*. We now have a new 'Bible'—K. B. Misra's *Reliability Analysis and Prediction: A Methodology Oriented Treatment*. The author is modest in claiming that this

book, which is the outcome of his more than 25 years of teaching and researching in the area, is going to fill the gap which has been widely felt by practising engineers, but there is no doubt that this will be so. The appendices on 'Some useful definitions' and on 'Description of computer codes' are particularly valuable.

In summary reliability analysis, prediction, reliability mathematics, algorithms, organization and analysis of data, reliability modelling and system reliability evaluation, system modelling

and maintainability analysis, plus four appendices of mathematical tables, all add up to the most comprehensive and up-to-date information on the 'state-of-the-art' in reliability. It should be on every engineer's bookshelf.

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Correction

Biotechnology in crop improvement

V. L. Chopra and R. P. Sharma

(*Curr. Sci.*, 1991, 60, 543).

V. L. Chopra and R. P. Sharma write:

The opening sentence of para 2 on page 547 should read:

'*Lathyrus sativus*, popularly known as kesar dal, grown widely in central and eastern India, contains a neurotoxin and thus, qualitywise, is not suitable for human consumption. The neurotoxin causes a paralysis of limbs known as lathyrism'.

We are grateful to Dr C. Narayana Reddy, Botany Department, Gulbarga University, Gulbarga 585 106, for bringing this error to our attention.