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# Book reviews

**Genetics for Dog Breeders**, 2nd edition. R. Robinson. Pergamon Press, Oxford. 1990. Pp. 280. Hardback, price £20.00. ISBN 0 08 037492 1.

This is an update of a first edition published in 1982 and follows the same format as did that and the author's companion volume, *Genetics for Cat Breeders.*

The book briefly reviews the possible ancestry and history of domestication of the dog and says a little about the reproductive strategy of the species. The principles of Mendelian Genetics are explained clearly using, as far as possible, examples from dog breeding. These examples are largely chosen from coat colour variants. The author discusses selection strategies and breeding systems applicable to pedigree breeds and pays particular attention to inbreeding. There is an extensive treatment of the genetics of coat colour and type and an attempt is made to categorize the allelic constitution of most dog breeds for the genes involved in these characters. The penultimate chapter describes and lists known genetic abnormalities in the dog. The book is well and clearly referenced.

The author has attempted throughout to make the theories and principles of genetics clear and easy for breeders to use. He has succeeded in doing this and in general in explaining, in genetic terms, the nomenclature of dog breeding. Occasionally, however, the simplifications may raise the eyebrows of geneticists: the statement that 'the degree of pure breeding is known as the "homozygosity"' might benefit from some explanation and the suggestion that highly inbred dogs would start at 80 per cent homozygosity might lead to problems. I found the occasional use of 'gene', when 'allele' was meant, irritating. Hopefully the next edition will carry some section on molecular techniques and applications.

The book occupies a niche which is very important and will stimulate and be of great use to almost all dog breeders. It should be on all their shelves. The chapters on coat colour, and on inherited abnormalities, will be of use to practising vets and to veterinary students.

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**The ACT Cytogenetics Laboratory Manual**, 2nd edition. M. J. Barch (ed.). Raven Press, New York. 1991. Pp. 639. Hardback, price £90.00. ISBN 0 88167 774 4.

The preface informs us that this is the second edition of a Technical Manual first published by the Association of Cytogenetic Technologists, the American counterpart of the U.K. Association of Clinical Cytogeneticists.

This book reminds me of the book '*Tell Me Why*', which as an adolescent I received and treasured. The manual is a hybrid of theoretical and practical knowledge with its 14 chapters providing a wealth of information.

The chapters are divided both by the specific tissue sample type seen in a routine laboratory, or according to practical areas of major importance. Fragile X syndrome and other heritable fragile sites have been accorded a separate chapter which includes both the clinical aspects, variable expression and considerable detail on the cultural requirements for cytogenetic detection. The authors have recognized the need to understand the theoretical implications of techniques in order that the everyday practicalities and problems of techniques can be addressed. A helpful 'troubleshooter' section, along with protocols for the techniques, is provided at the end of the appropriate chapters. There is some repetition of the protocols present, for example the methodology for Q banding is described five times and, contrary to the editor's aspirations, I found her attempt to accommodate the wide spectrum of alternative techniques, particularly in the cell culture section, overwhelming.

Some sections of the book have been overtaken by recent scientific events, including the molecular understanding of fragile X syndrome and the *FMR-1* gene. The section on prenatal diagnosis avoids any discussion of early amniocentesis whilst the section on chorionic villus sampling is inappropriately short with no reference to data from the Canadian randomized trial. Furthermore, only five pages are devoted to the exponentially expanding field of molecular cytogenetics which is now a vital tool in a routine laboratory.

As would be expected, the sources for the techniques are firmly based in America. For this reason, European cytogeneticists may find some of the observations, comments and occasional chapters curious. For example, Chapter 13 (comprising 25 pages) is devoted to dermatoglyphics, the importance of which is well recognized but rarely used in the routine cytogenetics laboratory.

The size and weight of the manual precludes it as a benchbook, whilst as a source of combined theoretical, clinical and technical information it is one of its kind. This is a book to recommend to cytogeneticists and would be invaluable as a training reference.

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