Book reviews

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**Teratogen Update: Environmentally Induced Birth Defect Risks**

This book is an updated collection of articles originally published in the journal *Teratology*. The articles are all reviews written by people with special interest and experience in the fields covered and are grouped according to the type of teratogen.

The largest section concerns teratogenic drugs. There is an excellent clinical review of thalidomide embryopathy, including features which distinguish the condition from other limb reduction syndromes. This is most helpful to those of us now called upon to counsel subjects with malformations who were born during the period when thalidomide was prescribed. Another excellent article summarises animal and human defects associated with vitamin A congeners. The reviews on alcohol, DES, warfarin, hydantoin, and several other drugs as teratogens are brief but well referenced. In this section a summary of published work on Bendectin (debendox) is included; it concludes that no studies have shown a convincing link with birth defects.

In the section dealing with teratogenic effects of congenital infections the only paper of any length is that on congenital rubella syndrome, but the other shorter articles on the whole do contain useful summaries and reference sections.

Toxic exposure of populations, including pregnant women, to chemical teratogens should not happen, but the poisoning of the population of two Japanese cities by mercury discharged into local waterways, and the contamination of cooking oil with polychlorinated biphenyls, will sadly not be the only examples of mass poisoning. These reports illustrate the inevitable delay in linking the teratogen with the birth defects, and the difficulty in obtaining accurate data.

The fourth group of articles concern physical, nutritional, and other factors. Included are smoking, atomic irradiation, therapeutic and diagnostic radiation, and malformations in the infants of diabetic mothers. I am also pleased to see a review on hyperthermia as a teratogen; this agent is rarely considered and I feel warrants further animal research and clinical observation, ideally in the latter case as a prospective study.

The volume ends with five articles by one of the co-editors dealing largely with medicolegal aspects.

This, on the whole, is a very useful book, although, because of the many authors, the style varies as does the amount of detail about the subject which the authors include. The book is interesting to read and well indexed and laid out. Some but not all of the articles are well illustrated.

The book should be included in the libraries of departments of obstetrics, genetics, and paediatrics and indeed would usefully be included in the library of postgraduate medical centres for consultation by anyone involved in the care of pregnant women or in the investigation of their offspring.

**Perinatal Genetics: Diagnosis and Treatment**

This book is one of a series of volumes stemming from the annual birth defects symposia held by the New York State Health Department; specifically the 15th annual meeting in 1984, with the proceedings published two years later. Unfortunately, many of the chapters deal with rapidly evolving areas of genetics, and only a few of the chapters have had their references updated since the symposium.

The growing and exciting field of perinatal genetics is of interest to perinatologists, neonatologists, geneticists, and many primary care physicians. This multi-authored endeavour, with six sections containing 17 chapters in all, has something for everyone. The first section provides several excellent critical reviews of the available information on the known genetic contribution to early pregnancy loss and spontaneous abortion, and should prove useful to both primary care providers and geneticists. The next section contains three papers on prenatal diagnosis with a very clearly written chapter on classical phenylketonuria, including discussion of the use of restriction fragment length polymorphisms and linkage analysis in the prenatal diagnosis of the disorder, which should be easily followed by most non-geneticists. The chapter on the prenatal diagnosis of the fragile X syndrome presents the author’s own experience and is clearly outdated and methodologically flawed. This section also contains an optimistic overview of chorionic villus sampling.

The section on prenatal treatment deals with both...
biochemical and structural abnormalities. Although rather outdated, the discussions on fetal surgery and fetal hydrocephalus still raise critical questions and their conclusions are still valid today. It was somewhat surprising that there was no speculation in the chapter on biochemical defects on the possibility of future fetal 'gene therapy'. The next two sections of the book contain five papers with dissimilar topics ranging from the H-Y antigen to a review of paternal age and reproductive outcome. These sections would be of more interest to the geneticist than to the practising clinician. Finally, the last section deals briefly with the ethics of both in vitro fertilisation and the moral justifications and criteria for third trimester pregnancy termination. It is unfortunate that this section was not larger.

This book has many well written chapters by people at the forefront of their disciplines. However, it does try to cover too many areas in the broad field of perinatal genetics in too few pages and it is not clear who would benefit most from reading the volume. Those active in the field would find some of the material outdated, although a number of the papers provide excellent critical reviews of past publications. Some of the papers are clearly aimed at practising clinicians, but others are more esoteric with their major appeal to the geneticist. I would recommend the volume as a reference book for specific topics rather than for a comprehensive overview of the field.

JONATHAN ZONANA

Annual Review of Genetics

This review consists of 23 chapters and covers many diverse topics. It begins with a personal narrative by Herschel Roman on the early days of yeast genetics. The topics range from E coli (ribosomal genes, mismatch repair, the conjugation system of F), mice (germ line transformation, primary sex determination), and humans (human haptoglobin genes, fragile X syndrome, human cancer, urea cycle enzymes). To ensure there is something for everyone, other chapters cover homeotic genes, membrane phospholipid synthesis, ribosomal genes, nitrogen fixation genes, transposable elements, and endospore formation. The net result is an excellent resource for students and those who wish to gain an overview of other disciplines. As with most multi-authored texts there is variation in style and approach. Most chapters represent a scholarly review (Pre-mRNA splicing by Michael R Green), but the chapter on primary sex determination in mice by Eva Eicher and Linda Washburn is more of a status report on their unpublished data.

While this text can not be recommended for every geneticist's personal library, it should be included in every departmental library.

THADDEUS E KELLY

The Chromosomes and Their Disorders. An Introduction for Clinicians

I was pleased to be asked to review the fourth edition of this book because I still have on my shelves the second edition which I found enjoyable and useful when it was first published in 1969.

The book begins with an updated and clearly written section on the basics of molecular genetics, including an account of the 'new genetics', RFLPs, and DNA probes. The normal karyotype is then discussed and followed by a section on the collection of samples (including amniocentesis, chorion villus sampling, and alphafetoprotein in chromosome disorders). There is then a section on the different types of chromosomal anomalies and their incidence in the general population. The second half of the book deals with clinical aspects of chromosomal disorders of the autosomes and sex chromosomes in some detail and there is a short section on cancer and chromosomcs.

The book is by an Emeritus Professor of Paediatrics and Clinical Medical Genetics. It is subtitled 'An introduction for clinicians' and is not intended for a specialist cytogeneticist readership. It is a good introduction to the clinical side of cytogenetics for medical students, junior medical staff in paediatrics, medical genetics, and obstetrics and gynaecology, and for nurses working in these specialties. The style is conversational and very readable but if it has a fault it is that it strays into the realms of anecdotal, rather than factual, evidence at times. Nevertheless the anecdotes, metaphors, and even cartoons are great fun and make the book easy to read and the information quick to assimilate. References to 'further reading' are well chosen and up to date. One minor criticism is the lack of any mention of the minor deletions and translocations seen in some patients with, for example, Prader-Willi, Langer-Giedion, and cat eye syndrome. There is no mention of Bloom's syndrome in the section on unstable chromosomes or of the potential use of unstable chromosomes in prenatal diagnosis. These are minor problems in an otherwise excellent book which is, above all, stamped with the individual personality, wit, and wisdom of the author.

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