Journal of
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BOOK REVIEWS

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The Chromosome. Ed J S Heslop-Harrison, R B Flavell. (Pp 281; £49.50.) London: BIOS Scientific Publishers. 1993.

Given the current frenzy in the hunt for disease genes, it is easy to lose sight of more global questions concerning gene organisation. Is there any logic to the way genes are distributed along chromosomes? What determines the alterations in chromosome structure through the cell cycle, and chromosome replication? What effects does this have on gene regulation? These are some of the questions that a book of this title should address.

The inside cover reveals its provenance as "selected reviews from the Tenth John Innes Symposium held from September 7 to 10, 1992, in an edited and modified form". Although the contributors are to be commended on the speed of publication, its origins highlight two drawbacks. First, out of 18 chapters, three concern plants and four concern bacteria, subjects which might fall outside the province of all but the most eclectic medical geneticist. Second, the amount of detail in each review varies considerably, from the in depth (eukaryotic origins of DNA replication, DePamphilis, 28 pages) to the cursory (DNA methylation and CpG islands, Antequera and Bird, seven pages). These problems are partly compensated for by the high scientific calibre of the contributors. There are brief but illuminating essays on telomeres (Richards *et al*, Greider *et al*), β globin expression (Grosveld's group), imprinting (Ferguson-Smith and Surani), and the genome sequencing projects in *E coli* and *S cerevisiae* (Blattner *et al*, Oliver *et al*). The exposition of position effect variegation in *Drosophila*, a phenomenon that is ripe for the discovery of a human corollary, is particularly clear (Henikoff *et al*).

On the other hand, most of these subjects represent fairly safe "reductionist" territory, and the going gets tougher once one ventures into the more dynamic aspects of chromosome function. The review by DePamphilis, already mentioned, is the most comprehensive and scholarly of the collection, but at the end the author summarises the current state of knowledge on how chromosomes of higher eukaryotes replicate their DNA as "akin to a blind man describing an elephant". It seems that DNA replication is initiated preferentially at defined sites 0·4 to 3 kb long, which lie embedded in larger (8 to 55 kb) replication "bubbles". However, the identity of the important *cis* acting sequence motifs, and the influence of chromatin organisation on the whole process, remain to be elucidated. Elegant biochemical work from Laskey's group on chromatin decondensation following fertilisation in *Xenopus* implicates a protein, nucleoplasmin, that acts as a "molecular chaperone" in the assembly of histones and DNA into nucleosomes. Analogous processes may be responsible for chromosome decondensation following mitosis. The chapter by Moens and Pearlman "probing pachytene chromosomes" is illustrated by some attractive colour photographs showing the synaptonemal complex and associated chromatin loops using in situ methods.

In summary, this is a well produced book that provides some interesting, but rather disjointed snapshots of the approaches being used to understand chromosome function at various levels of organisation. There are many obvious omissions, such as recent work on microtubule self-organisation, centromere structure and function, and comparative mapping and evolution of chromosomes, to name a few. A useful book to dip into, but one that lacks the depth of coverage to assure an extended shelf life. But then, perhaps it is simply too early to write a satisfying book with this ambitious title.

ANDREW WILKIE

Genome Maps and Neurological Disorders. Ed K E Davies, S M Tilghman. (Pp 125; £49.00.) New York: Cold Spring Harbor Laboratory Press. 1993.

Volume 6 in the Genome Analysis series contains five papers describing specific areas where molecular genetic advances have had particular impact in neurobiology. Each is well written and informative: two describe general applications (cloning and analysis of nervous system cDNAs and the use of mutant mice to study mammalian CNS development) while three are disease specific (fragile X syndrome, bipolar affective disorder, and Alzheimer's disease). The paper by Oostra and colleagues describing the genetics of fragile X syndrome stands out as the most complete and includes interesting discussion on possible mechanisms for trinucleotide repeat instability as well as summarising current understanding of the role of methylation in the silencing of the FMR-1 gene and the timing of the repeat expansion.

The other disease specific papers serve to remind us of two of the major pitfalls in identifying disease associated genes. Straub and Gilliam describe how initial evidence for linkage of bipolar affective disorder to chromosomes 11 (lod score 4.9 for HRAS1) and X (lod score 9.17 for Xq28 markers) was refuted by re-evaluation of the pedigrees and linkage data, the multipoint lod score for the X locus dropping to −2.04! This paper should be required reading for anyone embarking on linkage analysis for psychiatric disorders.

The paper by Talbot and colleagues addresses the more familiar problem of genetic heterogeneity as it pertains to Alzheimer's disease (AD). It also touches on the interesting association of polymorphisms of the ApoE gene on chromosome 19 with familial and sporadic AD.

This slim volume contains much of interest to researchers in the field of molecular neuroscience. It would be a welcome addition to any departmental library.

JOHN C MACMILLAN

NOTICE

IV International Fetal Genetic Pathology Workshop

The IV International Fetal Genetic Pathology Workshop will be held on 31 March–2 April 1995 at Malelane Lodge, Kruger National Park, South Africa. Main focus: 'Craniofacial development and malformation'. Other topics will be presented. Enquiries and further information from Lesley Stephenson, Conference Office, PO Box 327, WITS 2050, South Africa. Tel: 27 11 716 5091, Fax: 27 11 339 7835.
Please note: The South African Society of Human Genetics 6th Congress will be held on 27–29 March 1995 in Cape Town, South Africa.

Notice to contributors (general guidance)

The readership of *Journal of Medical Genetics* is world wide and covers a broad range of workers, including clinical geneticists, scientists in the different fields of medical genetics, clinicians in other specialities, and basic research workers in a variety of disciplines. It publishes original research on all areas of medical genetics, along with reviews, annotations, and editorials on important and topical subjects. It also acts as a forum for discussion, debate, and information exchange through its Letters to the Editor columns, conference reports, and notices. The editor is always grateful for suggestions or criticisms from readers and authors.

ORIGINAL PAPERS

These may be on any aspect of medical and human genetics and may involve clinical or laboratory based and theoretical genetic studies. If requested, authors shall produce the data upon which the manuscript is based for examination by the Editor. Guidance on length can be obtained from studying the Journal. Case and family reports may be submitted as *Brief papers*. *Short reports* should in general not exceed 500 words, with one or two illustrations, and the text should be continuous with no headings. An abstract should be provided for all papers. Contributions may also be submitted as *Hypotheses* or *Technical notes*. Accelerated publication of papers of particular importance will be considered.

REVIEWS

Short or longer reviews on all aspects of medical genetics are welcome, but should be discussed first with the Reviews Editor. Contributions on historical topics, or which could form part of specific series, are particularly acceptable.

ANNOTATIONS AND EDITORIALS

These are written or commissioned by the editors, but suggestions are welcome regarding possible topics and authors.

LETTERS

These are welcome on any relevant topic and will be published rapidly. Those relating to or responding to previously published items in the Journal will be shown to those authors, where appropriate. Although a paper submitted as an original report may sometimes be published in shortened form as a letter, it is preferable for initial submissions to be as a short report, unless directly related to a previous journal article.

CONFERENCE REPORTS

Reports from small to medium sized meetings, especially international workshops on specific topics, will be appreciated. Authors intending to submit conference reports should liaise with the Reviews Editor to avoid duplication.

SPECIAL ISSUES AND SUPPLEMENTS

These are published at intervals on topics of particular relevance. Enquiries are welcome from those organising workshops or symposia who may have material suitable for such an issue.

BOOK REVIEWS

The Journal aims to review as wide a range of relevant books as possible. Authors or others wishing to check if a book has been received may check with the Journal office. Computer programs and databases, official reports, and other material relevant to the field may all be appropriate for review. Enquiries about such items are welcome.

OBITUARIES

The Journal would like to be informed rapidly of the death of any senior or important person in the field of medical or human genetics, regardless of geographical location. In general, a brief notice would be published rapidly, with a longer obituary as appropriate. Since such deaths often occur many years after retirement, it will be appreciated if readers will contact the Reviews Editor so that appropriate arrangements can be made.

NOTICES

Notice of forthcoming meetings in different countries should be sent as far ahead as possible. Extensive descriptions should be placed as advertisements.

'CALLS FOR PATIENTS'

The Journal receives an increasing number of requests to publish notices of proposed studies involving patients or families with rare genetic disorders. In general such notices are appropriate only for major international collaborations; the proposer should ensure that such a notice does not conflict with existing studies or proposals.

ILLUSTRATIONS

High quality black and white photographs are preferred for most illustrations, particularly of patients. Colour illustrations can be accepted; however, authors are asked to pay part of the cost, so their desirability should be discussed in advance of submission. All identifiable photographs of patients must be accompanied by written permission for use.

NOTES ON NOMENCLATURE

Authors should refer to the following publications.

(1) Chromosomes: *ISCN 1985. An international system for human cytogenetic nomenclature*. Basel: Karger, 1985.

(2) Genes: Shows TB, *et al*. In: Human Gene Mapping 5 and 7. *Cytogenet Cell Genet* 1979;**25**:96–116, 1984;**37**:340–3.

(3) Loci: Conventional nomenclature should be used, with lower case lettering as appropriate (for example, Race RR, Sanger R. *Blood groups in man*. 6th ed. Oxford, London: Blackwell, 1975; and Giblett ER. *Genetic markers in human blood*. Oxford, London: Blackwell, 1969).

(4) Blood coagulation: International Committee of Haemostasis and Thrombosis (Graham JB, *et al*). A genetic nomenclature for human blood coagulation. *Thromb Haemostas* 1973;**30**:2–11.

(5) Enzymes: *Enzyme nomenclature: recommendations of the nomenclature committee of the International Union of Biochemistry*. New York: Academic Press, 1984.

Specific instructions to authors

Papers, which should be in triplicate and in the Vancouver style (*BMJ* 1988;**296**:401–5), should be sent to the Editor, *Journal of Medical Genetics*, BMA House, Tavistock Square, London WC1H 9JR and not to individual editors, with the exception of papers from the USA, which can be submitted to the North American Editor, Dr P M Conneally, Department of Medical Genetics, James Whitcomb Riley Hospital for Children RR129, Indiana University Medical Center, Indianapolis, Indiana 46223, USA. Submission of a paper will be held to imply that it contains original work which has not been previously published. It is the responsibility of the submitting author to ensure that all co-authors are agreeable for their names to appear on the manuscript. A FAX number should be provided. Permission to republish must be obtained from the Editor.

Where a patient(s) with a structural chromosome abnormality is described, the availability of a cell line(s) should be stated in the text together with its identifying number, cell bank, and, where appropriate, contact person.

All contributions should be accompanied by an abstract (preferably structured) giving the main results and conclusions. Typescripts should be at least double spaced with wide margins. One page proof will be sent to the author submitting the paper and alterations on the proof, apart from printer's errors, are not permitted. Reprints may be ordered when the proof is returned.

Figures should be kept to a minimum and should be numbered consecutively in Arabic numerals. Legends should be typed on a separate sheet.

Tables should not be included in the body of the text, but should be typed on separate pages and numbered with Arabic numerals. A legend should be provided.

References should conform precisely to the style current in this journal. Authors are responsible for the accuracy and completeness of their references as these will not be checked by the Editorial office.

Up to four keywords should be provided for indexing purposes.

GUIDELINES FOR SUBMISSION OF REVISED PAPERS

A revised manuscript should be returned within two months. Manuscripts returned after two months will be treated as new papers. When submitting a revised manuscript please ensure you enclose three copies of this and one copy of the original manuscript.