Book reviews

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Neurogenetics: Principles and Practice

By R N Rosenberg. (Pp xi + 324; figures + tables. \$54.50). New York: Raven Press. 1985.

The first one-third of this book comprises five chapters which deal with basic concepts: principles of genetics, genetic control of neuronal and glial differentiation, molecular genetics, neuro-oncogenes, and mouse neurogenetics. The inclusion of the latter is justified on the grounds that so many neurological mouse mutants have now been identified and studied, though many will feel that relevant information is still more likely to come from studying the human disease.

The remainder of the book is concerned with discussions of the clinical features, pathology, and treatment of various neurogenetic disorders. There is, however, unevenness in the presentations. Joseph's disease, which is one of the author's particular interests, is discussed in much detail, but other more frequent disorders are often dealt with somewhat cursorily: Huntington's chorea in just over two pages and limb girdle and facioscapulohumeral muscular dystrophies in two lines.

I suspect this book will probably appeal most to those working in neurology or the neurosciences who want to know something of recent developments in neurogenetics. However, for those actually practising clinical genetics it is not detailed enough to be really helpful with problems in genetic counselling.

ALAN E H EMERY

Annual Review of Genetics

Volume 19. Edited by Campbell *et al.* (Pp 590; figures + tables. \$27.00.) California: Annual Reviews Inc. 1985.

There is nothing in this volume which could be called obligatory reading for all clinical geneticists, but there are many useful reviews of areas we cannot totally ignore. There is something for everybody—provided you like DNA. It must be a sign of the times that of the 19 reviews eight might be classed as pure DNA, seven as applied DNA, and three as DNA related. Only Elizabeth Russell's 'History of mouse genetics' manages to avoid all mention of the stuff. However, if you find cloning

fearsomely complicated, read her account of mouse coat colour genetics—it was at least as bad in classical times!

The most clinically relevant chapter is by Stout and Caskey on the HPRT gene. Once again we see the power of DNA analysis both to unify (different mutations in the gene cause gout or Lesch-Nyhan disease) and to reveal new levels of heterogeneity. Most HPRT deficiencies with immunologically detectable protein show the less severe gouty phenotype, but at least one amino acid substitution results in Lesch-Nyhan disease. In 10 to 20% of Lesch-Nyhan patients there is a gross structural alteration of the HPRT gene; the rest must be tracked by intragenic or linked RFLPs. Stout and Caskey give an excellent, concise review which is most timely now that gene therapy seems imminent. By contrast, the chapter on the structure and evolution of the insulin gene by Steiner and colleagues from Chicago was almost entirely about the normal insulin gene. The hope that the closely linked hypervariable sequence would reveal common diabetogenic variants has not been fulfilled, although the search continues—a useful reminder that DNA analysis still faces considerable difficulties in unravelling non-Mendelian diseases.

Among the other reviews, I particularly enjoyed the chapter by Clarke and Carbon on yeast centromeres. In yeast the centromere consists of just 200 base pairs of unique DNA and binds a single microtubule. Yeast centromeres can be cloned into plasmids which, when equipped with telomeres and a replicator, may acquire some of the mitotic and meiotic stability of true chromosomes. It will be fascinating to see whether these simple structures help elucidate the far more complex centromeres of mammalian chromosomes.

Other chapters worth mentioning include Eisenberg on chromatin structure (Laemmlis loops and hypersensitive sites), Silver on mouse t haplotypes, and Mahowald and Hardy on *Drosophila* embryogenesis. As always, these volumes represent the quality end of the review market: carefully produced collections of mostly well written chapters by leading authorities, and they are a valuable source of good background material on a wide range of topics which are peripheral but far from irrelevant to clinical geneticists.

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