male with a single central upper incisor as the only minimal "holoprosencephaly sign" and without other dysmorphic symptoms. Pro-metaphase chromosome studies on a peripheral blood lymphocyte culture showed an apparently balanced 6q;7q translocation, karyotype 46,XY,t(6;7)(q15;q21.2) de novo.

The chromosome 7q21.2 breakpoint in the present patient with a single central upper incisor as the only manifestation of holoprosencephaly is thus identical to the 7q breakpoint found in the fetus reported by Benza-cken *et al.*¹ This observation reinforces the suggestion that disruption of a gene or separation from its regulatory sequences by the translocation breakpoint in 7q21.2 could be responsible for the occurrence of holoprosencephaly.

JEAN-PIERRE FRYNS

Centre for Human Genetics, University of Leuven,
Herestraat 49, B-3000 Leuven, Belgium

1 Benzacken B, Siffroi JP, Le Bourhis C, *et al.* Different proximal and distal rearrangements of chromosome 7q associated with holoprosencephaly. *J Med Genet* 1997;34:899-903.

BOOK REVIEW

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Gene Therapy for Neurological Disorders and Brain Tumours. Editors E Antonio Chiocca, Xandra Breakfield. (Pp 550; \$135.00.) Totowa, NJ: Humana Press. 1997. ISBN 0-89603-507-7.

This book looks at neurological and neuro-oncological gene therapy through a series of reviews of current understanding and practice and not as a recipe book of protocols and procedures. Readers will certainly have a better understanding of the relevant biology of the vectors discussed and their applications and limitations but would not be in a position to design experiments based on the contents. The book is divided into three parts: Vectors and Promoters, Neuro-oncology, and Neurological Disorders.

The chapters on the different types of vectors review the life cycles and genome structures of the various viruses as well as describing the development of the vectors for therapeutic use. The exception is the chapter on Epstein-Barr virus which is limited to reviewing the pathogenesis and biology of primary CNS lymphoma (PCNSL) and the use of EBV in the treatment of this disorder. Throughout the chapters, the enthusiasm of the authors for their chosen vector is continually tempered with acknowledgment of the current limitations of each virus. After reading these chapters, however, the reader is left with the feeling that "some day this will

be useful". As the editors comment, "the unrealistic perception of gene therapy as a "cure" or as "a failed treatment", created by premature and exaggerated news reports, is likely to disappear". The area where real therapeutic gains are first likely to come is the focus of the second part of the book, neuro-oncology. This begins with a comprehensive review of current treatment modalities for brain tumours and their deficiencies and is followed by chapters on gene therapies and specifically tumour suppressor therapy and cytokine based gene therapy (with 410 references!). The review on delivering therapeutic genes to the brain discusses direct inoculation and blood brain barrier disruption and the reader is left with the feeling that for the disorders discussed in the final part of the book, neurological disorders, only the latter approach is likely to suffice. The chapter on CNS regeneration is followed by specific chapters on Parkinson's disease, ischaemic stroke, lysosomal storage diseases, and Huntington's disease. They are of necessity largely theoretical (from a human perspective) but do show how the basic science of gene therapy is rapidly advancing on areas of clinical utility. There are a few niggling errors, such as the reference to the Huntington's disease gene as ITIS on two occasions (including the first sentence of the chapter on HD) and automatic spell check generated word substitutions ("transpose" for "transgenic").

Overall the book makes interesting reading for those looking for reviews of the current standing of gene therapy in the CNS. It would not, however, be high on my list of "must haves" for a genetics departmental library and I doubt whether it would find a place with colleagues actively working in the field.

JOHN MACMILLAN