

cussed by Chao (chapter 8). Transfection and expression in mammalian cells can also be used for the purpose of isolating gene sequences (Pellicer, chapter 10) and for the study of gene amplification and coamplification of linked genes (Wahl et al., chapter 11). Introduction of new sequences into the mouse germ line by microinjection of embryos has been a fruitful approach in the study of development and the regulation of tissue-specific expression (Tilghman and Levine, chapter 7). The excellent review of this topic includes observations on virus infectability and viral gene expression in developmental systems.

Transfected DNA undergoes many specific and nonspecific reactions intracellularly. The tendency for nonspecific rearrangements to occur has been effectively assessed by using autonomously replicating shuttle plasmids that are easily rescued from mammalian cells and scored in bacteria for mutational events (Calos, chapter 9). Incoming DNA usually integrates randomly but is subject to homologous recombination either between transfected DNA molecules or between transfected DNA and host chromosome sequences (discussed by Kucherlapati, chapter 13). Vectors can also be engineered and integrated into mammalian cells for the purpose of assessing and characterizing intrachromosomal recombination events (Letsou and Liskay, chapter 14).

To maintain coherence throughout the volume, the editor has organized the chapters so that the material presented in each of them nicely complements that contained in other chapters. I find this book to be a useful introduction to mammalian gene transfer concepts for graduate students and other newcomers in this area, as well as a convenient reference source for specialists in the field.

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Cleft Lip and Palate: Aspects of Reproductive Biology.

By Krishna R. Dronamraju. Springfield, IL: Charles C Thomas, 1986. 165 pp. \$24.75.

Cleft Lip and Palate is an original attempt to illustrate the importance of prenatal selection as a determining factor in the prevalence of congenital malformations. The subject is introduced in the first chapter, where a description of the magnitude of prenatal selection against malformed embryos/fetuses in human and other species is given. Of particular value is the detailed account made of the original contribution of Dr. Nishimura to this field.

The second chapter outlines the epidemiology of various forms of oral clefts. This chapter contains a remarkable iconography of various forms of oral clefts.

The third chapter critically and convincingly examines the available evidence on the existence of prenatal selection against embryos/fetuses with oral clefts. It is the cornerstone of the book. Under direct scrutiny are the signs of operating prenatal selection (e.g., sex ratio at birth, time interval between successive pregnancies, etc.) in relation to the prevalence of various forms of oral clefts in three large studies, one of which is contributed by the author. Of particular significance is the implication of the existence of prenatal selection on the etiology of "sporadic" and familial oral clefts. The concept is very well summarized in a diagram on page 73. The chapter ends with a brief description of possible causes of death in embryos/fetuses with oral clefts.

The following chapter is a short review of the known genetic and environmental factors involved in the etiology of oral clefts. The author favors a multifactorial threshold model to interpret the available human data. A three-threshold model is proposed to take into account the previous data on fetal mortality. A brief chapter on syndromic oral clefts closes this section of the book. I found this section of the book rather weak. Considerable attention is given to the genetics of liability to cortisone-induced cleft palate but without addressing the difference that might exist between it and liability to cleft palate per se. Also, a detailed comparison of the several models proposed to explain the inheritance of oral clefts in humans would have brought considerable insight to the subject.

In the last section of the book, the author provides a succinct description of the concepts of genetic homeostasis and phenodeviants, and a systematic attempt is made to illustrate how the available human data may well fit these concepts. Although of great importance, I wish that these concepts had been introduced at the beginning of the book, to give the reader an underlying framework when walking through the book. A list of good suggestions for future research completes the work.

In my view, *Cleft Lip and Palate* is a challenging book. It is a book of concepts, and as such it should be required reading, particularly for human geneticists involved in developmental and prenatal genetics. Although the book is at times repetitive and the presentation of the tables and figures is somewhat in disarray, it is well written and contains an impressive iconography.

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Leaves of the Tulip Tree. By Juliette Huxley. Topsfield, MA: Salem House, 1987. 248 pp. \$16.95.

The serpent was at the root of their problems. So it seemed, or perhaps it was their own fault for succumbing to temptation. In any case, Adam and Eve were expelled postprandially from the Garden of Eden. They were driven out of