

written by a clinician. Dr. Valentine has largely succeeded in his efforts to write a most readable book on human cytogenetics specifically for a clinical audience. As a result, there is much simplification and a few errors. The book has, however, been completely rewritten and some chapters considerably enlarged—in particular, Chapter 1. This is useful as some background on molecular genetics is essential. The section on the XYY condition is also expanded and is particularly valuable, drawing as it does on Valentine's personal experience with four of these children detected as newborn infants and in particular the difficult problem of what to tell the parents. There is, however, one major criticism; no mention is made anywhere of the international notation for describing chromosome abnormalities which was accepted by an International Conference in Chicago in 1966. This is now accepted and is being used by most major journals and should be known to everyone likely to read the cytogenetic literature. An appendix giving this would have been desirable.

In general the book is well produced and the illustrations good, some of the diagrams may not be as clear as they might have been, but no glaring errors are evident. The book is readable, short enough to be read by a busy clinician and should be compulsory reading for many clinicians who, for the flimsiest of reasons, request karyotypes from their local laboratory; if only a few of these unnecessary requests are eliminated the book will have been justified. The book is a reasonable price and to be recommended to the audience for which it was intended.

JOHN L. HAMERTON

#### **Human Afflictions and Chromosome Abberations.**

By Raymond Turpin and Jérôme Lejeune. (Pp. x + 392; figures + tables. 160s.; \$21.00.) Oxford: Pergamon Press. 1969.

This is the long-awaited English translation of the French classic 'Les Chromosomes Humaines'. The French work appeared in 1965, and it is a great pity that apart from one chapter no attempt has been made to bring the present volume up to date. The tremendous volume of work done in the past four years, which is thus omitted, makes this a far less valuable publication than it might have been. However, having said this, it is still valuable to have this classic work available in the English language. It is a pity that more care was not taken with the translation. The English is often clumsy and hard to read, due, in places, to an almost literal translation from the French. The only chapter to be brought up to date is Chapter 13 which deals with monozygotic twins with unlike chromosome complements. This is an interesting phenomenon originally described by Turpin and his co-workers, but is essentially an extension of the principle of non-disjunction followed by uniovular twinning and does not raise any new points of principle. The recent work on the XYY males is not mentioned nor has the bibliography been brought up to date to any degree.

The book is well produced with excellent photographs

and diagrams. As it is, it will be a useful addition to the human cytogenetics literature. A little forethought could have made it invaluable.

JOHN L. HAMERTON

**Chromosomes and Genes. The Biological Basis of Heredity.** (Contemporary Science Paperbacks No. 30.) By P. C. Koller. (Pp. vii + 144; 37 figures + 19 tables. 7s. 6d.) Edinburgh: Oliver & Boyd.

This is an excellent little book aimed at the informed layman and student. It covers, in easily understood language, cytogenetics and cell biology, and is to be recommended to all who wish a closer understanding of these subjects which form the background to the many exciting studies in human heredity covered in the last two chapters.

The author is to be congratulated on the clarity of the presentation of a great deal of complex data in a fairly compact space and in a language that should be understandable to all.

JOHN L. HAMERTON

**The Elements of Cytogenetics.** (Selected Topics in Modern Biology.) By G. B. Wilson. (Pp. viii + 120; figures + tables. 21s.) New York, Amsterdam, London: Reinhold. 1968.

This is a useful little book for students and others requiring a simple and inexpensive text on cytogenetics. The basic principles are clearly covered in the first four chapters.

Chapter 5 deals with alteration in chromosome constitution, while the remaining chapters are concerned with sex determination, chromosome analysis and techniques, and the essentials of chromosome mechanics. This is a useful little book for students requiring a simple basic text in cytogenetics. In view of its importance it is a pity that more examples were not taken from human cytogenetics. This would have even merited a chapter of its own and would have made this book more valuable to the present-day student, particularly as many of the openings in cytogenetics are in this discipline.

JOHN L. HAMERTON

**Endocrinopatile Genetice.** By St. M. Milcu, C. Maximilian, and B. Ionescu. (Pp. 479; illustrated + tables). Bucarest: Republicii Socialiste Romania. 1968.

This Rumanian treatise on the genetic aspects of endocrine disturbances has been written in the conviction that most endocrinopathies are genetically determined, and that such affections are of outstanding importance clinically. The English reader will appreciate the English summary of 15 pages, the illustrations, and the extensive and full references to the literature. The text covers systematically the different endocrines (though it

is not clear why the Laurence-Biedl syndrome should appear as a disease of the pituitary body). These chapters are followed by discussions on such clinical entities as diabetes, hypoglycaemia, obesity, and the wasting diseases. But much the largest part of the book—nearly 300 pages—is devoted to sexual differentiation and the gonadal dysgeneses, drawn largely on British and American sources. This is a well-planned and well-produced book.

ARNOLD SORSBY

**Gene Activity in Early Development.** By Eric H. Davidson. (Pp. xi + 375; illustrated + tables. 116s. 6d.) New York and London: Academic Press. 1968.

Now that the basic principles of human genetics and cytogenetics are well established, the problem of how genes function during the development of the embryo will become of increasing importance. The present book is confined to early development up to the immediate post-gastrula period. It is perhaps hardly to be expected that Mendelian genes would feature prominently in an account of these stages. Indeed, most of the genes that are mentioned do not occupy specific positions on the chromosomes, neither do they segregate or mutate; in fact, they seem to be more or less synonymous with DNA. There is no mention, either, of the recent advances in cytogenetics. Illustrations of chromosomes are confined to those of *Ascaris*, drawn by Van Beneden in 1884, and to lampbrush chromosomes of oocytes.

Clearly, a synthesis between classical genetics and embryology has not yet been achieved, but those geneticists who are working towards this goal will find a considerable amount of important information in Dr. Davidson's book.

Though mainly concerned with biochemical embryology, it does not neglect the results of classical experi-

mental embryology. There are four sections. The first one reviews experimental data on very early embryos, particularly with regard to DNA synthesis. Beginning with the premiss that cellular differentiation results from the activation of different genes in different cells, the author reviews the evidence that all the cells of an organism have the same 'genome' as the original cell of the zygote. This includes the early evidence by Driesch on the totipotency of the products of cleavage, the findings of constancy of DNA in different cells of the body, the apparent equivalence of DNA sequences in different tissues as shown by DNA/DNA hybridization studies by McCarthy and Hoyer, and Gordon's successful results of implanting differentiated nuclei of *Xenopus* larvae into enucleated egg cells. There is no mention of the fact that the most common cell for obtaining human chromosomes is the lymphocyte, which is highly differentiated and does not normally undergo any more cell divisions.

The second section considers the cytoplasm as a possible source of differentiation. The assumption is that cytoplasmic molecules specify the pattern of gene activity in the embryo. The embryonic cytoplasm is laid down during oogenesis, and this is the topic of the third section of the book. It includes a detailed discussion of the biochemical findings on lampbrush chromosomes as well as a word of caution that the techniques used to measure cytoplasmic DNA are not always reliable. The last section deals with the different intervals of time that elapse between events in oogenesis and their possible effects on the embryo; in addition, there is some speculation on the operon concept as applied to higher organisms, the theory of which has since been further elaborated by Britten and Davidson.

By putting together a great deal of available data and posing many timely problems, this book is a welcome stepping-stone on the difficult route towards a new developmental genetics.

URSULA MITTWOCH