do not detract from its great value. It is an authoritative, readable, and informative account of the anomalies of the human chromosome and of their clinical results.

P. E. POLANI

Die Chromosomenstruktur des Menschen in Mitosis und Meiosis. By Paul Eberle. (Pp. xii + 261; 113 figures. DM 58.) Stuttgart: Gustav Fischer Verlag. 1966.

This monograph, the second in a series on evolution by the Fischer Verlag, deals with evolutionary changes only in some comparative and theoretical sections. The text is mainly devoted to a clear and detailed description of the mitotic and male-meiotic structures of human and rodent (mouse, rat, hamster) chromosomes, and to the chromosomes of two insect species (*Drosophila hydei* and *Locusta migratoria*) and of a dioecious plant (*Melandrium*)—descriptions based mostly on the author's own studies and lavishly illustrated by his own photographs. As such it presents an excellent introduction into normal animal cytology, but it does not describe very fully the chromosomal aberrations of man.

An original feature of the book is a discussion in the last chapter on the role of chromosomal aberrations and of mutations and other related changes in anthropoid speciation. These are also speculations on the future chromosomal development of our species. These are illustrated by a series of hypothetical karyograms, showing a gradual reduction from the normal diploid number of 46 to 44, 42 and 40.

Separate bibliographies are arranged after the individual sections and there are additional references at the end of the book. There is no index, but there is a fairly detailed list of contents at the beginning of the book.

H. KALMUS

The Role of Chromosomes in Development. 23rd Symposium of the Society for the Study of Development and Growth. Edited by Michael Locke. (Pp. xii + 290; illustrated. \$11.00.) New York; London: Academic Press. 1964.

The contents of this book, which are papers read at the 23rd Symposium of the Society for the Study of Development and Growth, are not closely related to the title. The introductory chapter, which has the same title as the book, reviews the problems and is perhaps suitably speculative but even here most of the discussion is of basic molecular and cell metabolism mechanisms. Of the remaining chapters only that on genetic and functional mosaicism in the mouse, and that on genetic control and regulation of developmental pathways, are of a kind which the title of the book suggests.

The other chapters by distinguished authors are interesting and any elucidation of gene action and control of cellular differentiation in either the simplest or the most complex of organisms will lead to a better understanding of the developmental process. Further, the corpus of knowledge based on experimental findings

in this field is so enormous that reviews by authorities are always welcome. There are, however, so many closely argued published papers of these types that no one can be expected to read and absorb them all. This volume was published in 1964 and the papers were presented earlier that year. In such circumstances the non-expert reader must wonder what is now out of date and what is still valid.

This is a well-produced and clearly illustrated book and all the subjects dealt with are well reviewed. These are, in addition to those already mentioned, structural patterns and the functional organization of chromosomes; chromosomal proteins (a most useful introduction); binding of actinomycin as a model for the complex-forming capacity of DNA; DNA replication sequences in higher animals; localized DNA synthesis in polytene chromosomes and its implications; chromosomal RNA and other nuclear RNA fractions; genetic repression of R action in maize; and macronuclear differentiation and subnuclear assortment in ciliates.

CLARE DAVISON

The Chromosomes of the Algae. Edited by Maud B. E. Godward. (Pp. ix + 212; illustrated. 55s.) London: Edward Arnold. 1966.

This little book consists of a number of articles by various authors, each describing his or her own interest. The editor and author of an account of the green algae is Professor Maud Godward. The authors have been left to their own devices without interference from the editor, excepting, one assumes, a general directive as to form and content. The result is a description of the techniques used and observations made on the nuclear cytology of six of the major groups of algae. Four groups have been omitted for lack of extensive information about their chromosomes and one is only briefly mentioned. The layout of all the chapters follows a common pattern, so it is easy to make comparisons from one group to another, should one wish to do so. In every case the techniques have been described with great clarity so it should be possible for anyone wishing to do similar work to achieve comparable results. The main virtue of the book is the almost casual way in which the cytological virtuosity present in the algae is displayed. Some of the groups described are fairly humdrum, and they offer nothing that cannot be seen better in angiosperms. One or two groups, however, have built a whole way of life on what might be described as an unusual cytology. The information given can only stimulate curiosity and a number of questions. For example, the meiotic problems posed by crossing-over in chromosomes with diffuse centromeres, the equational segregation at the first meiotic division in *Spirogyra*, the regulation of chromosome number and size in organisms where, because of diffused centromeres, chromosomes can fragment indefinitely and still segregate properly are all teasers. One must also mention the article by Dixon on the red algae. This is a scholarly treatment of a group of algae, which has apparently eluded or deluded the body of descriptive botanists and remained