of presentation, he can obtain a great deal of information about malignant disease in children. In particular it would probably be very useful to the clinician who sees only an occasional child with malignant disease, as it does stress the presentation and clinical course. We hope this will aid clinicians to an earlier diagnosis of malignant disease.

D. PEARSON

Handbuch der Mikroskopischen Anatomie des Menschen, Vol. 1, Pt. 3, "Chromosomes". H. G. SCHWARZACKER (1976). Berlin, Heidelberg, New York: Springer-Verlag. 182 pp. Price \$55.80.

In this attractive part 3 of volume 1, "The Living Substance" of "Handbuch der Mikroskopischen Anatomie des Menschen", Professor Hans Georg Schwarzacker writes about "Chromosomes in Mitosis and Interphase". The restriction in title enables the author to go into the topic in some depth, without distracting the reader with too many and often seemingly unconnected facts. There are now many exciting new developments in chromosome studies, and Professor Schwarzacker has made a well balanced exposé without losing cohesion and thereby the attention of the reader. In parts, the book surveys the author's own field of research, and this is recognizable by a more authoritative manner. The book is provided with very good illustrative material (116 figures) and ample references to literature for further studies. The present time is well suited for this book, which is likely to remain useful for a longer period than is normally the fate of such introductory books. The text (80-90 pp.) is an excellent example of how much information can be conveyed without confusing the reader, in a field where the problems of communication without a vast amount of illustration are particularly great.

Minor criticisms can be raised, although these detract slightly from the value of this excellent little book. However, the importance of BrdU as a tool for the study of DNA synthesis, strand segregation, sister chromatid exchanges and mitotic cycle recognition should have been discussed, particularly as there are already important results available.

It is, to some extent, regrettable that the almost universal use of mitotic arresting

agents has resulted in the absence of anaphase information; indeed, some of the younger students of human chromosomes may never have observed this stage. Consequently, seriation of mitotic stages may lead to confusion between cells with large and cells with small chromosomes, as found in certain tissues. Protein contents of chromosomes vary, and tissues with a definite hierarchical system of cell relationship can be expected to show variation in chromosome sizes in different cell lineages. Figs. 12 and 13 probably do not represent the same cell type, if the magnification is correct. In the context used, however, this criticism is not so important. In the section on multipolar mitosis (Chapter IX), the reader is left with the impression that sex chromosome segregation in *Microtus agrestis* is synonymous with genome segregation, although there is no evidence as to how often this is simultaneously achieved. That it *can* be achieved is not quite the same thing. In discussing somatic pairing, or rather the association of homologues, the author might have referred to constitutional triploidy, where *two* homologues fairly frequently display both association and concordance of distortion. This, together with the association of identical Y chromosomes in XYY individuals, might indicate that strong somatic association requires a high degree of identity such as is rarely found between homologues. As it is so rarely observed in diploid cells, segregation might have already occurred, i.e. the associated chromosomes are identical. Computer studies of lymphocyte metaphase spreads show that association of homologues is marked for acrocentrics, as expected, but is little more than a weak tendency for other chromosomes.

As stated above, Professor Schwarzacker's book can be recommended as an excellent introduction to somatic chromosome studies, and should be read by clinical geneticists, clinicians and medical students alike, as it is one of the best books on chromosomes now available.

S. MULDAL

Wilms' Tumour. ED. CARL POCHEDLY and DENIS MILLER. (1976). New York: John Wiley & Sons. 239 pp. Price £12.30 net.

In this, the first ever monograph on Wilms' tumour, the editors have very success-

fully collected together all the known facts about this tumour of the kidney in children. The contributors have been drawn from all over the world, and have been well chosen for their particular knowledge of Wilms' tumour.

The information in the book covers everything that at present is known about this subject, from the historical background, right through to present day management and prognosis.

There is in the book something of interest for all the different clinicians, such as surgeons, radiotherapists and chemotherapists who are concerned in the management of Wilms' tumour. In addition, the help which the clinician can receive in diagnosis from the radiologist, biochemist and histologist, is well documented.

For the research worker, the genetic and teratogenic aspects are well covered, as is the present state of our knowledge on the immunological reaction of the patient to his tumour, and of other animal species which develop similar tumours.

I found this to be a most readable book, well written on all aspects of Wilms' tumour. It is well illustrated, on the whole well produced and is recommended for all those interested in paediatric oncology.

D. PEARSON

Cell and Tissue Culture. 5th Edn. JOHN PAUL (1975). Edinburgh: Churchill Livingstone. 484 pp. Price £7.50 net.

I was learning cell culture in the author's laboratory when the 1st edition of this book was published in 1959, and I still have my autographed copy, despite its being borrowed on many occasions by newcomers to the field. This indeed is the chief value of the book: as a bench manual for scientists to use the various techniques which are available for studies with higher cells than are used by microbiologists.

In the preface to this 5th edition, the author reminds us of his original aims which,

apart from describing how to do it, were to "persuade biologists that tissue culture is not particularly difficult and to urge that it be used as a means for achieving scientific ends rather than as an end in itself". Comparing this edition with the 1st, one notes that the number of pages has risen from 261 to 484 (and the price has risen from £1.50 to £7.50). The increased contents include revised versions of many of the original 19 chapters which lay down guidelines for the techniques. Then there are 5 chapters on their application, including such topics as genetics and cancer.

The question arises whether the new book needs to be so much larger than the old (it has enlarged progressively through each edition). Would it not be more useful to return to the simpler format with just the basic techniques, leaving the scientist to pick up more specialist techniques from the appropriate literature? Would it not be a service to the scientific community to place even more emphasis on standardization of culture conditions? Is it really necessary, for example, to add antibiotics routinely to culture medium, now that laminar flow cabinets are available to provide aseptic working conditions?

Two deficiencies seem worthy of mention: although there is a chapter on *in vivo* cultures, the *in vitro* advantages of spheroidal cell cultures do not seem to have been mentioned. Tissues from cold-blooded vertebrates and invertebrates still seem to be neglected, judging by the small amount of space devoted to these systems, which permit metabolic studies to be undertaken over a much more convenient time period than applies to mammalian cultures. Praise is due, however, for the inclusion of 2 short appendices on Tissue Culture Literature and Biohazards. The latter provides an important "Code of practice" which should be read by all involved in these techniques. Indeed, the whole book deserves a place on the bench of every laboratory where cells and tissues are cultured.

A. H. W. NIAS