BOOK REVIEWS

*Trends in Cancer Survival in Great Britain.* Cancer Statistics Group, UK, Cancer Research Campaign, 214 pp, 1982. ISBN 0 9508422 0 6.

This volume presents information on survival for 27 cancer sites for the periods 1960-64, 1965-69 and 1970-73. It is based on data for England and Wales as a whole, for Scotland, and from the cancer registries of Cambridge, Mersey, South Thames (S.E. and S.W. Thames Regions) and West Midlands, with the hospital registry of the Christie Hospital and Holt Radium Institute in Manchester. The report is in sections for each form of cancer, beginning with a short commentary and including national mortality and incidence rates by age, and 1-year and 5-year survival for each country, regional and hospital registry. Both crude and relative survival rates are given, the latter adjusting for the probability of dying from other causes.

The choice of the four regional and one hospital registry is somewhat arbitrary, and does not allow for meaningful comparisons between regions because of differences in the patterns of referral, and in the registration process whose effect cannot readily be measured. The regional and hospital registries serve a different purpose because they provide additional data on staging and treatment so that survival by stage is shown for six sites, larynx, breast, cervix uteri, corpus uteri, testis and bladder; for eleven sites it is shown for cases treated radically as well as for all cases; for skin, breast, ovary, testis and kidney there is also some analysis by histology.

The analysis shows trends which are not unexpected but it quantifies them. It demonstrates the clear-cut improvement in survival for Hodgkin’s disease and acute lymphatic leukaemia; for the former the 5-year relative rate had moved from 30% in 1960-64 to 55% in 1970-73, for the latter from 5 to 20–30% over the same period. There were also indications of slight improvement for some forms of cancer, oropharynx, larynx, melanoma, breast, cervix, testis, bladder and kidney, but for the remainder, including cancers of the gastro-intestinal tract and lung, a disappointing lack of improvement. Where it was possible to analyse by stages or for early cases there were large differences, e.g. 5-year relative rates of 70–80% for stage I breast cancer, compared with 3–14% for stage IV, and for lung cancer one-year survival of as much as 65% for ‘early’ disease compared with only 20% for all cases.

The general comment is made that where there has been improvement it has been most marked between the second and third periods, and this offers promise of what may appear for later cohorts. This report should therefore best be regarded as part of a series with the OPCS and Scottish reports on cancer statistics. The layout is clear, each of the 27 sections showing graphs and tables relating to a particular cancer, but it could with advantage have been condensed and rearranged to facilitate comparisons between sites and with data for subsequent years.

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*Mechanisms of Chemical Carcinogenesis.* Edited by C.C. HARRIS & P.A. CERUTTI, USA, Alan R. Liss Inc, 606 pp, 1982, $98.00.

An excellent, well presented collection of papers which were given at the plenary sessions of the UCLA Symposium held in Keystone, Colorado in the Spring of 1981. About two-thirds of the papers have already been published, some in the Journal of Supramolecular Structure and Cellular Biochemistry (1981) and subsequently under the new title of Journal of Cellular Biochemistry (1982), while the remaining third are published for the first time in this volume (MCC).

Initially, it is difficult to ascertain the lay-out of this book as the order of publication in the original journal is maintained and the majority of the papers therefore carry two separate page numbers. The careful attention given to the lay-out of the Contents section however, largely compensates for this and provides the reader with the overall theme for the volume.

The earlier chapters of the book deal with the complex array of biochemical mechanisms for detoxification and the generation of highly reactive chemical species which lead to the modification of cellular constituents and subsequently to cancer. In some papers emphasis was placed on elucidating the ways in which human cells metabolise carcinogens, thus offering the long-term potential of determining the contribution of different classes of chemical carcinogens to the incidence of human cancer.

Another large group of papers describes cellular mechanisms for processing DNA damage, again
with a good deal of emphasis on DNA repair in human cells and particularly with respect to repair in cells from patients with hypersensitive diseases. The phenomenon of inducible repair is discussed with respect to possible protective effects which in eukaryotes may alleviate both mutagenesis and carcinogenesis. The importance of chromatin structure in modifying or affecting the accessibility of sites to DNA repair processes is analysed with reference to recent controversies and the possible relationships between DNA repair defects and chromosome breakage syndromes are considered.

Chapters on in vivo and in vitro carcinogenesis deal with classical multi-stage carcinogenesis in mouse skin in which the sub-division of promotion into at least 2 stages is described and in vitro systems are used to examine details of initiation and promotion and the ways in which these processes may be inhibited. Other groups of papers deal with the genetics of malignancy and with the importance of growth factors for normal and malignant cells.

The impact of new molecular biological techniques are evident in this symposium. Their use in the detailed analysis of DNA repair mechanisms is identical and studies in the control of the regulation and expression of virus genomes transfected into mouse teratocarcinoma cells are described. In one paper evidence is given for massive gene amplification induced by a variety of chemical carcinogens, thereby emphasising the importance of chromosomal rearrangements in mechanisms of chemically-induced cancer.

The symposium contains several overview and summary papers, e.g. by Weinstein, Hanawalt et al, Pitot et al, Montesano, Heidelberger and Cairns which are valuable to the student both for the comprehensive nature of the review material which some of these articles contain and for their informed comment.

In summary, although much of the work is already published elsewhere the book is valuable because it is only here that the threads of the meeting are drawn together in a comprehensive way.

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Chemical Carcinogenesis—NATO Advanced Study Institutes Series, Edited by C. Nicolini, New York, Plenum Press, 492 pp, 1982, £59.50. ISBN 92 832 11391.

This book reports the proceedings of the course of the International School of Pure and Applied Biostructure—a NATO Advanced Study Institute, held in Italy in October 1981. The book is divided into four sections which contain papers on (a) chemicals as carcinogens (b) DNA adducts (c) chemicals as promoters (d) carcinogenesis as a multistep process. Clearly no single volume could cover in depth all these areas of study. In fact many of the 3-5 chapters within each section present specialised research reports rather than general reviews, making the book unsuitable for the general reader seeking an introduction to the subject of chemical carcinogenesis. Furthermore several of the chapters deal with techniques such as alkaline elution, fragmentation of DNA and measurement of viscous and elastic components of DNA. No doubt such techniques have a place in carcinogenesis research but are hardly central to the understanding of cancer causation. These and several other topics discussed would seem to represent the particular interests of the Italian sponsoring organisation.

Specialists in chemical carcinogenesis seeking the latest ideas in their subject must realise that the papers were presented 18 months ago, but they will no doubt find some chapters of relevance to their own research interests.

The book is reproduced directly from the submitted typescript but this has been very well done and makes for clear reading and the illustrations and figures cannot be faulted. Each chapter has an adequate number of references but their style of presentation is not consistent, and there is no author index.

In summary I think the book would disappoint the general reader attracted by the title, while the specialist might liken it to the Curate's egg!

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Cancer Therapy, Edited by D.S. Fischer & J.C. Marsh, Boston, USA, G.K. Hall Medical Publishers, 749 pp, 1982, £55.00. ISBN 0 8161 2219 9.

This book developed from a series of lectures given in Connecticut hospitals in the United States of America. It was the original intention to publish just the 36 lectures, but large areas of importance had been omitted. To rectify the omission, 33