Radiating physics to medics

Radiation Risks — An Evaluation
By David Sumner

This book has been missing for too long. The space between primary literature and superficial journalism has always been a breeding ground for speculation, misconstruction, quibbling and hysteria. Now, more than ever, it must be filled with established facts, honest doubts and expert opinion that is clearly both expert and opinion. Here is a sandbag to stem the tide of ignorance.

David Sumner is a medical physicist. More importantly, he belongs to the class of scientists with the experience, confidence and understanding to present the state of his art 'as found', neither papering over the gaps in current knowledge nor exaggerating them in a fatuous expose. He has the courage to present his own opinions as such and to keep them carefully distinct from the train of scientific argument.

The prose style is easy and each chapter has the structure of a good lecture: an introductory review and synopsis, a strong line of reasoning with links to common knowledge and experience, a tidy summary and a balanced list of authoritative references. The overall structure of the book is a logical consequence of the subject matter: a review of physics and cell biology leads to a discussion of the effects of radiation on the body, thence to background radiation, medical uses of radiation, risk estimation, derivation of dose limits and studies of low-level exposure. The progress from established physical facts to the uncertainties of 'leukaemia clusters' is smooth and seamless.

The last two chapters are a factual account of the Chernobyl accident, with a calm assessment of its consequences, and a concluding discussion on 'the risks of low level radiation' that would serve as a good model for anyone wishing to present the subject to a non-expert audience. In the case of Chernobyl, Sumner puts the incident into perspective against other civilian nuclear incidents, deals briskly with the cause of the explosion, then summarizes its local and widescale effects with particular reference to radionuclide deposition in the United Kingdom. The discussion regrettably shies away from considering the risk of further serious accident but concentrates on the more or less inevitable increment in background and occupational exposures associated with nuclear power and medical radiation, and does so in an even manner.

An appendix deals with the properties of specific radionuclides. This well-presented account typifies the demystifying theme of the book. The glossary makes no concessions but guides the intelligent layman efficiently through contemporary jargon.

No first edition can be perfect in the eyes of a reviewer, nor can an entirely uncritical review be convincing. The introductory chapters are perhaps more detailed than necessary for appreciating the remainder. Some reference to immunosuppression, however contentious, might have been welcome on grounds.
of topicality. Reference to 'maximum permissible dose limits' is not consistent with the terminology or philosophy of the Ionising Radiations Regulations, wherein the maximum permissible is 'As Low As Reasonably Achievable', i.e. the ALARA principle takes legal precedence over any arbitrary limit. The omission from the bibliography of the Swedish Government report 'After Chernobyl' may be a matter of unfortunate timing, but a discussion of the environmental impact of non-nuclear power generation, as in that document, is surely essential to the cost-benefit argument.

There is one sadly muddled paragraph that should link the ICRP 1987 recommendations to the risk-benefit analysis, but fails. The protection of critical groups through a general reduction in exposure is even less valid in the case of radiation than in the quoted analogy of heavy drinking. Where the critical group consists of named individuals exposed to an avoidable hazard, it is practicable and effective to control that hazard. As 90% of the UK population dose is from unavoidable natural background sources, the effect of reduced dose limits for man-made radiation is unlikely to be measurable in the mean population dose, not would a general reduction in population dose (e.g. through changes in building standards) offer significant benefits to those whose working hours and conditions are restricted by occupational dose limits.

The page layout could be improved with advantage. The typography is adequate for a textbook but a little stark for easy reading. The illustrations are excellent. The book is very good value for money and thoroughly recommended.

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Health for rights

Health and Human Rights
International Commission of Health Professionals

This book is a collection of 12 articles, speeches and reports which represent the thinking of several of the founders of the International Commission of Health Professionals for Health and Human Rights (ICHP). The articles appear in their original languages (English, Spanish, French) and concern a variety of issues that include medicine and torture, military use of psychology, professional ethics, ethics in prison health care, ethics of death and dying, and health effects of the nuclear weapon industry.

An informative and interesting article is by Dr Rosalie Bertell, a commissioner of ICHP, who raises the question of human acceptability of the 'deterrence' argument used in justifying the nuclear weapon industry. Dr Bertell challenges the notion of a 'peaceful atom program' and draws a conclusion, based on a clear methodology and data from United Nations documents, that the number of deaths and injuries caused by the production and testing of nuclear weapons exceeds the criterion normally tolerated from other hazardous industries.

Also addressed in the book is the controversial role of 'human nature' in causing human misery and self-destructive tendencies. George Wald, professor of biology, winner of Nobel Prize for Physiology, 1967, convincingly argues that the new sociobiology is irrelevant to the present human condition and points to the industrial revolution as the main cause of devastation on our planet. Industrial pollution, unemployment, and nuclear threat are all our own doing and are not dictated by genes or 'human nature'.

Although the book covers a variety of important issues, it is somewhat difficult to discern a uniform approach shared by all its authors to the question of human rights. Whether the book as a whole is designed merely to make a liberal protest against the violation of human rights or to put forward radical political/ideological arguments based on data and a systematic analysis of the world socio-econo-political situation is unclear. The purpose appears to be variable from one article to another. (Whether this is a weakness or strength of the book would very much depend on the views of the reader.)

Several articles dealing with the issue of torture convey the important message that torture is an intolerable infringement of human rights and we all must do something about it. More could be said, however, about the economic and political context in which it takes place, how it is perpetuated, and what exactly the course of action should be in counteracting it. The role of economic and political interests which often override humanitarian concerns and impede progress could have been more adequately dealt with in some of the articles. An exception is the excellent article on the Philippines by AKAP (Health Movement of the People) and KAAKBAY (Movement for Philippine Sovereignty and Democracy). This is a detailed and very informative account of the historical, social, cultural, economic, and political profile of the Philippines, based on extensive research and rich data. We are provided with valuable insight into the national/international economic and political dynamics (e.g. foreign military and economic interests) that helped create and sustain the human misery in the Philippines. The issue of health and human rights is viewed within this broad context, thus shedding light on the appropriate course of action.

In conclusion, the book is recommendable reading as it makes an important contribution for all health professionals regardless of their political positions.

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Looking South

Armaments and the Third World Crisis
Edited by W.R. McClelland
Professions for World Disarmament and Development, 1 North End, London NW3 7HH, 1988, 62pp., £1.50.

The Fourth Annual (1987) Conference of Professions for World Disarmament and Development (PWDD), of which this is the proceedings, took place in London soon after the UN Conference on Disarmament and Development, which had stressed the importance for the future of the relationship between disarmament and development. Unfortunately, little notice was paid to the UN conference by the media, so it is particularly valuable that its Final Document is reprinted as an appendix in this booklet.

Charlotte Waterlow, who attended the UN conference, explains why a new approach is necessary. According to UN projections, world population, which is now 5 billion, will reach 10 billion by 2050. At that time 90% of the world population will be in the developing countries. It is certain that the world cannot continue the arms race and move towards sustainable development at the same time. For the rapidly increasing Third World population to be fed, even at present inadequate levels, large new resources will have to be found. This is dealt with in a paper on 'Resource Transfer from Defence to Health Care' by Sadaat Deger, an economist.

Health care professionals reading this booklet may well feel that just as available
medical services would be totally inadequate after a nuclear attack on Britain, so present trends in developing countries are leading towards comparable conditions. Several contributors emphasize that only as a result of disarmament could sufficient funds be provided to prevent further deterioration of Third World standards. Jim Howard, of Oxfam, describes the fate of refugees in many countries and contrasts the £10 000 million which is the cost of Trident with the miniscule aid provided by Britain. Sir Gordon Wolstenholme, founder of Action in International Medicine, shares his experiences in 'The Role of a Professional' and gives his hopes for the future. The booklet includes the contributions made by the conference participants in the discussions on the presentations.

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Blow the Wind Southerly
By Thomas Sherwood
Southerly, St Albans, 1988, 147pp.

Philip Edgehill, a London consultant physician, is drawn into the violent political situation in an African country during a brief teaching visit to a remote bush hospital. Along with a suitcase full of lavatory paper, 'worth more than gold these days' as an appreciative recipient comments, he also carries mysterious papers for a group of African doctors he has come to trust. His actions lead to a dilemma as to the role of a doctor and his true duties to patients suffering avoidable disease and facing death. A love affair with an African health worker who co-operates with her corrupt government in order to fulfil her own, perhaps more immediate, duties to the same patients, highlights this dilemma.

This romantic thriller dramatizes issues of medical ethics. Sometimes the narrative slows to accommodate discussion of these concerns, but generally they are well incorporated into the action, which leads to a tense climax.

The political, interdepartmental and personal tensions of a large London teaching hospital will be appreciated by medical readers, as will also the graphic revelations of health care in a poor and troubled developing country.

The author, Thomas Sherwood, who is a professor of radiology at the University of Cambridge, has presented in entertaining form issues of interest to his colleagues. Copies may be obtained without payment from: Southerly, 28 Sopwell Lane, St Albans, Herts AL1 1RR, UK; donations are invited to Intermediate Technology, Myson House, Railway Terrace, Rugby CV21 3HT. (Intermediate Technology is a charity set up in 1965 to put into practice Fritz Schumacher's ideas on support for self-help in the Third World, as described in Small is Beautiful.)

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Coping or not with disasters and emergencies

Medicine for Disasters
Edited by Peter Baskett and Robin Weller

A much needed book, but very ambitious to cover so wide a subject as disaster in its many aspects. It is well presented and gives a variety of professional views related to disasters. It should be readily available to service units and management in industry, but especially to those organizations likely to find themselves in disaster situations. The cost seems to be outside the pocket of individuals, but is not excessive for a reference library or an organization.

I hope the book will be updated fairly regularly and will become a standard reference. It is particularly useful as a disaster profile for selected developing countries, identifying the problems, opportunities and causes of calamities in disaster organization relating to medicine and disaster. It is remarkable in trying to cover the subject in 500 pages and certainly gives a multi-disciplinary approach. The bibliography is very good indeed and gives one immediate reference for further serious reading. The Specific Section on natural and man-made disasters is excellent, especially its chapter pertaining to the United Kingdom on road traffic accidents. Many chapters go into great detail, especially in the Immediate Phase Section, while others are less detailed. Triage is particularly emphasized in all disaster situations and the chapter on Assessment and Triage is excellent. Disasters, whether man-made or natural, do occur with distressing regularity, and the psychological responses to such situations are very well described. The environmental problems one can expect are well represented.

As the editors say in the Preface, appropriate management in any disaster situation must be taken swiftly and carried out efficiently. This includes nuclear accidents, but the chapter on this subject has had to be curtailed in a book of this breadth; however, nuclear, bacteriological and chemical disasters as accidents do occur, and have occurred from weapons in war and might be caused by terrorists, so expansion on this whole area would have been helpful. It is noted that only nuclear war 'has the potential for the obliteration of the human race'.

The various contributors and the editors have overcome many problems and have produced a book which should occupy a place in all medical libraries. It is neither a back-pack nor a book for the pocket, and while not covering the whole of the subject its bibliography is such that one can carry on from there.

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Cardiopulmonary Cerebral Resuscitation
By Peter Safar and Nicholas G. Bircher

Peter Safar, pioneer in resuscitation medicine, was joined by colleague Nicholas Bircher to prepare a much expanded third edition of this best-seller, which is published on behalf of the Committees on Cardiopulmonary Resuscitation of the World Federation of Societies of Anaesthesiologists and the European Academy of Anaesthesiology. The book remains a clear and detailed manual on basic life support suitable for instructors and for 'physicians of all disciplines and other health
professionals', but the new edition is also an introduction on advanced life support and prolonged life support for the specialist.

In a section on disaster resuscitology, the authors note that meaningful disaster medicine planning for nuclear war is impossible, and quote the resolutions on nuclear war of the World Association for Emergency and Disaster Medicine,¹ which support the recommendations of WHO and the International Red Cross. The final chapter is on 'Philosophical-Ethical Conclusions' concerning cardiopulmonary resuscitation and cardiopulmonary cerebral resuscitation.

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Reference