Mention equation' to 'Microaggregates' - nothing very exciting there. But between them we have 'Michelin tyre baby', 'Mickey Finn', 'Mickey Mouse appearance', 'Mickey Mouse ears', 'Mickey Mouse figures' (see 'Mariners wheel'), and '"Mickey Mouse" medicine' (a derogatory reference to non-patient-oriented duties that impact upon physicians' time). A few pages earlier we learn that 'Love canal' is not a pseudo-medical term used by tabloid newspapers but, in fact, a water channel near Niagara Falls, dug in 1892 by William Love and subsequently used as a dump for toxic waste. However, for readers who may consider that a little tedious, it is closely followed by 'Lover's heels' - a compartmented intracutaneous fragment of the os calcis with severe crush injury to the bone of the foot with major anatomic distortions, described in 'jilted' lovers who jump from major heights.

I think that my favourite entry of the several hundred that I've read so far is for the 'jumping Frenchmen of Maine' syndrome - a culture-specific complex that is evoked in the members of a religious sect paradoxically originating from Wales and residing in North America, the rites of which include jumping, rolling on the ground, barking like dogs and so on until a state of ecstasy is achieved!

How does one go about compiling such a dictionary and how does one check the accuracy of the entries? I don't know, but I decided to do an independent check by selecting 40 entries relevant to cancer biology and asking colleagues to give marks out of ten for accuracy and completeness. The mean mark was 6.7, which can't be bad. However, there are examples of major inaccuracies. The entry on 'MDR' claims, quite wrongly, that 'MDR gene expression is amplified in metotrexate resistance'. The entry on Tumor suppressor gene incorrectly includes NM23, ras and tyrosine kinase gene on chromosome 3 in the list. 'Doxorubicin' has two different entries, one out of alphabetical order, and probably meant to describe 'daunorubicin! The description of a "linear accelerator" states that it emits cobalt-60 irradiation. Clearly, therefore, each entry has not been rigorously checked by an expert in the field and consequently the reader should feel obliged to obtain an independent check of the precise details of the more technical terms. Hopefully such inaccuracies will be eliminated in future editions as they are unacceptable in a reference book. Nevertheless, the dictionary does an excellent job of 'pointing the reader in the right direction'.

This book can be strongly recommended for the shelves of anyone who considers him or herself to be involved in 'modern medicine'. Not only is it scientifically valuable, it provides an excellent way of spending the odd spare moment which can be both instructive and entertaining. I'm glad that I had the opportunity to review the volume and I'm glad that it now has a permanent place in the BJC editorial office.

P.R. Twentyman

Prospects for Antisense Nucleic Acid Therapy of Cancer and AIDS

Edited by E. Wickstrom, New York: Wiley-Liss, 1991, 269 pp. £56.00.

'Prospects for Antisense Nucleic Acid Therapy of Cancer and AIDS' is definitely a book for those who enjoy good science fiction. Some of the best storytellers of the antisense field have been brought together in a single volume to produce a work which is both entertaining and rich in fantasy. However, the title is to some extent misleading since a significant proportion of the book is concerned with dissecting gene function in cell culture using antisense approaches to ablate gene expression and to direct therapeutic action. Some of the chapters would be more appropriately placed within a treatise on oncogenes, in view of the fact that the rambling speculations are entirely concerned with the action of the particular oncoprotein and contain but passing reference to the antisense strategies purported to have produced the observed effects.

There are 17 chapters in all and topics covered include antisense RNA, oligodeoxynucleotides and oligodeoxynucleotide analogues, as applied against oncogenes and HIV, novel oligodeoxynucleotide derivatives, and basic principles of triple helix forming antisense oligodeoxynucleotides. In addition, some preliminary pharmacokinetic and toxicological data are presented. As regards antisense RNA, it would appear that the only therapeutic prospect for this approach is in the ex vivo generation of HIV-resistant haemopoietic cells for reinfusion into the patient. However, a very interesting chapter by Yokoyama on myc antisense RNA draws attention to a new mechanism, namely the induction of protein(s) which inhibit transcription, thereby raising the spectre that multi-gene related phenotypes might result from application of the antisense RNA technique if similar promoter elements in other genes were also to be affected by the factors induced. A majority of the antisense oligonucleotide chapters are concerned with the normal phosphodiester structure which has no therapeutic potential whatsoever, as a consequence of nuclease sensitivity and poor cell uptake characteristics. However, three chapters describe results with comparatively nuclease-resistant phosphorothioate oligodeoxynucleotide analogues and another chapter deals in detail with resistant methylphosphonates. In general, the classical antisense oligonucleotide experiment is described, where effects of antisense oligonucleotides on mRNA, protein, cell growth, or colony formation, in conjunction with negative sense or nonsense sequence controls, obviously prove that the antisense oligonucleotides must have entered the cells and hybridised specifically with the target mRNAs. The editor, in his own chapter, goes so far as to simply ignore the highly significant inhibition of c-myc p65 expression induced by his control, scrambled sequence oligodeoxynucleotide, while another chapter claims sequence-specific effects for short (8 and 11 base) ras antisense methylphosphonate oligodeoxynucleotide analogues, which, on the basis of statistical probability alone, would be expected to recognise a variety of different mRNAs.

Amazingly, the book contains minimal reference to the cellular pharmacology of the oligonucleotides themselves. However, where people have looked at what is happening to oligonucleotides in cells, extensive degradation of normal phosphodiester structures has been observed, and, in the case of fluorescently labelled polyamionos and oligonucleotides, the usual picture has been one of brilliantly glowing green fluorescence surrounding a nuclear black hole. On the other hand, Leserman et al., in their chapter, report that when membrane barriers are circumvented by direct intracytoplasmic microinjection, oligodeoxynucleotides are rapidly localised within the nucleus by avid binding to nuclear proteins. So it would appear that any antisense molecule lucky enough to escape the endosome before reaching the lysosomal execution chamber would only have a limited time on the loose to find its RNA home. Furthermore, how can the specificity of action against the target mRNA be guaranteed, when the opportunity exists for comparatively strong interaction with non-targeted nucleic acids through regions of substantial partial complementarity? These are some of the considerations of relevance to the therapeutic exploitation of antisense oligonucleotides which the book fails to address. The two chapters on triple helix forming antisense oligodeoxynucleotides are intriguing in terms of the basic science involved, although this approach offers little therapeutic prospect as yet.

Of course, there is nothing wrong with a little fantasy to stimulate research, but the worry is that failure of premature and ill-conceived clinical trials might jeopardise future realisation of the true potential of these powerful drugs. In terms of the latter, 'Prospects for Antisense Nucleic Acid Therapy of Cancer and AIDS' provides little enlightenment.

D.M. Tidd