

Book reviews

Nutrition in Early Life. J. B. Morgan and J. W. T. Dickerson (editors) Chichester: Wiley. 2003. Pp. 374. £34.95 paperback. ISBN 0471 496243

This textbook, dedicated to Professors McCance and Widdowson, comprehensively covers the interdependent effects of maternal and fetal physiology, nutrition and metabolism. The editors have drawn ‘considerable inspiration’ from the book *Developmental Nutrition* by Lucille Hurley, which was published in 1980 and is now out of print. Although an excellent and useful text at the time of publishing, it is now out of date. As the editors state in the preface to this book: ‘... the increase in knowledge and the recognition of the importance of developmental aspects of nutrition in the training of health professionals pointed to the need for an up-to-date and extended text incorporating the scientific aspects of the subject and their practical application’.

This readable and enjoyable book is intended to be a student textbook and would be useful for any undergraduate student, researcher or healthcare professional with an interest in maternal and fetal nutrition and health. It is primarily aimed at the UK market and contains twelve chapters covering the following topics: ‘Growth, development and the chemical composition of the body’, ‘Pre- and periconceptual nutrition’, ‘Maternal physiology and nutrition during reproduction’, ‘Physiological and nutritional aspects of the placenta’, ‘Lifestyle and maternal health interactions between mother and fetus’, ‘The fetus at birth: maternal and fetal preparations for postnatal development’, ‘Fetal, infant and childhood growth and adult health’, ‘Nutrition in infancy’, ‘Complementary feeding for the full-term infant’, ‘Nutrition of the low-birth-weight and very-low-birth-weight infant’, ‘Nutrition in childhood’ and finally ‘Practical advice on food and nutrition for the mother, infant and child’.

Each chapter begins with a useful list of ‘learning outcomes’ describing the information the author aims to convey to the reader and thus facilitating instruction or self-teaching. Although this is a difficult subject area to divide into discrete consecutive chapters, the editors and authors have evidently carefully considered the content of each of the sections, which are clear, concise and distinct from each other. The book contains no appendices and the useful reference charts and tables are contained within each chapter; however, the sections are clear and well labelled, making it easy to refer to the appropriate information. The chapters each contain an introduction and conclusion section and a selection of key references.

The editors and contributors, all of whom are distinguished scientists who are well published and respected in their fields, set themselves a difficult task in developing this text, which covers a vast, complicated and sometimes controversial subject area. Although many of the chapters

cover similar subject areas to other texts, this book has collated all of the various aspects of nutrition from a developmental point of view. The text includes the genetic, metabolic and environmental interactions that effect the development of the fetus through to maturity, and emphasises the importance of early nutrition on growth and development throughout life. As well as providing the scientific basis for nutrition in development, the book also addresses nutrition-related public health issues and provides practical guidelines for good nutritional practice.

As the primary aim was to provide a student textbook it would have been impossible to fully review the literature and include all of the important references in each chapter. However, the book provides a generally well-balanced overview of each subject area and a sound base from which the reader may explore the literature further if they wish.

In conclusion, the editors and authors should be commended for producing the comprehensive, yet appropriately pitched, textbook that they had set out to provide, and which will prove to be useful to many.

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Animal Biotechnology: Science-Based Concerns. Committee on Defining Science-based Concerns Associated with Products of Animal Biotechnology. 1st ed. Washington, DC: The National Academies Press. 2002. Pp. 181. £24.95 paperback. ISBN 0 309 08439 3

I am not generally well disposed towards books written by committee. There is a tendency to level down rather than up, and to use complex language where simple statements would be more effective. Reading the Executive Summary of this book did little to dispel my concerns, which were further amplified by the printer’s choice of a serif font in a point size that challenged my vision, glasses notwithstanding. However, to my considerable pleasure and relief, the main body of the book provided a concise, well ordered and, insofar as a plant scientist can judge, comprehensive introduction to the scientific concerns associated with likely developments in animal biotechnology. The authors are a group of twelve experienced scientists and policy-makers who were also able to draw on the views of a wide range of national and international

practitioners through a workshop and a draft review process. I was particularly pleased that they explored fully the need to balance concerns against potential benefits, an approach that is not, unfortunately, central to the European regulatory system. Furthermore, they addressed science-based concerns about current and future research, rather than the elements of animal biotechnology that excite public debate. As a result of this, the book will serve as a valuable summary of the relevant science that should help considerably to inform the debate about how it should be applied and regulated.

The subject is introduced in the first two chapters that summarise the approach of the committee, the current position of animal science as it pertains to medicine, food production and animal welfare and the nature of the technologies that, in concert, make up 21st-century animal biotechnology. Whilst these chapters are both necessary and well presented, I regret that there is no great sense of the huge impact that these scientific and technological advances have had on biological research. It is important to emphasise to policy-makers that research biotechnology carried out under contained conditions is here to stay, regardless of the current issues involved in commercial release, and that this technology will underpin an increasingly wide range of research whose exploitation need not involve genetic engineering.

The next four chapters make up the core of the book and address specific concerns relating to animals modified for human health purposes, issues of food safety, environmental concerns and worries about animal health and welfare. I found these well balanced and clearly written, with enough background information provided to enable a non-specialist to appreciate the issues involved. There is no particular commonality of approach and organisation within these chapters, but I did not find this intrusive, and it is easy enough to use the contents list and the index to move quickly to any desired section. I was unable to spot any significant omissions, and the authors are to be commended for their willingness to highlight areas of current scientific uncertainty. The authors have tried to deal with all the salient issues, and thus there are passages that have a somewhat depressed feel, as one potential problem follows another, but throughout there is a feeling of balance and objectivity. One gets a strong feeling in these chapters that the concerns are, as with genetically modified (GM) plants, highly case-specific. GM insects inevitably pose different containment challenges from GM ruminant animals, and will have a different impact on the human food chain. I found the chapter on animal welfare issues particularly interesting as it exemplified the problems of establishing a baseline against which GM issues could be judged, and raised some interesting ideas concerning the potential for improving animal welfare via both disease resistance and gender selection. Failure to achieve the latter currently results in

the large-scale slaughter of male chickens and the castration of male pigs, sheep and cattle.

The final chapter deals with the overarching issues of scientific uncertainty, public policy, the institutional basis of policy implementation and the generic ethical background to the topic. It is short, and the prose is dense, but I thought that this was an extremely impressive attempt to provide a broad context to the book. It identifies a number of problems that militate against an effective consideration of the research opportunities and implications of this novel technology. There is still significant scientific uncertainty, policy discussions lack cohesion, the regulatory system is highly fragmented, public knowledge of the current food chain is rudimentary and the ethical debate is polarised between utilitarianism and rights-based approaches. One is left feeling grateful that Jenner did not have to engage in this exercise prior to introducing vaccination, but even more grateful to the authors for their clarity and perseverance in summarising these issues.

It is traditional in book reviews to finish with a few platitudes about readership and future development of the book. I am sufficiently pessimistic about the current nature of the GM debate to be convinced that most of the people who should read this book won't, and sufficiently optimistic about the science to predict that a completely new book will be needed within 10 years. However, if the authors were contemplating any additional activity, I would strongly urge them to work with a professional science communicator to produce a short non-specialist account, along the lines of the excellent *Butterflies and BT Corn* brochure published in the USA last year. This would summarise the group's findings and build on the excellence of the final chapter to develop a context that is accessible to the non-specialist. I would then send this to every relevant politician, journalist, non-governmental organisation and policy officer in the USA and beyond in the hope that the standard of the current debate would rise. More importantly, it could also help to develop a 21st-century context for considering how to introduce new technologies in a manner that accepts the coexistence of risks and benefits and the need to balance them across society.

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