

Book reviews

Why Animal Experimentation Matters: The Use of Animals in Medical Research. E. F. Paul and J. Paul. Transaction Publishers, New Brunswick, USA. 2001. Pp. 224. Price \$49.95, hardback. ISBN 0-7658-0025-X

This thought-provoking book comes out of the Social Philosophy and Policy Foundation, an independent corporation established to promote advanced research in political philosophy and in philosophical analysis of public policy questions. The use of animals for medical research is being threatened by animal rights activists who propose severe restrictions or abolition of experimental work.

In their essays, the eleven American authors challenge many flawed perceptions promoted by animal rights groups. These include misrepresentation of historical facts, and the contributions to human and animal health, by the use of experimental animals. Fortunately, activists efforts so far have not slowed down progress of biomedical and pharmacological research. In much of the world with epidemiological and nutritional challenges any animal activist agenda to shut down or hinder animal research is, as one author comments “fanatical, even suicidal”. Several authors go further and argue that to deny much of the world’s population hope for vaccines and other medical cures is inhumanity towards humans.

Some animal rights groups concede that applied research is justifiable but that basic research should be prohibited. As the author of one essay points out, this view jeopardises both the advancement of knowledge and the remediation of human disease.

The question is raised of how human and animal interests can be balanced. The European view gives greater significance to animal interests than the American approach. However, both are closer to the human-priority view than either the UK or German statutes, which are more towards equality in human and animal interests.

Several authors argue from the evolutionary perspective in defending animal experimentation. They suggest that to disallow the acquisition of medical and agricultural knowledge would be a maladaptive strategy, that may endanger human survival. The philosophical bases of the animal rights groups are discussed and the reader is required to carefully follow often unfamiliar arguments. However the end result is well worthwhile.

At the end of the book’s introduction the hope is expressed that, ‘these essays will advance public debate on this vital issue.’ It is hard to imagine that the general public will read such a book, but hopefully the scientists and students who carry out animal based research will use the arguments when explaining and justifying their research.

There is a useful index and I found the endnotes for each chapter interesting. I would have liked an alphabetical list of literature references at the end of the book.

It becomes evident after reading this book that animal rights movements are only sustainable in affluent societies. It is the responsibility of these societies to work towards the alleviation of diseases, which much of the world suffers. This book should be welcomed by the research communities in all countries where animal based research is conducted.

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The Biochemistry of Cell Signalling. E. J. M. Helmreich. Oxford University Press, New York. 2001. Pp. 328. £29.95, paperback. ISBN 0-19-850820-4

New text with Onion Tart (Neuer Text mit Zwiebelkuchen)

A German friend once remarked that the English admire foreign language quotations but habitually get them wrong. Ernst Helmreich has no problem with one of Goethe’s maxims, with which he prefaces his new book, but his awkward translation (with misspelling) does glare rather ironically from the page.

This pocketbook text provides a compact overview of cell signalling, aiming to fill a niche between full-blown textbook and review monograph. It is a huge subject and this book is certainly packed with information, but given the space limitations, compromises have had to be made. The main text is subdivided somewhat arbitrarily into four sections. The first and longest, entitled the machinery of signal transduction, appears set to describe the various molecules involved in signal generation, reception and intracellular transduction. The opening comparison of receptor families is, however, bisected by a discussion of growth factor processing and membrane shedding, while resorting to forward references for cytokine and G protein-coupled receptors. The subsequent brief chapter on receptor oligomerisation again belies a lack of didactic structure. And so one is led from adaptors to small G proteins, cascading down MAP kinase pathways and gliding over lipid signals with just a sideways glance at cytoskeletal assembly in two short chapters. Only then does the frenetic style relax with more balanced chapters on heteromeric G proteins and pathways controlling morphogenesis and haematopoiesis. Overall, the section covers the basic material and includes some good illustrative detail, but in accessing it I found myself flicking back and forth with fingers between pages and distracted by the inconsistent style. However, omissions need to be remedied, including MAPKAP and ribosomal S6 kinases, the paracrine-mediated transactivation of receptor tyrosine kinases by G protein-coupled receptors and lipid-mediated cell survival signals.

The other three sections present case studies of signalling in action, looking at gene transcription, regulation of the cell cycle, cell death, the immune response and cancer. Here again, Helmreich courts the danger of being superficial, which is certainly true for the chapter on transcription, and repetitive, for example with STAT proteins and SMADs being discussed in chapters six and ten.

The text is supplemented in six ways. The list of contents and index are both succinct and would benefit from improvement. By way of amends, there is a long list of abbreviations and a glossary, both of which will prove useful. Curiously, the latter includes numerous word fusions, such as celldivision and expressionvector, at which even my word processor balks. Each chapter ends with a list of citations, some with more than a hundred entries, which strikes me as excessive, especially as some only acknowledge material sources. Perhaps a rating scheme could be adopted to single out recommended further reading. Finally, there is a section of glossy plates in the middle of the book showing protein structures, which add some colour and contrast to the grey scale structures and numerous diagrams included throughout. However, whereas the diagrams succeed in illustrating function, the structures are static and less effective.

The book is conceived as a supplementary text for graduate students and postdoctoral scientists, which is reflected in its format. The obvious difficulty has been condensing the subject accordingly. Helmreich has made a good effort in what is presumably his second language but more support from the publisher with language and structure should have been forthcoming. As this is a rapidly moving field, improvements could be wrought into an early second edition.

In autumn, people in Germany drink “new wine”, customarily accompanied with slices of onion tart. Nobody would contend that it can compete with vintage wines, but it has its merits, it is widely appreciated and can be recommended nonetheless.

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Katydid and Bush-Crickets. D. T. Gwynne. Cornell University Press, New York. 2001. Pp. 317. Price \$42.50, hardback. ISBN 0-8014-3655-9

The Tettigoniidae are an ancient and culturally important taxon, so much so that they received geographically distinct names before science cast its beady eye on them (hence the duplication in the title). This book is sub-titled “The reproductive behaviour and evolution of the Tettigoniidae” and is largely a contextualised review of Gwynne’s fascination with, and substantial contribution to, the reproductive behavioural ecology of tettigoniids over the last quarter of a century. The book begins by covering key aspects of the background

biology of the taxon and then moves into a review of the landmark behavioural ecology. I picked up the book with the expectation of being driven fairly directly to the destination promised in the sub-title and, on the way, shown some important, possibly even spectacular, vistas. The journey was largely informative and enjoyable and I did glimpse some grand biology. However, to my mind, the guide spent a little too much time regaling me with historical perspectives and personal stories which detracted from the scenery and my enjoyment of the trip. I probably have a reputation as a miserable passenger, and I am sure many travellers down this route will enjoy the commentary that I found distracting.

The first chapter is a temporal anchor (the book has a strong chronological sub-theme with respect to the author’s work) detailing the intriguing behaviour and ecology of the Mormon cricket – the organism that piqued the younger Gwynne’s curiosity and set him on the research path that culminated in this book. The style, at this point is very relaxed, almost chatty, and it works by drawing the non-specialist into the system. The book then transits into the important question of phylogeny: it does so rather abruptly, and, I confess, I did not enjoy the prose about the phylogenetic relationships. Some well-conceived diagrams in an appendix would have conveyed this information and illustrated the points for me. However, I am no orthopterist (or phylogeneticist) and I am sure a reader with both, or either, orientation will relish the detail. The book’s next two chapters aim to cover important behavioural ecological ground for later, and deal with habits, life-cycles, natural enemies and ecology. It is these first scene-setting chapters, consisting of mixed writing styles, that give the impression that the book isn’t going directly to an interesting destination. This impression detracted from the utility of these chapters and was actually wrong: as Gwynne gets onto his home turf I began to feel I was going somewhere. This second phase deals with the costs and benefits of singing and mate attraction, nuptial gifts, and courtship-role reversal and the writing becomes much more sharply focussed and readable: this part of the book is very good. The text is supported throughout by one of Gwynne’s trademarks — stunning photographs that concentrate the essence of the biology they are illustrating. Several of these are produced as a collection of 24 small colour plates.

Like many journeys, my recollections got fonder as time passed and I found myself reminiscing over the good bits. There were certainly enough to make the trip memorable and worthwhile.

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The Basis for Gene Therapy. W. J. Burdette. Charles C. Thomas Publisher Ltd., USA. 2001 Pp.204. Price \$33.95, paperback. ISBN 0-398-07159-4

Gene therapy is an emotive subject for scientists, clinicians and the general public. There has been a recent explosion in