

Book reviews

Principles of development (fourth edition), edited by Lewis Wolpert and Cheryll Tickle (Oxford University Press, Oxford, 2011), 616 pp., £36.99 (pbk), ISBN: 978-0-19-954907

Reviewed by Kevin Coward, Institute of Reproductive Sciences, Nuffield Department of Obstetrics & Gynaecology, Oxford, UK

Developmental biology continues to represent a core biological discipline consistently able to draw interest from students and researchers across the globe. The ability of a single fertilised egg to give rise to a complex multicellular organism never fails to captivate new audiences and this book serves to provide an up-to-date thesis of the main principles and concepts involved. *Principles of development* represents another superb offering from the acclaimed developmental biologist Lewis Wolpert. In this fourth edition, Wolpert is joined by Cheryll Tickle, Foulerton Research Professor of the Royal Society, and assisted by five co-authors whose collective expertise spans the entire field. This is a truly admirable contribution to the field which is superbly illustrated and highly detailed. The fourth edition of this popular text arrives with a number of new features: carefully selected suggestions for further reading, an online journal club and resource centre, the very latest photographic images, increased content and coverage of evolutionary developmental biology, and end-of-chapter questions in both essay and multiple choice formats. Content is divided into 14 chapters which

systematically guide the reader through history and basic contents, the drosophila body plan, various aspects of vertebrate development, the development of nematodes, sea urchins and ascidians, plant development, morphogenesis, germ cells/fertilisation and sex, cell differentiation and stem cells, organogenesis, the development of the nervous system, growth and post-embryonic development, regeneration, and finally evolution and development. The book ends with a welcome glossary to assist the reader through the complex vocabulary associated with this complicated discipline. Of particular note are the number and quality of colour illustrations, which are both striking and captivating. Clearly targeted at an undergraduate audience, this text also represents a key resource for postgraduate students, scientists, and teachers. *Principles of development* should sit proudly on the bookshelf of anyone involved in the study of developmental biology, and should readily serve to captivate the thoughts and imagination of future generations of developmental biologists.

© 2011, Kevin Coward

<http://dx.doi.org/10.1080/00219266.2011.592542>

Experimental models in serotonin transporter research, edited by A.V. Kalueff and J.L. LaPorte (Cambridge University Press, New York, 2010), 352 pp., £65(pbk), ISBN: 978-0-521-51487-3

Reviewed by Pamela J. Speed

The serotonin transporter (SERT) is a key brain protein modulating the reuptake of the neurotransmitter serotonin (5-HT) from the presynaptic space into the

presynaptic neuron. Regulation of this system is linked with issues as varied as depression and anxiety states, schizophrenia, autism, blood pressure, attach-

ment styles and social skills, early embryonic organ development and apoptosis, cognitive decision-making, addictive behaviour and obesity. Animal models – particularly mice, rats and monkeys – are useful in researching the mechanisms and pathological conditions of the SERT system. Writers in this book both remind us of the similarities between human beings and other sentient animals, and caution against the risk of assuming transferability of findings from animal models to human neuroscience. Whilst mouse models closely reflect human models of depression in many respects, on the other hand, even such closely related organisms as different species of rhesus macaque monkeys can show marked differences from one another in SERT-related behaviour.

The Gene \times Environment theme runs strongly throughout this book. Development of genetically manipulated rodents, including SERT-deficient mice, has allowed considerable insight into the interaction between the environment and the individual's genetic endowment. Human genetic differences in SERT-related alleles are helping to explain why damaging early environmental experience affects some individuals so much more than others, and opens up a whole field of individualised therapeutic intervention.

Kalueff and LaPorte have presented to the reader what is, effectively, 11 individual literature reviews looking from various perspectives at findings in the field of serotonin transporter research, with discussion on their implications. Each chapter (review) has its own referencing list, and this leads to duplication, but it does allow the researcher to access and use individual chapters.

This book would, I think, be essential reading and reference material for any researcher working on neuroscience in the fields of medicine, psychology, pharmacology and developmental biology, particularly where animal models are being used to further understanding of human brain development and disorders. The academic level will generally restrict its use to post-graduate researchers or undergraduates undertaking a focused study of the role of serotonin. However, there is now wide interest in the implications of serotonin reuptake disturbance; non-specialists interested in this field, and willing to grapple with some academically challenging reading, will find material to both furnish increased understanding of the background to current research and stimulate them to further reading.

Email: pamela.speed@btinternet.com

© 2011, P. J. Speed

<http://dx.doi.org/10.1080/00219266.2011.592851>

Darwin, edited by William Brown and Andrew C. Fabian (Cambridge University Press, Cambridge, 2010), 210 pp., £12.99 (pbk), ISBN: 978-0-521-13195-7

Reviewed by Peter Anderson, Ampleforth College, York, UK

This is an interesting and diverse collection of essays developed from a series of lectures at Cambridge University and seeks to explore the legacy of Darwin today as well as the nature of Darwinism. The contributors include Janet Browne (author of an excellent and highly recommended two-volume biography of Darwin) and Steve Jones, who will be well known to all biology teachers.

The purpose of the essays is to investigate the legacy of Darwin's work on modern thought in science, the arts and society. Eight essays in 200 pages or so means that the pieces are concise enough to be accessible to most A-level biology students and the writing is always clear and readable, although the subject matter will be quite challenging to many students.

The first three essays in the book look at the broader picture, beginning with Browne's essay which looks at the changing interpretations of the

man himself from archetypal biologist to supreme networker. The subsequent essays move from the incessant letter-writing that allowed Darwin to gather and focus a variety of emerging theories of evolution, through a discussion of how his writings influenced literary fiction.

The remaining five essays will perhaps appeal more directly to biology students. A fascinating essay looks at the importance of cooperation (as compared to the obvious competition) to Darwin and how this has shaped our understanding of human society and the development of institutions and cultures. Able biology students will really enjoy Steve Jones' essay that seeks to answer the perennial question from students: 'Are humans still evolving?' His conclusion? We are probably as good as we are going to get! The closing essay concludes that we have profoundly altered the way we think about evolution since the