In addition to the excellent prose, a great strength of *Developmental Biology* is its figures. Almost every figure combines cartoon representations with actual photographs (including electron micrographs and bright-field and fluorescent images). This presentation style greatly improves the book's comprehensibility. For instance, such figures enable students to locate tissues of interest in the context of a whole embryo. The multiple image types also provide clarity of function coupled with real-life depictions of form.

Developmental Biology is less appropriate, however, for an introductory undergraduate class. Far too many details are given, and every discrepancy is pointed out. Frighteningly complex diagrams that would make the staunchest undergraduate blanch accompany the text. Further, some terms new to students (such as fluorescein-conjugated dextran) are left unexplained. No description is given of plant development. Thus, although the 9th edition of *Developmental Biology* makes an ideal resource for scientists, it should not be mistaken for an introductory primer.

The 9th edition also boasts several additional study tools. A glossary is included in the back, and terms are presented in bold font in the main text. Further, a summary of the material presented, called a "Snapshot," appears at the end of every chapter. Yet while these Snapshots are too verbose to make a good outline for study purposes, they also lack the detail and definitions needed to provide a shortcut for students opposed to reading the entire chapter. An additional feature is the frequent inclusion of "Sidelights & Speculations" insets that discuss current research and novel experimental methods. But again, the motivation behind this element is more laudable than the end result. Many of these summaries read more like academic reviews than an undergraduate textbook, often making the content dry and overly technical.

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Experimental Models in Serotonin Transporter Research. *Edited by Allan V. Kalueff and Justin L. LaPort. Cambridge, MA: Cambridge University Press; 2010. 380 pp. US $110.00 Hardcover. ISBN: 978-0521514873.*

Serotonin is a neurotransmitter involved in emotional regulation and nervous system development. The most commonly prescribed antidepressants are the selective serotonin reuptake inhibitors (SSRIs) that target the serotonin transporter (SERT). In human populations, the SERT gene has a promoter region polymorphism that controls SERT expression level. The short allele is associated with lower SERT level, anxiety-like traits, and depression, making this gene of great interest in behavioral neurogenetics. In *Experimental Models in Serotonin Transporter Research*, a team of experts from diverse backgrounds critically review the most recent research on SERT and its clinical relevance.

The first two chapters are a useful review of the current efforts to understand the cellular and molecular mechanisms underlying SERT phenotypes in rodents. Unfortunately, a range of dosages, delivery methods, and different durations and timings of treatment frequently generate conflicting results. Constitutive and chronic disruption of SERT is contrasted with perturbations administered in adulthood. Chapter 3 specifically addresses the developmental, or "structural," role of serotonin and SERT, which is a fascinating field in itself and provides critical background for interpreting chronic perturbations to the serotonin system.

The subsequent chapters review the use of SERT mutant rodents to model depression and anxiety. Rodents are invaluable for understanding the interplay between genetics, environment, and behavior as they can be genetically manipulated and studied in a controlled environment. SERT knockout and knockdown mice have been studied extensively using a variety of behavioral testing paradigms and biological markers thought to correspond to human symptoms. Two approaches to modeling serotonin function in rats are presented: a SERT knockout line and

lines selectively bred for high and low platelet serotonin levels. Curiously, both groups of rats differ noticeably from their wild-type counterparts only when confronted with an environmental or pharmacological challenge. The book then goes on to describe the interaction between the serotonin system and other neurotransmitters, particularly dopamine, in models of drug reward.

Primates, like humans, have complex social lives yet can be reared under controlled conditions and subjected to behavioral experiments. Simian primates possess a promoter polymorphism similar to humans and also show comparable behavioral traits. Chapters 10 and 11 are a fascinating discussion of the serotonin system in human and primate social behavior. The interaction between genes and the environment emerges as a central theme in neural development with alleles conferring differential sensitivity to adverse life experiences. Importantly, variation in SERT expression could predispose individuals to psychiatric disorders and, more generally, contribute to inter-individual personality differences.

This volume will be of greatest interest to specialists, both basic scientists and clinicians, but the relevance of the serotonin system to various aspects of human behavior may make it a useful reference for curious outsiders. In such complex fields where a great diversity of models and experimental methods are used, a collection of expert reviews should be of great value in making sense of the complicated and sometimes conflicting results.

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Life from an RNA World. *By Michael Yarus. Cambridge, MA: Harvard University Press, 2010. 194 pp. US $24.95 Hardcover. ISBN: 978-0674050754.*

DNA may get most of the press, but in *Life from an RNA World*, Michael Yarus wants us to develop an appreciation for RNA. Yarus begins by introducing Darwin's theory of natural selection while countering some of its more frequent critiques (i.e., the complexity of life cannot be adequately explained by natural selection). Importantly, he emphasizes that any mutation that does not adversely affect an organism's fitness will not be selected against – this includes both overtly advantageous mutations as well as those that do not change anything. In this way, Yarus effectively lays the necessary groundwork for the relevance of the term "RNA world."

According to the RNA world hypothesis, RNA, rather than DNA, may be the primordial ancestor of all life due to its abilities to both store genetic information and function enzymatically. Yarus strongly advocates genetics research, explaining how our increased understanding of the genome has reshaped our knowledge of who our closest relatives are (for example, the RNA sequences of humans are more similar to those of butterflies than to those of other insects). Importantly, he provides a rationale for why RNA changes (in addition to DNA changes) should be tracked. Unfortunately, he does not sufficiently explain what RNA is or why it is important biologically until Chapter 9 (entitled "A Thumbnail Sketch of Molecular Biology"). Here, Yarus truly explains the importance of RNA relative to DNA as well as the functions of RNA. He finishes by laying out the necessary properties for the RNA world hypothesis to be correct and then discussing research (including experiments from his own lab) that may help verify these properties.

Yarus writes in an approachable, humorous style, and while the book is a bit disjointed, he makes a good case for the RNA world hypothesis while also getting the reader to think more carefully about evolution and natural selection. The text is very readable and is aimed at individuals who love science and are fairly familiar with the associated terminology. The short chapters are not cluttered with citations, but Yarus does include a list of a few recommended additional readings at the end of each chapter should readers care to delve into a topic more deeply. Additionally, Yarus provides a helpful glossary of terms at the end of the