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ANIMAL PHYSIOLOGY. *Third Edition.*

By Richard W. Hill, Gordon A. Wyse, and Margaret Anderson. Sunderland (Massachusetts): Sinauer Associates. \$139.95. xxix + 800 p. + A-1 - A-23; G-1 - G-31; P-1 - P-2; F-1 - F-9; R-1 - R-31; I-1 - I-47; ill.; index. ISBN: 978-0-87893-559-8. 2012.

THE RETINA: AN APPROACHABLE PART OF THE BRAIN. *Revised Edition.*

By John E. Dowling. Belknap Press. Cambridge (Massachusetts): Harvard University Press. \$95.00. xvii + 355 p. + 12 pl.; ill.; index. ISBN: 978-0-674-06154-5. 2012.

The retina is an integral and readily accessible part of the central nervous system. For well over a century, retinal experiments have helped to elucidate fundamental mechanisms of brain function. John Dowling, a pioneer in retinal physiology and anatomy, has now published *The Retina: An Approachable Part of the Brain*, an overview of retinal science that summarizes many of these studies. The book is a revision of Dowling's *The Retina*, published 25 years ago. The revised edition has been extensively rewritten and contains new chapters on color vision and retinal degeneration and genetics. New sections on retinal development and visual pigment biochemistry are also included. This volume is a superb overview of the anatomy and physiology of the vertebrate retina. It is well suited for graduate students and postdoctoral researchers engaged in vision research as well as nonspecialists who desire an introduction to this fascinating part of the central nervous system. It would serve well as a textbook for upper-level courses on the retina. However, as the author acknowledges, a volume of modest size written for a general audience cannot, and does not, include all of the latest experimental findings concerning retinal physiology and anatomy. Rather, *The Retina* presents a comprehensive summary of the major findings leading to our current understanding of the retina. Basic concepts of visual science are presented with clarity. New and exciting findings, including the discovery of intrinsically photosensitive retinal ganglion cells, are included.

A great strength of the book is that many topics are introduced and discussed from a historical perspective. Dowling, who has worked in the field for over 50 years, is ideally suited to this task and presents many fascinating insights from early researchers. One instructive story concerns C. E. Bloch, who made the seemingly paradoxical discovery that the incidence of night blindness among the Danish population decreased during World War I. Bloch correctly reasoned that the German blockade of Denmark led to the increased consumption

of foods rich in vitamin A, demonstrating the importance of the vitamin in vision. Dowling's newly revised *The Retina* is highly recommended for both students of vision and for novices.

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MICROBIOLOGY

ANTIMICROBIAL RESISTANCE IN THE ENVIRONMENT.

Edited by Patricia L. Keen and Mark H. M. M. Montforts. Hoboken (New Jersey): Wiley. \$129.95. xviii + 602 p. + 8 pl.; ill.; index. ISBN: 978-0-470-90542-5. 2012.

The biological, evolutionary, and clinical relevance of environmental reservoirs of antibiotic resistance are featured in this book, *Antimicrobial Resistance in the Environment*. It is a timely compilation of both opinions and primary research by experts in the field, including 28 original articles broken into the following four parts: Sources; Fate; Antimicrobial Substances and Resistance; and Effects and Risks. The editors have achieved a unique synthesis of the many facets of environmental resistance, from the role of resistance in soil microorganisms to the difficulties of resistance risk assessment and management in various environments. At times, the chapters flow in a nearly continuous narrative that is both engaging and realistic without being overstated or alarmist. The material occasionally overlaps between the chapters and sections, but this promotes the integration of concepts that are often discussed separately and would lend to the use of this book in a formal educational setting. Additionally, the volume presents a nice balance between generally accepted concepts and areas that are ripe for further research. For example, wastewater is discussed both as a known reservoir of antibiotic resistance genes and as a potential environment to target with mitigation strategies.

This book will be an ideal read for anyone seeking a comprehensive introduction to the many reservoirs and routes a resistance gene may pass through before or after its appearance in a clinical setting. Even experts in the field stand to gain knowledge regarding the complex web that is the issue of antibiotic resistance in the environment.

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