

well as synthesis chapters on life history, feeding, and locomotion. Importantly, this volume incorporates a large amount of new data on perinatal anatomy from multiple platyrrhine, tarsier, and strepsirrhine species. This includes both new microcomputed tomography (micro-CT) scans, histological data and, in some cases, matched data from the same individual. Finally, the book is capped off with a beautifully illustrated 44-plate micro-CT atlas of six species (*Callicebus*, *Cebuella*, *Saguinus*, *Tarsius*, *Galago*, and *Lemur*).

This book begins with introductory methods (Chapter 1), a condensed review of mechanisms of growth of body tissue (Chapter 2), and a short overview of ontogeny (Chapter 3). The real gems of this volume are Chapters 4–8, which contain detailed comparative descriptions of perinatal primate anatomy. Each chapter follows the same general format, an overview followed by a clade-by-clade comparative description of newborn anatomy. The descriptions are comprehensive, and based on the best available evidence. Typically for hominoids and cercopithecoids, this is largely based on published data, but for all other primates it is heavily based on new observations and data collected by the authors. These chapters are formulaic in organization, which makes the information easily accessible and a great reference resource for readers. Chapter 9–11 are synthetic and highlight newborn anatomy and ontogeny in the light of life history (Chapter 9), feeding functional morphology (Chapter 10), and locomotion (Chapter 11). These chapters draw largely on previous studies, but also incorporate some of the new data presented in the book.

This extensive survey of newborn anatomy, including the new descriptions of rare specimens is a welcome addition to the literature and fills a crucial knowledge gap. It is a perfect supplement to other classical works describing adult primate anatomy and dentition. Chapter 2 is also a great introduction (or refresher) on basic mechanisms of skeletal and cartilaginous growth, which I will likely find myself recommending to students. Overall, this volume will be highly useful for anyone interested in primate growth and development, and is a great reference for any primate anatomist.

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INVERTEBRATE EMBRYOLOGY AND REPRODUCTION.

By Fatma El-Bawab. Academic Press. Amsterdam (The Netherlands) and New York: Elsevier. \$140.25 (paper). xiii + 918 p.; ill.; index. ISBN: 978-0-12-814114-4. 2020.

Embryology is a discipline of timeless relevance, at the heart of developmental biology since its inception but just as significant for the much younger field

of evolutionary developmental biology (evo-devo), and its most recent descendant—ecological and evolutionary developmental biology (eco-evo-devo). The embryonic development of invertebrates is of particular interest because of the extraordinary fraction of animal diversity represented by invertebrate phyla, a few representatives of which have been studied in exquisite detail, while the vast majority remain poorly characterized. El-Bawab's *Invertebrate Embryology and Reproduction*, weighing in at an impressive 2.4 kilograms, with nearly 1000 pages, and likely just as many figures (most of which appear reproduced from original publications) thus aims at a critical void.

According to the preface, this book was written to accompany and support the author's teaching of embryology at Alexandria University, Egypt, with a focus on taxa represented in the Mediterranean. The volume begins with a brief history of embryology and its main contributors over the centuries, followed by an introductory chapter that explains basic terms and events that generally characterize fertilization and early embryogenesis. Following that are 11 chapters devoted essentially to specific phyla, from protists and ctenophores to molluscs and tunicates, and a fair amount in between.

Each chapter highlights important aspects of the embryogenesis and sometimes reproductive biology of specific representatives. These are interesting to read, and the style and prose are clear most of the time. However, just as important is what is missing: most chapters are incomplete listings of biological details organized roughly taxonomically, rather than thorough treatments of each group. Major phyla are missing entirely (such as the echinoderms, annelids, and sipunculans) or largely (such as the arthropods, which are strangely void of insects, myriapods, and chelicerates). Yet what is perhaps the most significant absence is the lack of any overarching developmental, ecological, or evolutionary framework within which to position, interpret, and analyze the diversity of invertebrate embryonic development. As such, *Invertebrate Embryology and Reproduction* is more of an incomplete reference catalog, rather than a comprehensive treatment of invertebrate embryogenesis. It will probably have its greatest value in libraries as a possible reference and stepping stone toward primary literature that may perhaps otherwise be harder to find.

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