



Review: [Untitled]

Reviewed Work(s):

Comparative Vertebrate Reproduction by Julian Lombardi
Martin Daly

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reproduced on page 64. If one believes, as many do, that there are fundamental ontological differences between species and more inclusive groups, then Mishler and Donoghue's concept must be rejected. It is then a matter of choosing a concept that fits your needs along the operational-conceptual continuum. Discovery of Nixon and Wheeler's phylogenetic species relies so heavily on the concept of population that it simply forces many of the critical operational issues to a lower level. The project was initiated and contributors assembled in 1993, but the major issues have not changed much since then, and no dramatically new conceptions of species have emerged in the phylogenetic literature since. It is clear from the phylogeographic literature, however, that cladistic hierarchy is empirically recoverable below the level of "species" in many cases. I am sure that the most confusing aspect of recent species concept literature is the presence of two quite different flavors of concept called "Phylogenetic Species Concept." This book provides a forum for these concepts to be compared in detail.

DAVID YEATES, *Division of Entomology, CSIRO, Canberra, Australia*



REPRODUCTION & DEVELOPMENT

COMPARATIVE VERTEBRATE REPRODUCTION.

By Julian Lombardi. Boston (Massachusetts): Kluwer Academic Publishers. \$229.95. xiii + 469 p; ill.; index. ISBN: 0-7923-8336-2. 1998.

This monograph reviews information on vertebrate reproduction from all classes, and at every level. There are 13 chapters, covering everything from introductions to natural selection and vertebrate taxonomy through sex determination and sex allocation, gametogenesis, reproductive endocrinology, embryology, and modes of parental provisioning and care of young to life histories, mating systems, and ecology.

Unsurprisingly, the author's ambition exceeds his grasp. Many of the topics are handled well, but others are treated too cursorily, and a few are molested. Most of the over 100 illustrations are well designed and drawn, and many are enlightening, especially those multipanel figures that highlight contrasts among vertebrate classes; others apparently exist, however, only to include something on otherwise neglected taxa. There is a useful 29-page index, but much of the book's heavy load of jargon is missing, and a glossary would help. Comparative anatomy, histology, physiology, and development are apparently treated expertly, but when discussion ventures into ecology and evolution, it often falters. Elementary concepts (sexual selection, op-

erational sex ratio) are misdefined, and casual asides (e.g., that a female with a conspecific male attached to her as a trophic parasite is "in effect . . . a hermaphrodite," p 26) are sometimes misguided. References are often inappropriate and sometimes nonexistent. The upshot is that although the book contains a great deal of information, it will frustrate those who use it as a reference work. Can it serve as a course textbook? Lombardi thinks so, but few instructors would find it appropriate even if reasonably priced.

MARTIN DALY, *Psychology, McMaster University, Hamilton, Ontario, Canada*

EARLY DEVELOPMENT OF *XENOPUS LAEVIS*: A LABORATORY MANUAL.

By Hazel L. Sive, Robert M. Grainger, and Richard M. Harland. Cold Spring Harbor (New York): Cold Spring Harbor Laboratory Press. \$150.00 (hardcover); \$93.00 (comb binding). ix + 388 p + 8 pl; ill.; index. ISBN: 0-87969-578-1 (hc); 0-87969-504-8 (cb). 2000.

This excellent and practical laboratory guide is the fruit of several years experience introducing *Xenopus* as an experimental system at Cold Spring Harbor Laboratory. As a testimony to its usefulness, bootleg prepublication copies of this manual have been circulating in *Xenopus* laboratories for several years already, and have provided a consolidated resource for frequently used protocols in this field.

The manual, written by three leaders in *Xenopus* embryology who have each put in considerable time teaching at the Cold Spring Harbor course, works on at least two levels. First, as intended, it is an excellent introduction for those wishing to explore *Xenopus* as a new experimental system, whether they are graduate students or established investigators. Second, it is (and has been for some time now) very useful to established *Xenopus* laboratories as a day-to-day manual for new techniques such as generation of transgenic animals, and established techniques, including whole mount in situ analysis (with an updated protocol), histology, and immunocytochemistry. Chapter 3, which surveys the many approaches to regulating gene expression in embryos will be very helpful to embryologists as well as those considering *Xenopus* as an alternative system to study gene function. Chapter 9 is an immensely useful resource that brings together data on a number of published fate maps made at different stages of development. Chapter 10, Microdissection, includes descriptions of the frequently used animal cap explant, and also less commonly used techniques such as Nieuwkoop recombinants, Keller explants, transplantation of gastrula and neurula stage tissues, and isolation of the cortex from oocytes and eggs. It is my hope that future editions will include a chapter on the powerful, but challenging oocyte reimplantation tech-