crossbridges. Many of these papers deal with this issue, and a computer model is proposed that attempts to explain latch in terms of the properties of cycling crossbridges. This model proposes that crossbridges that are dephosphorylated while attached to myosin cycle more slowly than phosphorylated crossbridges, presumably because of a slower detachment-rate constant from actin.

The book has a few irritating features. There is a mixture of typefaces among the individual chapters, and in some cases it is difficult to determine where figure legends end and text begins. In addition, a few of the halftone figures are poorly reproduced.

Aside from these minor problems, the book is a valuable resource for investigators in this field and for researchers or students who wish to learn the current state of affairs in smooth muscle research. Perhaps its most valuable contribution lies in showing that there is still much to be learned about the regulation and mechanism of contraction of smooth muscle.

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Comparative Endocrinology

Hormones and Reproduction in Fishes, Amphibians, and Reptiles. DAVID O. NORRIS and RICHARD E. JONES, Eds. Plenum, New York, 1987. xxvi, 613 pp., illus. $95.

As the editors of this volume indicate in their preface, there are five primary reasons for examining the reproductive endocrinology of species that most endocrinologists would regard as "exotics." These include the obvious advantages of understanding the endogenous mechanisms controlling reproduction in economically important or endangered species and the potential use of endocrine manipulation to enhance production or manage natural populations. Though these are primary incentives for much of the work currently under way in comparative reproductive endocrinology, it is basic rather than applied reproductive endocrinology that is the primary focus of this volume. The editors point out that the examination of homologous and analogous hormonal systems in diverse species can provide a clearer understanding of the evolution of reproductive control mechanisms, and the book is organized in such a way as to facilitate such analysis; the 19 chapters, all reviews written by leading researchers in the field, concentrate on major research topics rather than on any one phylogenetic group.

These topics, chosen to represent the primary areas of investigation, range from hormonal control of sexual differentiation to aging of neuroendocrine systems and include hypothalamic, pituitary, ovarian, and testicular function. Summaries are provided for rapidly emerging areas of research (structure and function of gonadotropin-releasing hormones, characterization of steroid receptors), as well as for topics of long-standing interest (hormonal control of oocyte growth, maturation, and ovulation, vitellogenesis, pineal function, sexual differentiation, reproductive behavior, seasonality, and viviparity). Some topics (male accessory ducts, stress, thyroid function, and aging) are comprehensively reviewed here for the first time in a comparative reproductive context.

Within each chapter, separate consideration is given to fishes (usually taken to include Agnatha, Chondrichthyes, and Osteichthyes), reptiles, and amphibians, with summaries of mammalian and avian findings often included as background. Consequently, the species index includes over 400 entries representing all the vertebrate classes. The danger that chapters become little more than lists of research findings by class is occasionally apparent. A major strength of the book, however, is that it reviews a broad and vigorous field of research comprehensively and coherently. Most of the chapters conclude with summaries meant to provide an evolutionary context for the assembled facts and identify the important areas of research progress.

A final rationale the editors give for comparative reproductive research is that ectotherms may in some circumstances serve as model systems for the identification and investigation of fundamental physiological processes with applications to mammals and birds. Unfortunately, an ectothermic model system that has been embraced by the endothermic research establishment is about as rare as a mammalian endocrinologist who closely follows the comparative literature. A successful example, the African clawed frog *Xenopus laevis*, which is now used extensively to study the molecular mechanisms of oocyte development, is discussed frequently throughout the book, although no more frequently than other dominant ectothermic model systems, such as salmonid and cyprinid fishes, ranid frogs, and the lizard *Anolis*. This book serves well to identify the areas of research where studies of poikilotherms are making significant contributions to our basic understanding of the endocrinology of reproduction, including neuropeptide structure-function relationships, environmental and hormonal interactions in the control of reproductive seasonality, and cellular and molecular mechanisms of hormone action. It also identifies many gaps in our knowledge of ectotherm reproduction. Its thorough treatment of the most active area of comparative vertebrate endocrinology makes it essential to the library of any comparative endocrinologist, but it should also be valuable to any endocrinologist or reproductive biologist interested in obtaining a new perspective on a particular research problem or a broader context for interpretation of results.

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Secularization and Technology

The Restoration of Perfection. Labor and Technology in Medieval Culture. GEORGE OVITT, JR. Rutgers University Press, New Brunswick, NJ, 1987. xiv, 272 pp. $32.

This book is not a history of labor or of technology during the Middle Ages. It is, rather, a study of the cultural context of these during the medieval period, with culture being construed in terms of dominant intellectual (that is, theological) ideas and attitudes. George Ovitt's analysis, aimed at the formulation of a perspective on the Middle Ages that permits an accurate assessment of their place in the history of Western labor and technology, confronts repeatedly some celebrated (although variously conflicting) understandings of the medieval achievement.

One of these relates to the modern idea of progress, which Ovitt traces from its 17th-century origins, beginning with Francis Bacon, to the present. Progress, within this perspective, was triggered by the repudiation of the intellectually stultifying culture of the Middle Ages (stultified by religion) and has been sustained ever since by the commitments of reason, science, and technology to the study and exploitation of nature for the benefit of man. Ovitt's reservations concerning the virtuousness of that enterprise resound throughout the book. With respect to the representation of medieval religion as necessarily inimical to progress, technological or otherwise, Ovitt suggests that the notion of progress is relative and that medieval theology did itself embrace an idea of progress. This did, to be sure, enjoin and subordinate human ingenuity and society to the workings of Providence, but that need not and did not prove a complete barrier to the development of efficient labor or of technology or to the major