

Lagomorph Research: Past, Present, and Future

Lagomorph Biology: Evolution, Ecology, and Conservation. Edited by Paulo Célio Alves, Nuno Ferrand, and Klaus Hackländer. New York: Springer. 2007. 413 pp., \$249.00 (cloth). ISBN 978-3-540-72445-2

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Too often lagomorphs are overlooked for their evermore-studied cousins, the rodents. This historical pattern is due largely to the perception that a rabbit is simply a rabbit, and that there is a broadly ‘conserved’ biology among extant and extinct species of lagomorphs. This is certainly not the case, and *Lagomorph Biology: Evolution, Ecology, and Conservation* nicely illustrates that lagomorphs represent a diverse group of mammals rich with tractable research problems and, more importantly, ripe for exposure to new researchers asking new questions. Because this perspective is rare, the publication of this book in itself is a tremendous success for lagomorph researchers.

This edited volume is largely the product of the 2nd World Lagomorph Conference held in Vairão, Portugal in 2004. The second conference was long overdue and held 25 years after the first iteration in Canada. *Lagomorph Biology* marks the current state of lagomorph research and summarizes it in the following sections: Paleontology and Evolution, Population Ecology and Dynamics, Physiology and Behavior, Diseases, and Conservation Management. As the title suggests and the editors note, *Lagomorph Biology* attempts to be an overview of the broad range of biological research topics that focus on lagomorphs

and, for the most part, it is successful. Overall, the papers are of high quality, the book is well edited, and the included illustrations are good. As with any edited volume, however, there is a range of successes in the ability of individual papers to convey intricacies to readers who are often scientifically literate, but may not have the necessary historical background on specific topics. This highlights one of the limits of this book; it does not completely fill the need for a significant publication on lagomorphs that synthesizes a broad range of topics *while also* serving as an introduction to researchers and students just initiating an interest in lagomorphs. In this sense, there is a missed opportunity to bring scientists up to speed on current research topics in lagomorph biology. The section on disease is a good example where an introductory paper highlighting the basic biology of common viruses as well as an overview of the research history would have been an excellent addition. It must be noted that there are adequate to good overviews of the lagomorph fossil record, pika biology, and conservation of endangered lagomorphs, and these papers set up their respective sections reasonably well.

A subtle, but interesting part of the book is a section titled “Trends in Lagomorph Research,” found in the introduction. Here the authors review and compare research topics discussed at the 1979 World Lagomorph Conference to those in 2004. Several prominent trends are recognized; among them are a decrease in studies about the general life history of lagomorphs, and a great increase in taxonomic studies

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that is largely driven by molecular techniques that have come to prominence in the last 25 years. Although not a direct judgment on this book, the reduction of studies on the natural history of lagomorphs is an unfortunate occurrence, as there is a paucity of this sort of data for many lagomorph species as reflected by the problematic taxonomy and unknown conservation status of various lagomorphs throughout the world. The absence of these data becomes clear in the appendix; it is an excellent contribution to the book and includes the geographic distribution and conservation status of all lagomorph species as well as it is known, yet still illustrates much work is to be done. The authors were frank in their hesitation to include this information due to the questionable taxonomic and conservation status of several species. With that caveat, this is an incredibly useful and welcomed addition to the book and serves as a nice update to the last substantial survey of lagomorph conservation (Chapman and Flux 1990).

The overall structure of the book, outlined in the sections listed above, is thoughtfully laid out. The section on paleontology and evolution includes both molecular and morphological studies, but is too focused on European and common taxa. The paper on the fossil record of lagomorphs is a nice introduction to the group from which lagomorphs likely evolved (Mimotonidae) as well as stem lagomorphs, ochotonids, and leporids. It includes several very clear and useful figures that summarize hypothesized relationships among these taxa as well as their geological distribution. The section also contains several molecular studies of more ‘shallow’ evolutionary focus, including the origin of the European rabbit and gene-pool comparisons among several species of *Lepus*. Unfortunately, it does miss out on a discussion of recent molecular research that addresses family-level patterns of evolution within Leporidae (Mathee et al. 2004; Robinson and Mathee 2005). The absence of these family-level molecular phylogenies is particularly unfortunate, because they support, at times, distinctly different intra-familial relationships than traditional leporid systematic studies, and a review of the contrasts would have been a welcome inclusion. The section on Population Ecology begins with an excellent overview of pikas and includes several papers that highlight the important role of many lagomorph species as ecosystem engineers. The Physiology and Behaviour section begins with an interesting and detailed paper on the odor cues

in young rabbits and highlights the unique way in which adult behavior is influenced by odor cues developed during suckling. The section on Disease includes a discussion of several prominent lagomorph diseases, but, as previously mentioned, would have been enhanced with an overview paper providing more general background.

The final research section, Conservation and Management, is perhaps the strongest. It is set up very nicely with an overview of endangered lagomorphs and is followed by a detailed discussion of the conservation status of several lagomorphs, such as the very rare Amami rabbit. This section also highlights management concerns associated with the European rabbit in Australia. Finally, and aside from the previous comments regarding the need for more broad introductory discussion of the various topics, the editors conclude the book with a nice review of the state of lagomorph research — what has been done and what needs to be done. Here they reference the topics of each section of the book, and the only complaint is that this section could have been expanded and still would have been very readable.

Perhaps the most disappointing aspect of this book is its price (\$249.00), which can only be described as prohibitive. The cost will likely limit the book’s use to library patrons, but *Lagomorph Biology* is still a wonderful springboard for lagomorph researchers. In combination with the initiative to re-establish the World Lagomorph Conference and support of growing organizations like the World Lagomorph Society (www.worldlagomorphsociety.org), lagomorph research should continue to grow. Many of the questions outlined in this book will be answered while others are discovered, perhaps by a scientist introduced to lagomorph research by *Lagomorph Biology*.

References

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