LIZARD SOCIAL BEHAVIOR. Stanley F. Fox, J. Kelly McCoy, and Troy A. Baird, eds. 2003. Johns Hopkins University Press, Baltimore, Maryland; London. ISBN 0-8018-6893-9 438 p. $89.95 (hardcover).—When I read this book, a nonscaly colleague passed by and asked: “So, tell me, can lizards really be social?” At that point I knew this book was very well conceived! Not only are lizards indeed social, they have actually served as important model systems for the understanding of the evolution of sociality as the editors nicely illustrate in their introduction. In fact, the main aim of this contribution, which emanated from a 1999 herpetologist’s symposium, was to highlight exactly where lizard behavioral ecologists contributed to the study of adaptive variation in social behavior. As such, the book certainly will continue the great tradition of the previous three volumes on lizard ecology. The book has been a while in the making; almost all the literature citations are from before 2001. I would have loved to have the excellent citation section earlier as a reference tool. I also particularly appreciated the beautiful color plates showing that lizards are indeed more beautiful than even the most decorated birds. It would have been helpful, however, to directly link each picture to the studies of the respective chapters.

The book is organized into three sections covering variation among individuals, among populations, and among species. Each of the sections is introduced by an eminent ecologist who is not a die-hard herpetologist, and each does a great job in putting lizard ecology into a broader perspective. Peter Marler highlights that lizards are indeed good model organisms because they allow us to understand why animal social behavior is so variable. Gordon Orians emphasizes the importance of studying variation in a natural setting. Again lizards seem to be almost perfect systems, because they are conspicuous and tractable, even in the “messy world of nature.” George Barlow, introducing the variation among species, reminds fury, feathery, or arthropod colleagues that lizards allow for the understanding of social behavior in a world where kinship does not play a major role.

The individual chapters are valuable contributions to our understanding of lizard social behavior, but some are better than others in generalizing beyond the taxon studied. In particular, Martin Whiting, Kenneth Nagy, and Philip Bateman do a superb job in summarizing the evidence for costs of social status-signaling badges, from arthropods to amphibians, fish, lizards, birds, and mammals. Similarly excellent is their table on the current theoretical models for the maintenance of signaling systems, divided into costly or cost-free categories. Kelly Zamudio and Barry Sinervo, in discussing the ecological and social contexts for the evolution of alternative mating strategies, nicely highlight general characteristics of the environment at which competition and dispersal events occur. They suggest that the social context of lizards, such as the potential for mate monopoly, may determine the evolution of alternative mating strategies. Diana Hews and Vanessa Quinn carry this line of thought further by asking seven highly stimulating questions about the endocrinological causation of species differences in sexually dichromic signals. Their experiments with masculinized females and feminized males will appeal to biologists of all disciplines who may never see Sceloporus undulatus or Urosaurus ornatus in the wild. In a similarly elegant way, Jonathan Losos, Marguerite Butler, and Thomas Schoener discuss how habitat use can affect the differences in body size between males and females. Their summary of 36 years of published data is impressive.

The remainder of the chapters focus more on the presentation of exciting new empirical data, for example for social behavior in collared lizards (Troy Baird, Dusti Tinamus, and Chris Sloan), antipredatory defense (William Cooper), or the potential for polygyny (Kelly McCoy, Troy Baird, and Stanley Fox). Three pleasently data-rich chapters exploit differences in lizards among altitudes (Stanley Fox and Paul Shipman) or islands, trying to explain the evolution of mating systems and morphology (Masami Hasegawa in the Japanese Izu islands and Paul Stone, Howard Snell, and Heidi Snell in the Galapagos archipelago). The remaining chapter is devoted to a beautiful field study on iguanid mating systems (Paul Gier).

With varying success each chapter attempts to generalize beyond studies on particular lizard species. In each of these sections, I would have liked to see a similarly broad approach as mastered by Marler, Orians, and Barlow to put lizard studies in perspective with ecological studies.