lenge encountered by other evolutionary explanations: how to explain the transition from foraging bands to industrialized nations. Like other approaches, Vannelli proposes a process where smaller *groups* (families) coalesce into larger *groups* (bands), which then coalesced into even larger groups (clans), which then coalesce into still larger groups (tribes). However, he uses the plains "Sioux" to illustrate the inadequacy of this coalescing *group* model because of its inability to explain why loyalty was to kin, and not the fluid residential groups (p. 151). He also comes tantalizingly close to recognizing that what is missing from all such group-based models is the role of traditions identifying individuals as kin (e.g., clan names, p. 153) and traditions promoting cooperation with those individuals (e.g., ancient law, p. 121). Unfortunately, a full appreciation of the evolutionary significance of these traditions awaits a future author.

CRAIG T. PALMER, *Anthropology, University of Missouri, Columbia, Missouri*

RESTLESS CREATURES: THE STORY OF LIFE IN TEN MOVEMENTS.

By Matt Wilkinson. New York: Basic Books. $28.99. vii + 308 p.; ill.; index. ISBN: 978-0-465-06572-1 (hc); 978-0-465-09869-9 (eb). 2016.

Why is our body as it is and not any other way? Why can we not fly? Why do we not just settle for crawling and instead learn to walk? We walk steadily, we trust in our ability to move, but do we really know how the very complex body mechanism that allows us to move from one place to another actually works? Do we know the factors that favored bipedalism in our arboreal ancestors? Matt Wilkinson takes us on a fascinating journey of four billion years across life's existence to answer these questions, explaining to us the key to one of the evolutionary triumphs that has allowed us to become who we are today: locomotion.

Restless Creatures is a detailed travel diary that offers an account of the evolutionary history of locomotion, from the earliest stirrings of single-celled organisms to the sophisticated machine of movement that is the human body. To this end, Wilkinson makes 10 stops along the millennial journey, in fact the 10 chapters of this work, where he approaches cardinal evolutionary stages of locomotion. He stops to detail the emergence and functioning of major locomotory transitions such as the terrestrial colonization by marine species, the shaping of the fore-to-aft axis and the left/right symmetry, the origin of flight, the passage of our quadruped ancestors to bipedalism, the development of our nervous system, and the pillar of all transitions and, in fact, the most surprising one: the beginning of locomotion itself. These transitions have been able to thrive over time, the author says, thanks to the appearance and development of key anatomical features, useful for movement at various scenarios, such as the vertebrate backbone, limbs, wings, and opposable thumbs.

Every step we take while walking is explained as the result of the costly and slow molding of the locomotory apparatus of our ancestors. One of the contributions of *Restless Creatures* is, consequently, to have shown, through a meticulous study of the evolutionary history of locomotion, the function it has fulfilled in the obtainment of our specific features as human beings. Wilkinson details how the correlation between the physical laws of propulsion and natural selection over four billion years has shaped both our physical form and our mental abilities through the evolution of the brain, our human essence, ultimately. For the author, the need for movement defines all living beings, from the most seemingly static plants to the fastest of the felines; locomotion is, therefore, part of our evolutionary identity.

The fundamental interrelationship between the appearance of key anatomical traits and the locomotory transitions that have triumphantly taken place over billions of years would, nevertheless, reveal an even greater bond according to Wilkinson. It is the wonderful bond of kinship that we share with all living beings who have climbed, swum, flown, dragged, run, galloped, and walked; in short: beings who have prospered in the evolutionary history of locomotion and who have brought us to the present.

BÁRBARA JIMÉNEZ, *Philosophy, University of the Basque Country, San Sebastián, Guipúzcoa, Spain*

HOW TO TAME A FOX (AND BUILD A DOG): VISIONARY SCIENTISTS AND A SIBERIAN TALE OF JUMP-STARTED EVOLUTION.

By Lee Alan Dugatkin and Lyudmila Trut. Chicago (Illinois): University of Chicago Press. $26.00. vii + 216 p. + 12 pl.; ill.; index. ISBN: 978-0-226-44418-5 (hc); 978-0-226-44421-5 (eb). 2017.

This book describes the experimental study of fox domestication that began nearly 60 years ago when Soviet geneticist Dmitri Belyaev began to select for tameness in silver foxes. Belyaev's work began during the depths of the Lysenko era when it was dangerous to study selection. Indeed, Belyaev's brother, a silkworm geneticist, was murdered because of his research. Yet, Belyaev, well regarded because of his work with fur bearers, was successful and productive and wanted to see if evolution would happen quickly and act through a suite of traits shifting under selection for tameness.

Belyaev and his team developed standardized protocols to approach foxes held in cages (initially at fur farms) and quantify their tameness. The most aggressive foxes bit at the cage and lunged at the investigators, but there was individual variation and

some permitted closer approaches. The tamest foxes, as well as selected other foxes, were permitted to breed and produce the next generation.

After four generations of directional selection the fox pups in the line selected for tameness started to behave more like dogs; one even wagged its tail. After eight generations, the foxes were friendly, had curly tails, and wagged them—unknown traits in the unselected and aggressive line. Some foxes were experimentally tasked to live with people, where they astounded investigators by behaving like dogs.

The story is a joint one and Lyudmila Trut, who began working with Belyaev as a student, ran the day-to-day aspects of the project, and later ran the entire project, emerges as a star. Through collaborations that she welcomed, the fox domestication project identified specific genes involved in domestication (some shared with those involved in wolf-to-dog domestication), studied the endocrinological basis of tameness, asked cognitive questions that show that the process of selecting for tameness also leads to increased social intelligence, and discovered that vocalizations made by tame, domesticated foxes resemble human laughs and are attractive to humans.

Belyaev died in 1985 before Soviet Union dissolved, and the breakup and subsequent currency collapse hit the fox study hard. Trut was unable to provide food for the foxes and some began to starve. She wrote a high-profile article in 1999 (*American Scientist* 87:160–169) that described the lessons from the first decades of the study and requested financial help to keep it going. Help arrived, and along with it came more collaborations.

Today the fox domestication project illustrates the speed at which selection can occur and the importance of regulatory genes and linkage in evolution. The suite of traits that change with selection for tameness, and the interplay between human behavior and fox behavior, raises the intriguing hypothesis that domestication involves an intimate dance between humans and the domesticated species. Belyaev was always interested in the origin of modern humans—could similar domestication processes have occurred in our ancestors?

Belyaev had one major regret: he did not write a popular book. This volume celebrates his original insights, his tenacity, and the amazing leadership and hard work by Trut and her dedicated team of technicians. Written in a highly accessible style, it is appropriate for both scientists and nonscientists and introduces readers to contemporary questions in behavior and evolution.

Daniel T. Blumstein, *Ecology & Evolutionary Biology, University of California, Los Angeles, California*

Conservation Behavior: Applying Behavioral Ecology to Wildlife Conservation and Management. *Conservation Biology, Volume 21.*

Edited by Oded Berger-Tal and David Saltz. Cambridge and New York: Cambridge University Press. $125.00 (hardcover); $59.99 (paper). xxii + 382 p.; ill.; index. ISBN: 978-1-107-04010-6 (hc); 978-1-107-69041-7 (pb). 2016.

This volume takes a comprehensive and practical look at a crucial question in wildlife conservation: how can an understanding of how animals behave—and why they behave the way they do—help us to design and implement better conservation strategies? The book is a remarkably broad, yet detailed survey of different dimensions of the interaction between behavioral ecology and wildlife conservation, and weaves an example-rich story of how to turn a deeper understanding of the many aspects of animal behavior into useful plans for optimizing conservation intervention.

The volume has a very practical feel throughout, and the target audience could be conservation practitioners looking to understand how behavioral science can help them build informed strategy. However, each chapter is firmly grounded in ecological theory, with a detailed and clear introduction to the concepts needed to understand *why* behavior influences conservation, and not just *how*. Although some of the content may be challenging for readers without a background in behavioral ecology, the concepts are presented with remarkable clarity. For example, Swaddle's introduction to evolutionary theory strikes a balance between the need to present complex concepts of macro- and microevolutionary change with the need to keep those concepts in a context that seems relevant to conservation planning. Similarly, Schakner and Blumstein's chapter on the theory of learning behavior is essential background knowledge, and yet is presented with multiple practical examples that illustrate the importance of this theory to wildlife research in the field. This would make the book also suitable for a master's course, or even perhaps an advanced undergraduate course in conservation biology.

Many of the earlier chapters provide highly readable whirlwind tours of concepts such as behavioral plasticity, sensory perception, and learning behavior. Yet every chapter is exceptionally rich in practical examples, with useful citations that form classic case studies of the principles involved. Some topics, such as sensory perception, are presented in more detail than is probably necessary for most conservation practitioners, but this only strengthens the volume as a resource for students studying for their master's degree.

The latter part of the book deals with more practical questions such as reserve design, translocations,