

questions about the nature of both the boundaries and the internal structure of real evolutionary groups. As such, they would play an important role in directing evolutionary biologists toward worthwhile topics for investigation. This approach would require shifting our views on the role of taxonomy, to emphasize the act of hypothesizing species according to a given model. Combining the data collection Hey calls for with a treatment of species concepts as models would advance our understanding of how the world of real evolutionary groups is structured.

BOOKS: COGNITIVE SCIENCE

An Eastern View of Apes and Monkeys

Sarah Boysen

In 1948, Kinji Imanishi and Jun'ichiro Itani opened a new approach to the study of primate behavior when they began continuous, long-term observations of free-ranging macaques at several sites in Japan. Their intellectual descendents have since contributed much to the development of primatology and to the many disciplines concerned with the evolution of mind and behavior. That Japanese biologists, anthropologists, and psychologists continue to do so is amply demonstrated by *Primate Origins of Human Cognition and Behavior*. The volume explores a wide range of issues, with an emphasis on comparative approaches. It will especially benefit American and European scientists and students through its presentation of research and perspectives that have previously been unavailable to them. The volume's emphasis on studies of the common chimpanzee (*Pan troglodytes*) reflects the long-standing interests of its editor, the not-so-common cognitive psychologist Tetsuro Matsuzawa.

The editor has long worked to bring primatologists from around the world together in innovative ways, by building a model, state-of-the-art facility for studying chimpanzee cognition at Kyoto University's Primate Research Institute. Matsuzawa has provided opportunities for collaborations with other investigators and their graduate students at his home institution. And he has championed efforts, funded by the Japanese government, to bring primate researchers together through a series of focused annual meetings. (These have highlighted such top-

ics as chimpanzee cognition, chimpanzee behavior in the wild, gorilla and orangutan studies, and animal learning and cognition.) Thus, over the years, a large contingent of investigators have been hosted by Primate Research Institute scientists and have had the opportunity to share ideas, cross-fertilize their research efforts, and learn firsthand how primatology is conducted by the Japanese. And, as the volume makes clear, these efforts have helped Japanese researchers stay abreast of studies elsewhere.

Matsuzawa's insightful preface, which itself would be worth much of the price of the book, is followed by 28 chapters. Nearly all authored or co-authored by Japanese investigators, these include a host of contributions from interdisciplinary and international collaborations. Despite the editor's humility in giving historical and current credit to other Japanese primatologists, such a rich mélange would never have been possible were it not for his own scientific vision and generosity. Those of us within the field know Matsuzawa to be an extremely compassionate and ardent champion for the species he loves, as well as a one-man ambassador for the dissemination of the work of his Kyoto University colleagues. Such commitment is also reflected in the programmatic approach to exploring the cognitive capacities of chimpanzees—capacities that are well-documented in the book—that Matsuzawa has encouraged.

Primate Origins showcases an important line of chimpanzee research that has successfully combined observational and experimental approaches carried out in both the laboratory and the wild. In addition, it provides a forum for considerations of numerous areas of study of nonhuman primates. Matsuzawa offers an introduction to comparative cognitive science. Four chapters discuss the phylogeny of perception and cognition. Another set of chapters addresses the origins of human speech through studies of auditory perception and vocalization. Other parts of the book examine learning and memory; the recognition of self, others, and species; and social interactions. The volume's last part discusses culture as it applies to primate traditions such as sweet potato washing in Japanese macaques and tool use in wild chimpanzees.

Without question, this volume belongs on the desk of any student or researcher with a serious interest in primate behavior



KP duty. Japanese monkeys (*Macaca fuscata*) on Koshima Island wash sweet potatoes. Invented by a 1.5-year-old female in 1953, the behavior gradually spread through the population and was transmitted to following generations.

or comparative cognition. The editor has succeeded admirably in bringing together a coherent collection of important work. Matsuzawa's charming and informative children's book, which describes his own research on language capabilities in apes and similar former projects in the United States, was long required reading for second graders throughout Japan. Likewise, *Primate Origins of Human Cognition and Behavior* should be required reading for investigators around the world who wish to become acquainted with the creative and persistent efforts of Japanese primatologists.

BROWSEINGS

The Recombinant DNA Controversy. A Memoir. Science, Politics, and the Public Interest, 1974–1981. Donald S. Fredrickson. ASM Press, Washington, DC, 2001. 408 pp. Paper, \$39.95. ISBN 1-55581-222-8.

During his tenure as director of the National Institutes of Health, Fredrickson found much of his time consumed by the heated debates over research using recombinant DNA technology. The controversy was ignited by divergent estimates of the risks posed by recombinant experiments. It flared in clashes on whether the work should be governed by regulations or guidelines and how involved the public should be in determining either. Here Fredrickson focuses on the Asilomar Conference of February 1975, which shaped the early rules, and the Recombinant DNA Advisory Committee, which refined and revised them. His narrative account of the complex interactions between science and society highlights the efforts to win public acceptance for biotechnology in its early years.

Primate Origins of Human Cognition and Behavior

T. Matsuzawa, Ed.

Springer, Tokyo, 2001. 599 pp. \$129, €119, ¥9,500. ISBN 4-431-70290-3.