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978-0-521-76185-7 - The Monkeys of Stormy Mountain: 60 Years of Primatological Research on the Japanese Macaques of Arashiyama

Edited by Jean-Baptiste Leca, Michael A. Huffman and Paul L. Vasey

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Cambridge Studies in Biological and Evolutionary Anthropology 61

The Monkeys of Stormy Mountain: 60 Years of Primatological Research on the Japanese Macaques of Arashiyama

The Arashiyama group of Japanese macaques holds a distinguished place in primatology as one of the longest continuously studied non-human primate populations in the world. The resulting long-term data provide a unique resource for researchers, allowing them to move beyond cross-sectional studies to tackle larger issues involving individual, matrilineal and group histories.

This book presents an overview of the scope and magnitude of research topics and management efforts that have been conducted on this population for several decades, covering not only the original troop living around Kyoto, Japan, but also the two subgroups that were translocated to Texas, USA and to Montréal, Canada. The chapters encompass topics including life history, sexual, social and cultural behaviour and ecology, giving an insight into the range of current primatological research. The contributors underscore the historic value of the Arashiyama macaques and showcase new and significant research findings that highlight their continuing importance to primatology.

JEAN-BAPTISTE LECA is a post-doctoral research fellow and Lecturer in the Department of Psychology, University of Lethbridge, Canada. His research explores the determinants of behavioural innovations and traditions, and the evolution of non-conceptive sexuality, including the motivational mechanisms underlying female-to-male mounting in Arashiyama Japanese macaques.

MICHAEL A. HUFFMAN is an Associate Professor in the Department of Social Behaviour and Ecology at the Primate Research Institute, Kyoto University, Japan. His research on free-ranging and captive Japanese macaques encompasses sexual behaviour, reproductive physiology and energetics, enrichment, social learning, cultural behaviour, self-medication and parasite ecology.

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The Monkeys of Stormy Mountain

*60 Years of Primatological Research on the
Japanese Macaques of Arashiyama*

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We dedicate this book to the memory of the late Nobuo Asaba, Nancy Collinge, Larry Fedigan, Carole Gauthier, Baldev Grewal, Naonosuke Hazama, Junichiro Itani, Shunzo Kawamura and Eiji Ohta, as well as all the other people who directly or indirectly contributed to the development of research on the Arashiyama monkeys and to our professional development under their mentorship. Their examples live on in us, and those we mentor.

Jean-Baptiste Leca, Michael A. Huffman and Paul L. Vasey

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Foreword

MASAO KAWAI

Kyoto University Professor Emeritus

In 1951, the Primate Research Group was created in the Department of Zoology at Kyoto University, and it was from this point that systematic research on Japanese macaques began. In 1952, the troop on the island of Koshima (Miyazaki Prefecture) was successfully provisioned, followed shortly thereafter by successful provisioning of the Takasakiyama troop ('yama' means mountain in Japanese) under a plan proposed by Tamotsu Ueda, the mayor of Oita City (Oita Prefecture). Junichiro Itani¹ had begun to study the Takasakiyama troop in April 1950, but after provisioning began, he was officially put in charge of research on the provisioned troop. Based on individual identification of the entire troop, he was the first to document this species' hierarchical social structure and described their vocal communication system, among other important findings.

Ueda's intention was to provision and habituate the monkeys in order to create a wild monkey park to attract tourists. For this, it was necessary to have the cooperation of researchers, and thus this joint effort of science and business made the establishment of the wild monkey park at Takasakiyama possible. At that time, the Takasakiyama troop was quite large, containing 180 members. Being located close to the natural hot springs of Beppu, many tourists visited the park and it became a very profitable venture. Based on the success of Takasakiyama, other wild monkey parks were soon established across the country.²

¹ Junichiro Itani (1926–2001, Professor Emeritus of Kyoto University), Shunzo Kawamura (1924–2003, Professor Emeritus of Kyoto University) and Masao Kawai (born 1924, Professor Emeritus of Kyoto University) are the three most prominent pioneers of primatology in Japan who started their research together under the direction of Kinji Imanishi (1902–1992, Professor Emeritus of Kyoto University), going on to make major contributions to the discipline and to nurture generations of primatologists in Japan and from abroad who came to work with them.

² In 1957, there were 19 monkey parks in operation across the country. In order to promote adequate protection, understanding and respect for wild monkeys and to facilitate information exchange, all wild monkey parks became members of the League for the Protection of Wild Japanese Monkeys (日本野猿愛連盟), established in September 1957. *Yaen* (Wild Monkey), a journal dedicated to the dissemination of information about Japanese monkeys, was established and published four times a year in Japanese. The administrative office was set up within the Japan Monkey Centre located in Inuyama with M. Kawai in charge. Koshima was the only troop that did not become part of the tourist parks, and maintained its status as a research site.

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Within the larger Kyoto City area, Arashiyama, a small town located on the western edge of the city, has been a tourist destination famous for its scenic beauty, from ancient times. Sonosuke Iwata, a wealthy entrepreneur and owner of Iwatayama – the mountain was named after his family – planned to lure the monkeys to a location on the steep slopes of the mountain and provision them there to make another wild monkey park. The Arashiyama-Kyoto troop lived some distance away from Iwatayama and so it would be a very difficult task to induce them to come to the feeding site. In 1954, this ambitious project was entrusted to Naonosuke Hazama, a researcher in the Department of Zoology at Kyoto University. Hazama undertook this project and was eventually successful in luring and habituating the group to settle on the slopes of Iwatayama. The Iwatayama Nature Park was established in March 1957.

The two principal researchers in charge of provisioning at the time were Hazama and Kinya Nakajima. They were supported by the Primate Research Group. Thus the system of management and operation of the Iwatayama Nature Park was established under the collaborative efforts of business and research. The recording of individual identification and maintenance of the troop's genealogies from 1954 up to the present have been made possible because of this business and research collaboration. Hazama's systematic and thorough work on individual body weight and development, and the troop's natural plant food diet, were significant contributions to our fundamental knowledge of the Japanese macaque.

A noteworthy point to mention about research on the Japanese macaques of Arashiyama is the continued collaborative relationships between Japanese and foreign researchers, in particular from the USA. In 1966, a joint Japan–America scientific collaboration was established between Shunzo Kawamura, then at Osaka City University, and John Emlen of the University of Wisconsin–Madison. In 1972, after the troop fission of 1966, the Arashiyama A-troop was transported to Texas. This was the first instance for an entire Japanese macaque troop to be relocated overseas, and the last. The US research team carried out independent studies on this troop.

From this time onward, a number of researchers from the USA, Canada, UK, France, India, Tanzania, Indonesia and other countries in the world, came to Arashiyama to conduct research, making many valuable scientific contributions. Among these, the unique longitudinal research on stone handling, a cultural behaviour in Japanese monkeys documented by M. A. Huffman, has gathered wide attention. Huffman's enthusiasm for primatological research and his organisational abilities have resulted in many other researchers from abroad coming to Arashiyama over the years, since he started his work there in the late 1970s.

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Masao Kawai at his home in Sasayama, Hyogo Prefecture, Winter 2011
(photo by G. Ohashi).

It is indeed my great pleasure to welcome the publication of this multi-authored book, a collaboration between researchers from Japan and around the world, presenting the 60-year history of research on the Arashiyama Japanese macaques and its major contributions, as well as the most recent findings from work on the Arashiyama-Kyoto troop and on its sister troop members in North America. In the long history of Japanese monkey research, this is an epic endeavour. The genealogies of the Arashiyama troops are complete for the 60-year period of research to date. A number of new research topics may arise from this unique demographic dataset. Based on this book, I am anticipating many new and valuable research results will spring forth from the Arashiyama monkeys in the future.

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Preface

Many researchers may have heard of the Arashiyama macaques, but are unaware of the scope and magnitude of research and management efforts that have been conducted on this population, as well as its overall significance for wider issues in the area of evolutionary studies and educational outreach. In 1991, Linda M. Fedigan and Pamela J. Asquith co-edited the volume, *The Monkeys of Arashiyama: Thirty-five Years of Research in Japan and the West*. Since the completion of this book, a number of interesting developments have taken place in the fields of research, management and education related to the Arashiyama macaques. These developments prompted us to publish a second edited volume that updates the first one in a number of areas, covers research on the Arashiyama macaque troops since the publication of the Fedigan and Asquith volume, and also takes advantage of the long-term records available from years of collaborative research between observers working at the site.

Research at Arashiyama has now passed the half-century benchmark – an impressive feat that characterises few other field sites. In June 2008, a symposium on the Arashiyama macaques, entitled *Half a Century of Research on the Behavior & Evolution of the Arashiyama Macaques*, was organized for the Human Behavior and Evolution Society Meetings in Kyoto, Japan, by Paul Vasey. In September 2010, another symposium, entitled *The Japanese Macaques of Arashiyama: Demographic Studies, Behavioral Research, and Management Efforts*, was organized for the International Primatological Society XXIII Congress in Kyoto by Jean-Baptiste Leca. These symposia highlighted the active and on-going primatological research at the site. Some of the participants were invited to contribute to this edited volume, and they produced a series of chapters which represent the current state of research on the Arashiyama macaques. We feel privileged that they accepted to participate in this project.

Our overarching goal in editing this new book is to underscore the truly historic and, indeed, the value and diversity of primatological research activities that have been carried out on the different populations of Arashiyama macaques studied for several decades, namely the original troop still living around Kyoto, Japan, as well as the two subgroups translocated to south Texas, USA, and to Montréal, Canada. The Arashiyama macaques continue to yield new and significant research findings and these are showcased in this book.

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We are very grateful, first and foremost, to Professor Masao Kawai, one of the great names in Japanese primatology, for agreeing to write the Foreword to this book. We also wish to thank all the contributors to this edited volume: Patrick Bélisle, Alisa Chalmers, Constance Dubuc, Linda M. Fedigan, Mariko Fujimoto, Noëlle Gunst, Eiji Inoue, Katharine M. Jack, Masao Kawai, Naoki Koyama, Andrew J. MacIntosh, Yukiyo Maekawa, Eiji Ohta, Ann C. O'Neill, Mary S.M. Pavelka, Sergio M. Pellis, Vivien C. Pellis, Jean Prud'homme, Anne Russon, Masaki Shimada, Keiko Shimizu, Yukimaru Sugiyama, Yukio Takahata, Yuji Takenoshita, and Doug P. VanderLaan. It is extremely gratifying that so many researchers continue to find value in Arashiyama as a study site.

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We believe the work presented in this book will spark the interest of a new generation of primatologists who might make the journey to Arashiyama and play their own role in the long history of research at this site. Let us hope so, in which case, some of us might look forward to reading the centenary research volume on the Arashiyama monkeys!

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