



# The Comparative Pathology of Zoo Animals

RICHARD J. MONTALI and GEORGE MIGAKI, *Editors*

With Section Editors

KURT BENIRSCHKE, JOHN C. HARSHBARGER,  
FRANKLIN M. LOEW, and JOHN D. STRANDBERG

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Smithsonian Institution

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## Foreword

It is a great pleasure for the Smithsonian Institution to serve as a host for the first international symposium held in the Western Hemisphere on the comparative pathology of zoo animals. The staff of the National Zoological Park, I am sure, is particularly proud that this significant meeting was held in their new education facilities. We applaud the efforts of the other sponsors: The Registry of Comparative Pathology, Armed Forces Institute of Pathology; The Zoological Society of San Diego; The Baltimore Zoological Society; and the Smithsonian Registry of Tumors in Lower Animals. We also appreciate the great support of the Friends of the National Zoo who have actively participated in and contributed to so many of these functions.

These 88 papers, which were presented over a course of three days, cover a variety of subjects—some concerned with the effects of disease on zoo animals, many of which represent endangered species—others pointing out possible new animal models for the study of certain diseases in man. One interesting paper concerns the study of stress-caused renal failure in captured roe-deer. It addresses the problems associated with the restraint and transportation of these wild deer and the trauma which may result. Studying the biologic mechanisms of how these untoward effects of capture occur can be helpful as well as interesting. The end point of this study, as well as other research presented in this symposium, is that of learning preventative measures necessary to minimize these stressful effects of captivity. Since so much of what we are doing in zoos around the world is concerned with the preservation and reproduction of endangered and rare species, it is most important that these kinds of studies be continued and shared among zoo personnel concerned with the health of their collections.

If we are to keep alive the rare animals, birds, and other fauna for the enjoyment of man, we must continue all efforts to study the diseases which can kill them prematurely—both in captivity and in the wild.

I commend the efforts of those organizing this important meeting and again welcome the participants exchanging their valuable information at this forum.





**Richard J. Montali, D.V.M.**  
**George Migaki, D.V.M.**  
Washington, D. C.  
June 12, 1979

## Preface

The idea for this symposium originated while we were on a plane trip to another meeting and were discussing the great potential of zoo animals for possible models of diseases of man and domestic animals. We wondered if other investigators were studying any of these diseases intensively. Any emphasis on the diseases of zoo animals in the United States has been recent and apparently coincides with renewed interest in the conservation movement that appears to be burgeoning in this country. In the recent past, diseases of other than pets and food animals have been considered curiosities. European colleagues have taken greater strides in promoting research efforts covering many aspects of zoological animals including their diseases.

A survey to measure the interest and possible, presentable material concerning pathologic studies of zoo animals was very favorable. In fact, we were overwhelmed with material representing a wide array of studies concerned with describing, comparing, and researching disease processes that occur in zoological species. The format in this symposium thus represents not only reviews of numerous topics by experts—who have dealt with some aspects of their discipline as they apply to or may be applied to zoo animals—but also numerous original papers describing familiar entities in unfamiliar species. As well, totally new conditions of exotic species are dealt with which add to the general fund of knowledge of animal diseases and further widen the spectrum of animal pathobiology.

The material from the presentations and poster sessions that went into these proceedings is considered a beginning. Much of it, although providing some answers at this point, serves more to generate stimulating questions and represents fertile ground for continued research efforts. It is anticipated that before long, gaps in the spectrum of animal diseases, including those of man, will be filled by information gleaned from zoological species.

We would like to thank the many individuals who have made these proceedings a reality and regret that it is impossible to name here all who contributed. Special acknowledgment, however, is due Mrs. Judith F. Wilder, editor for the publisher, who guided the construction of this volume from its beginning to a successful completion.

