Feline Husbandry
Diseases and Management in the Multiple-Cat Environment

Niels C. Pedersen, DVM, PhD
Professor, Department of Medicine
School of Veterinary Medicine
University of California
Davis, California

Book Editor: Paul W. Pratt, VMD
Production Manager and Cover Design:
Elisabeth S. Stein

American Veterinary Publications, Inc.
5782 Thornwood Drive
Goleta, CA 93117
© 1991
Dedication

This book is dedicated to all of the cat lovers (individuals and groups) who have supported me and my research during the past 18 years. I am particularly indebted to the members of Save Our Cats and Kittens, who were there when I needed help the most, and to the Robert H. Winn Foundation affiliated with The Cat Fanciers' Association. Finally, I am grateful to my own family, my wife Gerie and our children Stephanie, Holly, Collin and Megan, and to my mother Evelyn Pedersen. Though the word “husbandry” is often applied to the relationship of man and his animals, the term is firmly rooted in experiences of the ultimate living group, the human family.

Niels C. Pedersen, DVM, PhD
Authors

C.A. Tony Buffington, DVM, PhD
Associate Professor and Nutritionist
Veterinary Hospital
Ohio State University
1935 Coffey Road
Columbus, OH 43210-1089

Niels C. Pedersen, DVM, PhD
Professor
Department of Medicine
School of Veterinary Medicine
University of California
Davis, CA 95616

Gregory F. Grauer, DVM, MS
Associate Professor
Department of Clinical Sciences
College of Veterinary Medicine
Colorado State University
Fort Collins, CO 80523

Roy Robinson,
Geneticist
St. Stephens Road Nursery
Ealing, London W13 8HB
United Kingdom

Benjamin L. Hart, DVM, PhD
Professor and Behaviorist
Department of Physiological Sciences
School of Veterinary Medicine
University of California
Davis, CA 95616

George H. Stabenfeldt, DVM, PhD
Professor and Chairman
Department of Reproduction
School of Veterinary Medicine
University of California
Davis, CA 95616

Joan Wasthuber
Cat Breeder and CFA Allbreed Judge
President, Robert H. Winn
Foundation, affiliated with
The Cat Fanciers’ Association
6085 Gordon Valley Road
Suisun, CA 94585

Gary D. Osweiler, DVM, PhD
Professor and Section Leader
Veterinary Diagnostic Laboratory
College of Veterinary Medicine
Iowa State University
Ames, IA 50011
Preface

The domestic cat is one of the most difficult animal species to propagate under conditions of close confinement and intense breeding. This is due in part to their comparatively thin veneer of domestication and, in part, to their distinct constitutional nature. Unlike cattle, horses, sheep, goats and dogs, cats are solitary and territorial animals. Therefore, it is against their nature to be confined to limited space and with a large number of other cats. Overcrowding and poor husbandry lead to myriad infectious diseases and behavioral problems. The fact that cats are pure carnivores has also led to many nutritional problems. Though cats require large amounts of animal tissues for food, modern commercial cat foods are increasingly of nonanimal origin. This has led to an interesting array of nutritional disorders.

In spite of difficulties in rearing large numbers of cats in confined quarters, catteries and multiple-cat households are a permanent and increasingly common fixture of modern civilization. Therefore, we must learn how to raise cats in a manner conducive to their optimum health and reproduction. This can be approached in 2 ways: to further domesticate cats by careful selective breeding so they can better tolerate multiple-cat environments; or to optimize conditions within the multiple-cat environment in such a way as to ensure good health. Unfortunately, neither approach is widely practiced. Genetic selection is largely for body conformation and coat color, and often involves extensive inbreeding. Inbreeding, especially when done improperly, leads to more genetic defects and developmental anomalies, and less vigor. Unfavorable husbandry and breeding practices are not done intentionally. Rather, they result from a lack of knowledge of proper husbandry and breeding procedures. Hence, the impetus for this text.

This book was written for veterinarians, laboratory animal managers, veterinary students and cat breeders. This audience was targeted because the goal of raising healthy cats requires that both veterinarians and cat breeders work together. Unfortunately, both cat breeders and veterinarians tend to look only at the individual sick animal: What disease does it have? How do we treat it? The real questions should be: What disease does it have? Why did this disease occur? How can we prevent it from happening to others?

When dealing with confined cat populations, the individual animal is only an indicator of problems in the environment as a whole. Most disease, whether it is behavioral, reproductive, genetic, infectious or nutritional in nature, results mainly from inadequacies in management of the environment in which modern cats live. Therefore, control of disease in multiple-cat environments involves good husbandry practices. The word husbandry literally means “to manage carefully and economically.” Though often applied to farmers caring for livestock, good husbandry is a moral obligation for everyone involved in the human-animal interaction.

Niels C. Pedersen, DVM, PhD
## Contents

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 History of Domestic Cats and Cat Breeds</td>
<td>1</td>
</tr>
<tr>
<td>2 Normal Genetics, Genetic Disorders, Developmental Anomalies and Breeding Programs</td>
<td>61</td>
</tr>
<tr>
<td>3 Reproduction and Reproductive Disorders</td>
<td>129</td>
</tr>
<tr>
<td>4 Common Infectious Diseases of Multiple-Cat Environments</td>
<td>163</td>
</tr>
<tr>
<td>5 Behavior</td>
<td>289</td>
</tr>
<tr>
<td>6 Nutrition and Nutritional Disorders</td>
<td>325</td>
</tr>
<tr>
<td>7 Toxicology</td>
<td>357</td>
</tr>
<tr>
<td>8 Cattery Design and Management</td>
<td>393</td>
</tr>
<tr>
<td>Appendix</td>
<td>439</td>
</tr>
<tr>
<td>Index</td>
<td>447</td>
</tr>
</tbody>
</table>
Feline environmental enrichment can prevent numerous disorders including anxiety, stress, obesity, and feline idiopathic cystitis. Despite its easy implementation and low cost, it has received little attention. The topic of feline husbandry had always fascinated me and there was an obvious and immediate need to get something out to the public and profession. I had a great deal of experience with breeding cats for research and had many contacts with catteries through my early experience with SOCK and the battle against feline leukemia virus infection.