# Table of Contents

*List of Contributors*  
List of Contributors xiii

*Foreword*  
Foreword xv

*Preface*  
Preface xvii

*Acknowledgments*  
Acknowledgments xix

1  
**The Legal System: The Veterinarian’s Role and Responsibilities**  
Introduction 1
Defining Animal Cruelty 1
Governing Laws 2
How Veterinarians Become Involved 2
Search and Seizure 7
Handling the Media in Animal Cruelty Cases 7
Confidentiality 7
Filing Criminal Charges and Hearings 8
Non-Criminal Cases 10
Trial 11
Compensation for the Veterinarian 15
Conclusion 16

2  
**Crime Scene Investigation**  
Introduction 17
The Veterinarian’s Role and Handling of Animals at the Crime Scene 18
General Considerations for Crime Scene Processing 19
Environment: Weather Data 19
Photography and Videography 20
Evidence Recognition and Documentation 21
Evidence Collection and Packaging 23
Exclusionary Biological Testing 24
Blood Evidence 25
Burial Scenes: Grave Detection, Mapping, and Excavation 29

3  
**CSI: Examination of the Animal**  
General Considerations 37
Determining Non-Accidental Injury 38
Behavioral Considerations of Animals 41
Evidence Documentation, Collection, and Packaging 41
Chain of Custody 41
Table of Contents

Photography and Videography .................................................. 42
Examination and Documentation of the Live Animal .................. 43
External Examination ............................................................... 43
Forensic Necropsy .................................................................... 47
Special Considerations .............................................................. 58
The Forensic Report ................................................................. 62

4 Special Considerations in Animal Cruelty Cases ....................... 69
   Large Scale Cruelty Cases ..................................................... 69
   Trace Evidence ...................................................................... 77
   Forensic Botany .................................................................... 79
   DNA: Deoxyribonucleic Acid ............................................... 81
   Animal Death/Injury in Human Suspicious Death/Injury Cases .. 83
   Other Unique Identifiers of Animals ...................................... 84
   Münchausen Syndrome by Proxy .......................................... 84
   Suffering .............................................................................. 86
   Pain .................................................................................. 90
   Suggested Reading on Pain in Animals ................................... 95

5 Blunt Force Trauma .................................................................. 97
   Overview ............................................................................. 97
   Bruising/Contusions ............................................................. 98
   Abrasions ........................................................................... 101
   Lacerations ......................................................................... 103
   Ligature Injuries ................................................................... 103
   Avulsion Injuries ................................................................... 104
   Fractures ............................................................................. 105
   Motor Vehicle Accident (MVA) Injuries ................................. 106
   Fall Injuries ......................................................................... 107
   Swinging/Dragging Injuries .................................................. 108
   Grooming-Associated Injuries .............................................. 108
   Blunt Force Injuries to Specific Body Regions ......................... 109

6 Sharp Force Injuries .................................................................. 123
   General Considerations ....................................................... 123
   Stab Wounds ....................................................................... 124
   Incised-Stab Wounds ............................................................ 128
   Incised Wounds .................................................................... 128
   Chop Wounds ....................................................................... 129
   Mutilations, Predator Attacks, and Dog Attacks .................... 130
   Ritualistic Crimes .................................................................. 134

7 Burn-, Electrical-, and Fire-Related Injuries ............................... 139
   Interpreting Burn Patterns .................................................... 139
   Recognition and Collection of Evidence .............................. 139
   Burn Classification .................................................................. 140
   Systemic Effects of Burns ..................................................... 141
   General Microscopic Examination Findings in Burns ............... 141
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Burns</td>
<td>141</td>
</tr>
<tr>
<td>Chemical Burns</td>
<td>144</td>
</tr>
<tr>
<td>Electrical Burns</td>
<td>145</td>
</tr>
<tr>
<td>Fire-Related Injuries</td>
<td>146</td>
</tr>
<tr>
<td><strong>8 Firearm Injuries</strong></td>
<td>151</td>
</tr>
<tr>
<td>Introduction</td>
<td>151</td>
</tr>
<tr>
<td>Overview of Firearms</td>
<td>151</td>
</tr>
<tr>
<td>Wound Ballistics</td>
<td>154</td>
</tr>
<tr>
<td>Determining Entrance and Exit Wounds</td>
<td>155</td>
</tr>
<tr>
<td>Determining Gunshot Range</td>
<td>158</td>
</tr>
<tr>
<td>Examination of Gunshot Victims</td>
<td>165</td>
</tr>
<tr>
<td><strong>9 Asphyxia</strong></td>
<td>169</td>
</tr>
<tr>
<td>Overview of Asphyxia</td>
<td>169</td>
</tr>
<tr>
<td>General Findings in Asphyxia</td>
<td>169</td>
</tr>
<tr>
<td>Suffocation</td>
<td>170</td>
</tr>
<tr>
<td>Strangulation</td>
<td>172</td>
</tr>
<tr>
<td>Mechanical Asphyxia</td>
<td>178</td>
</tr>
<tr>
<td>Drowning</td>
<td>178</td>
</tr>
<tr>
<td><strong>10 Poisoning</strong></td>
<td>185</td>
</tr>
<tr>
<td>Overview of Intentional Poisonings</td>
<td>185</td>
</tr>
<tr>
<td>Evidence and History</td>
<td>186</td>
</tr>
<tr>
<td>Diagnostics</td>
<td>188</td>
</tr>
<tr>
<td>Agents Used in Animal Poisonings</td>
<td>190</td>
</tr>
<tr>
<td>Summary</td>
<td>204</td>
</tr>
<tr>
<td><strong>11 Neglect</strong></td>
<td>207</td>
</tr>
<tr>
<td>Introduction</td>
<td>207</td>
</tr>
<tr>
<td>Environment Examination</td>
<td>208</td>
</tr>
<tr>
<td>Malnutrition: Improper Feeding</td>
<td>209</td>
</tr>
<tr>
<td>Malnutrition: Starvation</td>
<td>210</td>
</tr>
<tr>
<td>Animal Hoarders and Animal Sanctuaries</td>
<td>219</td>
</tr>
<tr>
<td>Puppy Mills</td>
<td>222</td>
</tr>
<tr>
<td>Heat Stroke</td>
<td>223</td>
</tr>
<tr>
<td>Hypothermia</td>
<td>226</td>
</tr>
<tr>
<td>Embedded Collars</td>
<td>230</td>
</tr>
<tr>
<td>Demodicosis</td>
<td>230</td>
</tr>
<tr>
<td>Untreated Injuries</td>
<td>230</td>
</tr>
<tr>
<td><strong>12 Sexual Abuse</strong></td>
<td>233</td>
</tr>
<tr>
<td>Overview</td>
<td>233</td>
</tr>
<tr>
<td>Considerations for Crime Scene Investigation</td>
<td>234</td>
</tr>
<tr>
<td>Assessment of Videos</td>
<td>235</td>
</tr>
<tr>
<td>General Examination Findings</td>
<td>235</td>
</tr>
<tr>
<td>Examination Procedures</td>
<td>236</td>
</tr>
<tr>
<td>Suspicious Examination Findings</td>
<td>238</td>
</tr>
</tbody>
</table>
# Table of Contents

Zoonotic Disease 238  
Evaluation and Differentiation of Human and Canine Sperm and Semen 239

13 **Animal Fighting** 243  
   Overview of Dog Fighting 243  
   The Fighting Dog 243  
   Fighting Classifications 245  
   The Fight and The Dog Fighting Pit 245  
   Training and Fighting Paraphernalia 246  
   Canine CODIS: Fighting Dog Combined DNA Index System 247  
   Examination of the Animal 247  
   Cockfighting 250  
   Other Types of Animal Fighting 252

14 **Postmortem Changes and the Postmortem Interval** 255  
   Overview 255  
   Examination of the Body 255  
   Determining the PMI: Examination of the Crime Scene 269

15 **Forensic Entomology: The Use of Insects in Animal Cruelty Cases** 273  
   Introduction 273  
   Principles of Medicolegal Entomology 274  
   Cutaneous Myiasis: The Insect Colonization of Live Animals 276  
   Other Uses for Insects in Animal Cruelty Investigations 278  
   Collection of Insect Evidence 279  
   Summary 284

16 **Large Animal Cruelty** 287  
   Introduction 287  
   Assessing Pain and Suffering 287  
   Investigation of Cruelty 288  
   Starvation 289  
   Body Condition Scoring 290  
   Evaluation of Water 291  
   Hoof Care 291  
   Dental Care 294  
   Shelter 296  
   Accidental and Non-Accidental Injuries 297

17 **Avian Cruelty** 299  
   Pet Bird Cruelty 299  
   Avian Abuse Defined 299  
   Intentional Abuse 300  
   Unintentional Abuse 301  
   Veterinary Abuse 302  
   Poultry Cruelty 303  
   General Exam Findings in Pet Bird and Poultry Cruelty 307
Appendices

1. Colorado Veterinary Medical Association Protocol for Mandatory Reporting of Animal Cruelty and Animal Fighting 311
2. Case Status Form 318
3. Evidence Log/Chain of Custody Form 319
4. Photo Log 321
5. Animal Cruelty Forensic Supplies 322
6. Clandestine Burial Crime Scene Checklist 324
7. Veterinarian Crime Scene Checklist 326
8. Deceased Animal Intake Questionnaire 327
9. Live Animal Intake Questionnaire 328
10. Live Exam Form 329
11. Necropsy Exam Form 330
12. Fixed Tissue List for Histopathology 333
13. Canine Body Condition Score for 1–9 and 1–5 Scales 334
14. Feline Body Condition Score for 1–9 and 1–5 Scales 335
15. Dog Diagram: Condition of Skin, Haircoat, and Nails Form 336
16. Cat Diagram: Condition of Skin, Haircoat, and Nails Form 338
17. Cat Skeleton Lesions Form 340
18. Dog Skeleton Lesions Form 341
19. Cat and Dog Skeletal Inventory Form 342
20. Live Exam Report Template 344
21. Necropsy Report Template 345
22. Forensic Medical Protocol for Large Scale Cases 348
23. Large Scale Medical Supply List 352
24. Large Scale Live Animal Exam Form 356
25. Rapid Bird Exam Form 358
26. Botany Field Report 359
27. Dog Bite Investigation Worksheet 360
28. Basic Small Pet Bird Care in Temporary Shelters 366
29. Tuft’s Animal Care and Condition Scale for Dogs 368
30. Tufts Animal Care and Condition Scale for the Environment 370
31. Dogfighting Terminology 372
32. Cajun Rules for Dogfighting 374
33. Dogfighting Scar and Injury Chart 376
34. Cockfighting Scar and Injury Chart 377
35. Examples of Vitamins, Drugs, and Medical Supplies Used in Dogfighting 378
36. Entomology Form for Animal Cases 380
37. Webliography 383

Index 387

Companion Website

The book is accompanied by a companion website, accessible at

www.wiley.com/go/vetforensics

The website includes forms and checklists to download and use in forensics investigations.