

# Contents

Introducing the Cat	6
---------------------	---

## CHAPTER 1

### *Evolution & Domestication*

Where Did the Cat Family Come From?	14
The Emergence of Modern-day Cat Lineages	16
The Domestic Cat & Its Cousins	18
From Wild to Domestic	20
Human Meets Cat	22
Cats Cross the Threshold	26
Cats Begin to Change Their Stripes	32
How Has Evolution Changed the Cat?	34

## CHAPTER 2

### *Anatomy & Physiology*

The Feline Skeleton & Muscles	38
How Cats Move & Balance	40
Skull & Dentition	42
Paws & Claws	44
Skin & Coat	46
Physiology	48
Vision	52
Hearing	56
Touch	58
Smell	60
Taste	62
Nutrition & Drinking	64
Genetics	66



## CHAPTER 3

### *Ecology, Social Organization & Behavior*

Feline Ecology	76
Cat Colonies & Home Ranges	78
Social Organization of Pet Cats	80
Olfactory Communication	82
Tactile Communication	84
Visual Communication	86
Vocal Communication	88
Courtship & Mating	90
Motherhood & Nursing	94
Kitten Development	96
Socialization & Play	98
Development of Adult Patterns	102
Hunting & Predation	104
Cognition & Learning	108



CHAPTER 4

*Cats & People*

---

Attitudes to Cats	112
Cats in Culture	116
The Cat–Human Relationship	120
How Cats Interact With Us	124
Cat–Human Vocalizations	126
How We Interact with Cats	128
Getting the Most out of Interactions with Your Cat	130
The Benefits of Cat Ownership	132



CHAPTER 5

*The Modern-Day Cat*

---

The Price of Success	136
Pet Cats & Territory	138
Indoor Cats	142
Problem Behavior in Pet Cats	146
Problems with Feral & Stray Cats	152
Cats in Shelters	154
Modern Cat Health	156

CHAPTER 6

*A Directory of Cat Breeds*

---

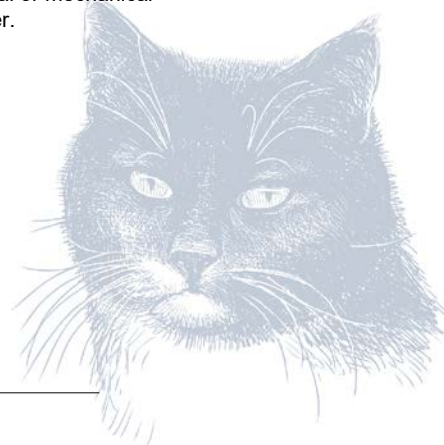
Introduction to Cat Breeding	160
The Directory	166

*Appendices*

---

Glossary of Medical Terms	214
Bibliography	216
Index	220
About the Author / Acknowledgments	223
Picture Credits	224





## Introducing the Cat

---

**T**he domestic cat is a familiar face in the modern world and, for many people, a comforting household presence. In numerous countries it is now the pet of choice, whether a “moggy” of unknown background or one of the pedigreed pure breeds now available. As pets, some cats enjoy pampered lives of luxury with everything they could desire, while others are simply provided with a bowl of food at the end of the day and a place to curl up. Not all domestic cats are pets, however. Despite 10,000 years of association between cats and people, countless domestic cats still live much more independently of humans, hunting for survival just like their wildcat ancestors.

Aloof, affectionate, serene, endearing, exasperating, elegant, enigmatic, and even savage—the cat has been described in many ways throughout its shared history with humankind. It is most notorious, however, for its independence, a quality that some may scorn but others truly admire. And yet it is partly this independence that has enabled the cat to become one of the most popular pets today, in some countries outranking even the dog as the favorite companion animal. People look for a pet that is easy to care for, ideally one that can adapt to living in more confined spaces, keep itself clean, and remain relatively undemanding, while still providing companionship. A tall order, but the domestic cat has most definitely risen to the challenge.

The very first cats befriended by humans were true wildcats—opportunists—that gradually found their way into our homes and hearts, then, over countless generations, evolved to become domesticated. As the domestic cat slowly but surely colonized the world, it was both worshipped and persecuted before reaching the heights of popularity the species enjoys today. It hasn’t been an easy journey, and cats still face challenges, with many of them leading unnecessarily stressful lives. On the face of it, modern-day pet cats might appear to lead charmed lives, with warm homes, nutritious food, and medical care. In return, their owners are often (though by no means always) rewarded with affection, company, and, in some cases, a deep and lasting bond. However, taking cats into

**Right:** *Now one of the world’s most popular pets, many—but by no means all—domestic cats have learned to trust humans.*





our homes and fitting them into our busy lifestyles can sometimes be a lot more straightforward for the owners than for their cats, a relationship that is explored in Chapter 4.

Cats are masters of adaptability—if they can find food and shelter they will carve out a niche, with or without the company of other cats or people. This adaptability has been the secret to their successful spread; today domestic cats can be found worldwide in locations as disparate as the Australian outback and high-rise city apartments.

In the relatively short time that cats and humans have lived together, cats have learned to communicate with us, adapting their own species' signals for us to understand. We humans have worked less hard at the relationship, assuming that cats will simply adjust to whatever constraints we impose on them, from restricting their movements to expecting their peaceful cohabitation and interaction with other pets, including other cats, as well as with us. When Paul Leyhausen wrote the first scientific book on cat behavior in 1956, people began to think more about the social needs of cats. Since then, science has revealed much more about the behavior and social organization of cats, but much of this knowledge still needs to be put to practical use. Learning about cats, recognizing their needs, and adapting our lifestyles and homes accordingly provides these pets with the best chances for a stress-free life, and gives their owners the opportunity to understand and enjoy their cats to the full.

**Right:** *It is harder to find homes for black cats and kittens than for cats of other colors—sadly, partly because it is more difficult to see their features in photographs and “selfies.”*

**Below:** *Far from their wildcat origins, many domestic cats today live in relatively small spaces, and most can adapt to this, given enough stimulation and enrichment (see Chapter 5).*







## CATS BY DESIGN

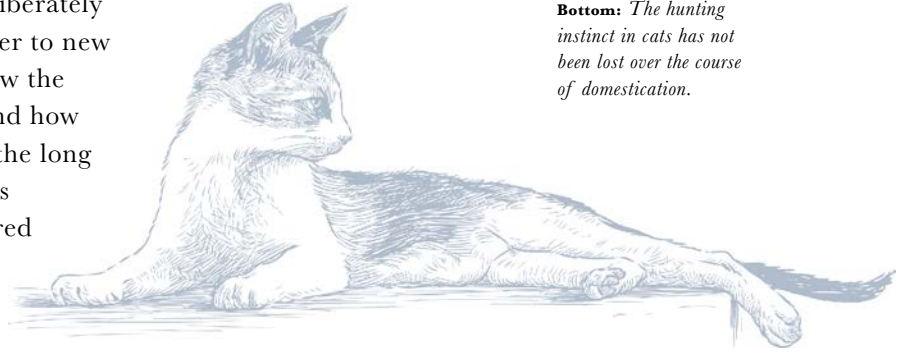
---

Compared to our ancestors, we now appreciate cats for very different reasons. Valued for their hunting skills, with their companionship a welcome bonus, appearance was probably relatively unimportant to those humans who first welcomed cats into their lives. Nowadays the reverse is true—many cats are deliberately bred for their looks, and people are prepared to pay a high price for a cat with an impressive pedigree. Even non-pedigree housecats are often selected more for their appearance than their personality—rescue shelters, for example, report that black cats are harder to rehome than those with other coat colors.

Cat breeding has grown enormously in popularity, aided by advances in scientific knowledge of genetics and inheritance. Breeders are now able to achieve and perpetuate new variations in coat color, type, and pattern, along with body shape and size. “Cat fancy” (see Chapter 6) is now big business and care needs to be taken that future breeds are healthy ones and that welfare is not compromised for the sake of novelty.



In contrast to the prized “mousers” of old, hunting by cats nowadays is generally frowned upon. Unfortunately, cats themselves haven’t quite received that message yet and the urge to hunt persists. Hunting is still a necessity for the survival of the millions of domestic cats that live, whether or not through choice, independently of people. Even for well-fed pet cats the instinct remains. Modern-day cats attract some bad press regarding the potential effects of their predation on local wildlife populations, an issue that is discussed in Chapter 3. The problem, however, is of our own making, and should come as no surprise. For centuries, humans have deliberately introduced an opportunistic skilled hunter to new lands populated with abundant prey. How the consequences of this can be managed and how it affects the cat–human relationship in the long term remains to be seen. It will doubtless be another chapter in the highly checkered history of the cat and its relationship with humankind.



**Bottom:** *The hunting instinct in cats has not been lost over the course of domestication.*



## ABOUT THIS BOOK

Many people profess to love them, while others vehemently dislike them, but either way, everyone seems to have something to say about cats. With so many opinions it can be hard to separate truth from hearsay, which may account for the plethora of myths and stories that have surrounded the cat during its evolution from wild to domesticated.

This book follows that evolution, sorting some of the facts from the fiction along the way. It aims to provide a comprehensive insight into what makes cats so unique and endlessly fascinating, together with more recent scientific findings on cats and how they fit into the human world.

The first chapter traces how the cat family evolved from the very earliest carnivorous mammals and describes how the wild ancestors of the domestic cat gradually became associated with humans, from the humble beginnings of their relationship in the Fertile Crescent around 10,000 years ago to the eventual worldwide spread of the cat.

Chapter 2 assesses the anatomy and physiology of the cat and its impressive physical adaptations to its natural life as a carnivorous predator. It also considers genetics and how, through natural mutations and artificial breeding, cats now appear in such a vast array of forms.

The way cats live—how they communicate with one another and their ability to adopt different forms of social organization—is examined in Chapter 3. This chapter also considers how cats develop, from kittenhood through to adulthood.

The relationship of the cat with people is covered in Chapter 4, including the feline's changing fortunes

at the whims of humankind. How cats have adapted their language to communicate with us and the ways in which we reciprocate are also examined, along with factors affecting the quality of the cat–human relationship.

Chapter 5 considers the challenges facing the modern cat, including boredom, obesity, and living longer in an overcrowded world. The consequent problems that arise and how they can be solved and avoided by pet owners are discussed, along with what the future might hold for the domestic cat.

Finally, Chapter 6 enters the realm of cat breeding, explaining what cat breeds are and how new ones are developed, before showcasing a selection of those breeds that are most widely recognized by the various cat-fancy organizations around the world. Cats have adapted to our world and, with fresh insight into their behavior, this book seeks to open our hearts and minds to these clever, curious, and complex creatures.

**Below:** *Flexible in so many ways, the domestic cat has always been an intriguing subject of study.*





# Index

---

## A

Abyssinian 66, 163, 164, 168  
 aggression 151  
 agonistic sounds 88  
 agouti 70  
 allergies 51, 133  
 American Bobtail 192  
 American Curl 191  
 American Shorthair 193  
 American Wirehair 72, 194  
 Ancient Egypt 23, 24, 26–8  
 antifreeze 65  
 art 116–17  
 Australian Mist 189

## B

balance 38, 41, 97  
 Balinese 55, 171  
 bay cat lineage 17  
 benefits of ownership 132–3  
 Bengal 163, 165, 166  
 Birman 68, 195  
 birth 92–3  
 black cats 9, 70, 71, 119  
 Black Death 113  
 black-footed cat 19  
 blotched tabby 33, 70  
 blue eyes 33, 54, 55, 57

body shapes 39  
 Bombay 178  
 brain 49  
 breathing 49  
 breeding 9, 160–5  
 British Shorthair 30, 39, 183  
 bunting 85, 131  
 Burmese 164, 177  
 Burmilla 190

## C

caracal lineage 17  
 cardiovascular circulation 48  
 cat densities 77  
 catnip 61  
 central nervous system 50  
 Chartreux 55, 196  
 Chinese mountain cat 19  
 chattering 89  
 clavicle 38–9  
 claws 15, 44, 45  
 coats  
     agouti 70  
     black 70, 71  
     blotched tabby 33, 70  
     color density 69  
     color dilution 69  
     colors/patterns 9, 32, 68–72  
     hair types 47  
     hairless 72  
     long hair 67, 72  
     mackerel tabby 32, 33, 68, 70  
     orange 33, 71  
     point coloration 69  
     Rex genes 72  
     short hair 67, 72  
     tortoiseshell 71  
     types 72  
     white 71  
     white spotting 68, 71  
     wirehair 72  
 cobby shape 39  
 cognition 108–9  
 cognitive dysfunction syndrome 157  
 communication  
     olfactory 34, 60, 82–3  
     tactile 84–5  
     visual 86–7  
     vocal 73, 88–9, 126–7  
 confrontation 86  
 copulation 91  
     scruffing 46  
 Cornish Rex 47, 72, 186  
 courtship 82, 90

## D

deafness 33, 55, 57  
 declawing 150  
 dentition *see* teeth

Devon Rex 72, 187  
 diet 14, 34, 48, 63, 64–5, 145  
     teeth and 43  
 displacement behavior 103  
 DNA 16, 21, 25, 29, 30, 66  
 dogs 81  
 domestication 20–31, 77  
     effects of 35  
 drinking 65  
 dwarf breeds 39

## E

ear 41, 56, 87, 96, 163  
 Egypt *see* Ancient Egypt  
 Egyptian Mau 197  
 European wildcat 18, 21  
 evolution 14–17, 34, 64  
 Exotic Shorthair 182  
 extreme breeding 162–3  
 eye 52–5, 66  
     blue eyes 33, 54, 55, 57  
     color 54–5  
     heterochromia 55  
     kittens 96  
     night vision 52–3  
     pupil 53  
     shape 55  
     third eyelid 53  
 eye contact 87, 126

## F

facial expressions 129  
feces 83  
Felidae 14, 16  
*Felis catus* 18, 35  
*Felis* lineage 17, 18–19, 21  
feral cats 20, 29, 43, 64, 76, 119, 152–3  
fight or flight response 50  
flehmen 34, 61, 82, 91, 97  
foliage 145  
food *see* diet  
foundations breeds 162  
free-ranging cats 76

## G

gait 40–1  
genetic drift 31  
genetic testing 164  
genetics 66–73  
  behavior and 73  
  carriers 67  
  coat colors/patterns 68–72  
  DNA 16, 21, 25, 29, 30, 66  
  lethal genes 73  
  socialization and 122  
genome sequencing 34, 35, 66  
gestures 129  
glands 47, 83  
grass 145  
grooming 62, 102  
  mutual 84  
group-living cats 77  
  social organization 78–9

## H

hair length 67, 72  
hair types 47  
hairless cats 72

handedness 45  
Havana 172  
hearing 56–7, 96  
heart 39, 48  
Hemingway, Ernest 44  
Herodotus 27  
heterochromia 55  
home ranges 79  
hunting 10, 26, 54, 57, 59, 104–7, 109  
hybrid vigor 165

## I

immune system 51  
inbreeding 164  
indoor cats 57, 142–5  
induced ovulation 90  
introducing a new cat 141

## J

Japanese Bobtail 198  
jaw 42, 43  
jungle cats 19, 24, 165

## K

kittens 55, 59, 60, 78–9, 93  
  development 96–103  
  habituation 121  
  nursing 94–5  
  play 99–101  
  socialization 98–9, 120–3  
  suckling behavior 94  
  weaning 95  
kneading 125  
Korat 30, 199

## L

landing on their feet 40  
LaPerm 200  
learning 108–9  
leopard cats 17, 24, 165  
leopardus lineage 17

lilies 145  
literature 114, 118  
locomotion 40–1, 97  
long hair 67, 72  
lynx lineage 17

## M

mackerel tabby 32, 33, 68, 70  
Maine Coon 201  
*maneki-neko* 117  
Manx 38, 73, 161, 202  
mating 91–2  
  calls 88  
matriarchy 78–9  
miacids 14, 15  
miaow 35, 88, 126–7, 128  
Muhammed 114  
multi-cat household 81, 139–40  
mummification 27  
muscles 39

## N

Nebelung 203  
neighborhood relations 81  
nervous system 50  
neutering 136–7, 153  
new breeds 162  
night vision 52–3  
North African wildcat 19, 21, 24  
Norwegian Forest Cat 47, 205  
noses touching 85

## O

obesity 156–7  
object permanence 109  
obligate carnivore 14, 64  
Ocicat 176  
older cats 157

olfactory communication 34, 60, 82–3  
orange cats 33, 71  
Oriental Shorthair 162, 173  
outcrossing 165  
overpopulation 136, 153  
ovulation 90

## P

pacing gait 40–1  
panthera lineage 17  
paws 44, 58  
peripheral nervous system 50  
Persian 43, 47, 55, 118, 162–3, 164, 181  
personality 122–3  
pheromones 47, 61, 148  
physiology 48–51  
play 99–101, 131, 143–4, 157  
point coloration 69  
polydactyly 44  
predation 28, 107, 119  
pregnancy 92  
*Proailurus* 15  
problem behavior 146–51  
progressive retinal atrophy 164  
protein 64–5  
proverbs 115  
*Pseudaelurus* 14, 15, 16  
puma lineage 17  
purring 89, 127

## R

Ragamuffin 207  
Ragdoll 21, 163, 206  
rats 22, 28, 107, 113  
reproductive cycle 91  
respiration 49

righting reflex 40  
 roaring 89  
 rolling 86  
 rubbing 85, 125  
 Russian Blue 162, 204

*S*

sabertooths 15  
 sand cat 18, 65  
 Savannah 165  
 scent glands 47, 83  
 Scottish Fold 163, 184  
 scratching 45, 83, 150  
 scruffing 46  
 sebaceous glands 47  
 Selkirk Rex 185  
 sexual maturity 90  
 shelters 9, 154–5  
 ships 28, 29, 32, 33  
 short hair 67, 72  
 Siamese 30, 39, 73, 161, 163, 164, 170  
 Siberian 133, 208  
 silent miaow 126  
 Singapura 179  
 single-cat households 80  
 skeleton 38–9  
 skin 46, 83  
 skull 42, 163  
 sleep 51, 103  
 slow blink 130  
 smell 34, 60–1  
     communication and 82–3  
*Smilodon* 14, 15  
 Snowshoe 175  
 social organization  
     group-living cats 78–9  
     pet cats 80–1  
 socialization 98–9, 120–3  
 Sokoke 209  
 solitary living 77  
 Somali 162, 169

species hybrids 165  
 Sphinx 72, 188  
 spine 38–9, 40, 73  
 spraying 82, 149  
 stray cats 76, 152–3  
 stress 49, 147–8  
 stroking 129  
 stropping 45  
 sweat glands 47

*T*

tabby 28, 32, 68, 70  
     blotched 33, 70  
     mackerel 32, 33, 68, 70  
     name 21  
 tail 38, 73, 87, 124  
 talking to cats 128  
 taste 62–3  
 taste preferences 63  
 teeth 14, 15, 22, 42–3  
 temperature receptors 58  
 temperature regulation 47  
 territory 138–41  
 Thai 69, 174  
 thermoregulation 97  
 toes 44  
 toileting 103  
 tongue 62  
 Tonkinese 55, 164, 180  
 tortoiseshell 71  
 touch 58–9  
     tactile communication 84–5  
 touching noses 85  
 toxoplasmosis 152  
 Toyger 167  
 toys 101, 143–4  
 trade 28, 29, 32, 33  
 training 109, 129  
 trilling 88, 127  
 Turkish Angora 55, 210  
 Turkish Van 55, 211

*U*

urine 82

*V*

Vikings 29, 33, 112  
 vision *see* eye  
 visual communication 86–7  
 vocal communication 73, 88–9  
     miaow 35, 88, 126–7, 128  
 vomeronasal organ 34, 60–1

*W*

water requirements 65  
 weaning 95  
 whiskers 59  
 white cats 32, 33, 55, 57, 71  
 white spotting 68, 71  
 wildcats  
     African/Asiatic 19, 21, 39  
     coat 68  
     domestication 20–31, 35, 77  
     European 18, 21  
     North African 19, 21, 24  
 wirehair 72