

Chapter 1

Leaping into Leopard Geckos

In This Chapter

- ▶ Looking at geckos worldwide
 - ▶ Focusing on leopard geckos
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L*eopard Geckos For Dummies* is for people interested in leopard geckos; essentially anyone who is fascinated by this unique, attractive species. You may be a parent buying your child his or her first reptile pet and want to supply a book to go with that pet. Maybe you're a kid buying this book with your own hard-earned cash. Perhaps you just bought a leopard gecko and need some information on getting set up as well as general care information. Or, maybe you already have a leopard gecko or two and just want a refresher on the best way to care for them. You may still be in the decision-making stage and aren't sure if leopard geckos are the right pets for you and your family. If any of the above applies to you, keep reading!

First Things First: Using This Book

Leopard Geckos For Dummies is a reference, so you don't have to read it in order from start to finish. Begin with Chapter 4 if you need basic set-up information, flip to Chapter 6 if you're trying to understand leopard gecko behavior, or head to Chapter 2 if you're still on the fence about adding a leopard gecko to your family. (Although those of you who prefer to start at the beginning and read until you reach the back cover are welcome to do so. I'll never tell.)

As you read, keep an eye out for text in *italics*, which indicates a new term and a nearby definition — no need to spend time hunting through a glossary. You'll also run into a few sidebars (the occasional gray box); although the information in the sidebars is good, it's not essential to the discussion at hand, so skip 'em if you want to.

While reading *Leopard Geckos For Dummies*, be on the lookout for these icons sprinkled here and there:



These are great time or money-saving ideas.



This is basic information for caring for your leopard gecko.



This is important stuff that can affect your leopard gecko's health or well-being.



Here is some advanced information that may interest you.

This small book is crammed full of information on leopard geckos, from how to decide whether this is the right pet for you, to choosing the right leopard gecko, caring for him, and even how to breed that pet in the future. This book can be your reference for many years to come. Just keep reading.

Taking a Look at Gecko Ecology

Geckos are lizards. They have four legs and are primarily (but not entirely) insectivores (they eat insects). However, those are about all the generalizations that can be made. Some geckos are ground dwellers while others live in trees. A few species of geckos live in arid deserts while others prefer more humid tropical environments. Most eat insects, but some also eat fruits and nectars. Many geckos are known for having sticky feet and the ability to walk straight up glass, but not all have this ability. Some geckos have immovable eyelids while others do not. Geckos are amazing lizards, and it's this variety that makes them so fascinating.

Charting gecko evolution

Geckos belong to the family scientists call Gekkonidae. Ancestors of today's geckos thrived during the Jurassic period but unfortunately, fossils of such tiny creatures from that era are hard to find so their true evolution during that era is unknown. However, fossils have been found from the Eocene period (beginning 50 million years ago) that showed that the ancestors of today's geckos were

adapting to many different habitats. In addition, those changes were occurring as those habitats themselves were changing. During the beginning of the Eocene period, Australia and South America were still one huge continent. It's amazing to realize that the ancestors of today's geckos survived such world-changing events as the splitting and relocation of two major continents.



The *family* of geckos, Gekkonidae, belongs to the *order* (group) of lizards called Squamata, and the *class* called Reptiles.

Mapping geckos around the world

Geckos today are found in North America, South America, Central America, Africa, the Mediterranean regions, Madagascar, Asia, the Far East and many islands in the Pacific. Some of these populations evolved in those locations, but many more were transported there as people themselves traveled more. Sailing ships and the introduction of world trade spread many geckos to the four corners of the world. Some of these reptilian travelers died during the voyage, of course, and many others died in the new locations. But the ability of geckos to adapt to new conditions allowed enough to survive to establish new populations.

Today, geckos can be found in many different places:

- ✓ Tokay geckos are from Southeast Asia; north through Japan and up to Korea. Introduced populations have been seen in Florida.
- ✓ Tropical geckos (referring to their common name) originated in South Africa, and have been introduced and are thriving in Central America and other parts.
- ✓ Mediterranean geckos are from Northern Africa and the Mediterranean region, and have been introduced and are thriving in North America and Mexico.



Reptiles are identified by a scientific name (such as *Eublepharis macularius* and a common name, leopard gecko. The scientific name is used for accuracy, and the common name is used for ease of pronunciation (and remembering!).

Just as geckos can be found all over the world, they can be found in a variety of habitats and climatic conditions. The banded geckos of the southwestern United States live in extremely arid deserts, just as the leopard geckos do in Pakistan and Afghanistan. Yet the green tree geckos of New Zealand live in densely forested areas with high humidity.

Understanding different gecko species

All geckos have a similar body type. The legs are short, the body cylindrical but squat, and the skin has fine scales that feel smooth to the touch. Many geckos species may also have some *granular* (bumpy) scales that are small smooth bumps while others many have scales that are *tubercles* (more pointy) or *keeled* (partially folded). The head is usually large in comparison to the body although some species (such as day geckos) have a more streamlined head.

Geckos are visual creatures, using their eyes to identify food and potential predators. Although many geckos will smell food before eating it, vision seems to be by far the most important sense. Those geckos who are *diurnal* (active during the day) have round pupils in the eyes, and those species that are *nocturnal* (active at night) have pupils with a vertical slit. The colors of the eyes, the irises, are often marbled in appearance, giving a very exotic look to the eyes. Some gecko species have moveable eyelids, but most have a transparent, fused eyelid that can protect the eye from minor injuries.

Geckos' feet have long been a source of amazement. The ability of many gecko species to walk straight up a glass window (or side of a glass cage) is almost unbelievable. That ability comes from adhesive pads on the toes of the feet. When magnified, the pads can be seen as bristles made of keratin (like our fingernails), and the end of each bristle is split. These split bristles allow the gecko to adhere to a variety of surfaces, including glass, and to move under overhanging surfaces, such as under the eaves of houses. Geckos that are ground dwellers, such as leopard geckos and Madagascar ground geckos, have fewer of these bristles than do *arboreal* (live in trees) geckos, such as tokay geckos and green tree geckos.

Many geckos have some other interesting characteristics. For example, one species of the New Caledonian geckos and several Australian geckos will, when threatened, spray a foul-smelling liquid from his tail. There appear to be tiny glands between the segments of the tail, and the secretions can be sprayed as far away as 30 centimeters. Quite a shock to the predators hoping to make a meal out of these small geckos!

Focusing on Leopard Geckos

Leopard geckos belong to one of the most primitive forms of gecko, belonging to the subfamily Eublepharidae. Except for one species, the geckos belonging to this family are *terrestrial* (living on the ground) rather than *arboreal* (above ground in trees or on houses). Leopard geckos and others in this family have moveable eyelids (although the lower lid moves upwards instead of the upper lid moving down). Another shared and notable characteristic is the fat, whorled, detachable tail that will be discussed a little later in this chapter. Scientists may have classified the leopard gecko as a primitive species of gecko, but that really isn't saying that something is wrong with them; instead, it is simply saying that while other species may have continued changing or evolving, leopard geckos are perfect just the way they are. As you can see in Figure 1-1, they are attractive, hardy, and well-adapted to surviving in their native habitat.

Thriving in a hostile land

The natural homeland of leopard geckos centers in Afghanistan, into Iraq, Iran and Pakistan, and into northwestern India. There are many mountain ranges in this area — some estimates state that 49 percent of Afghanistan is mountainous — but leopard geckos are found primarily in the arid and semiarid deserts and plateaus. In the western and southern regions of Afghanistan where deserts flow east into Pakistan and west into Iran, there is what the residents call the “wind of 120 days.” In June through September, the wind blows almost constantly, bringing in intense heat, drought and sand storms. Whirlwinds are common, with velocities up to 175 mph (282 kilometers per hour).

In these harsh unforgiving conditions, leopard geckos thrive. To protect themselves from heat, sandstorms and drought, the leopard geckos hide and sleep during the day under rocks or other thick, heavy debris such as broken concrete, overhanging ledges or hard packed dirt or manmade objects. The sand and dirt under these rocks and debris are cooler than those exposed to direct sunlight, and so keep the geckos from overheating and dehydrating. In addition, if there is any moisture at all left in the ground, it will condense on the underside of the rocks where the geckos can lap it up.

After hiding and sleeping during the hot daylight hours, leopard geckos will come out of their hiding places at night to forage and hunt. Their prey are small insects and worms. Leopard geckos are also on the menu, though, and are often the prey of foxes.

Warfare has also taken its toll on leopard geckos. Throughout Afghanistan's history, from ancient times through the present, geckos have faced the horrors of war. Habitat destruction, either through the efforts of people fleeing warfare, or through the actions of warring people, has caused great harm to leopard geckos. However, as this book is written, leopard geckos are not an endangered species, primarily because of the efforts of captive breeding.



Figure 1-1: Leopard geckos are an attractive, calm, hardy pet species lizard.

Finding a place in captivity

Leopard geckos have been bred in captivity for decades, becoming one of the first truly domesticated species of lizard. Along with dogs, cats, parakeets and goldfish, leopard geckos have found a place in both our homes and our hearts.

History doesn't say when leopard geckos were first kept as pets; perhaps a young child in Afghanistan turned over a rock and found a pretty yellow, black-and-white lizard and brought him home. In

more recent history, leopard geckos have been bred in captivity for many generations, producing calm lizards well adjusted to captivity. Since the early 1990s, leopard gecko breeders have been producing a variety of colors and color patterns, including yellow, orange, white, black spots, black stripes, jungle patterns and more.

Besides their attractive appearance, the appeal of leopard geckos also comes from their calm demeanor as adults (babies can be feisty) and ease of handling. Rarely do leopard geckos bite, and if they do, the bite rarely breaks the skin. When held gently in the hand, leopard geckos settle down quickly and will relax and even appear to enjoy brief gentle petting.



Leopard geckos accept handling well, but will try to bite if held too tightly. Hold the gecko gently, cupping your hand around the gecko's body.

Leopard geckos can also be easy to care for when their needs are understood, and their cages can be an attractive addition to their owner's home. Breeding can also be relatively easy, and baby leopard geckos are a thrill to watch. To be honest, other than being responsible for another creature's well-being, there just aren't many downsides at all to owning a leopard gecko!

Examining a Leopard Gecko

Physically, leopard geckos are amazing little lizards. Their entire bodies are geared to survival in a harsh environment, and obviously they have been very successful.

Seeing those wonderful eyes

As was mentioned earlier in this chapter, leopard geckos are very visual creatures. Their sense of sight is very important to their ability to hunt and obtain food. The movement of their prey (insects) gets the leopard gecko's attention first, the movement is tracked and the insect identified as either prey or not prey. The leopard gecko's eyes are well suited to this task. As nocturnal hunters, leopard geckos have vertically slit pupils (see Figure 1-2) that allow more light into the eye when there is less light available.

Another adaptation that helps them see in the dark is that many of the cones in the eye (which allow the eye to see color) have over time turned into rods. Although scientists are unsure as to whether

leopard geckos (and other nocturnal geckos) are able to see color — or how much color they can see — it is obvious from their behavior that nocturnal geckos do see movements, outlines and shapes even in very low light situations.



Figure 1-2: Gecko eyes are amazing; much like cats' eyes.

Leopard geckos have moveable eyelids. Although most gecko species today have immovable eyelids (their eyes are always open - like snakes) leopard geckos have retained the ability to close their eyes. However, the eyelid that closes is the bottom one; it moves upwards, whereas almost every other creature on the planet that closes its eyes has an upper eyelid that closes.

Leopard geckos can also lick their eyes. You may at some point be watching your gecko when all at once a pink tongue will appear and give a quick swipe over the surface of an eye. Experts debate why leopard geckos do this. Some say it's a cleaning mechanism; the tongue is cleaning debris off the eye. Other experts scoff at that, stating that the moveable eyelid does that. These experts say the gecko is obtaining moisture from the eye. They can continue their debates. What is interesting is the fact that leopard geckos can actually lick their eyes.

Checking out those amazing feet

Arboreal geckos are known for their ability to run straight up a vertical surface or hang from the underside of the eaves of a house. These abilities (which make those geckos wonderful escape artists when kept as pets) are due to their feet. Numerous small bristles made from keratin line the feet, and these bristles enable the gecko to cling to just about any surface.

Leopard geckos do not have the vast numbers of clinging bristles that arboreal geckos have. As terrestrial geckos they don't need those bristles; instead, leopard gecko feet have evolved to allow the animal to cross sandy soil easily and dig under rocks. Leopard gecko feet have shorter bristles that lay sideways, and have shorter more cylindrical toes with tiny claws. So just as leopard gecko eyes have evolved differently than many other gecko species, so have their feet.



Many terrestrial animals, including leopard geckos, do not have an inborn fear of falling. Nor, with his feet, can your leopard gecko keep himself from falling. When handling a leopard gecko, you must keep in mind that he has no fear of falling so you can protect him from a harmful fall.

Discovering the unique tail

The leopard gecko's tail is narrow toward the hips, round and fat in the middle and tapering toward the end. It is also ringed, making it look like several rings stacked together.

A leopard gecko's tail serves many purposes. First and foremost, it is a counter balance to the head. A leopard gecko's head is quite large in proportion to the rest of the body, especially if you compare it to a mammal. Look at a dog's head in proportion to its body and then look at a leopard gecko. The leopard gecko's head is big; but this allows it to have larger jaws and so catch larger insects, and as a result, get more food and survive. The large tail acts as a counter balance, enhancing the gecko's movements.

The large tail also serves as a fat repository. When food is plentiful, the tail will become larger. When food is scarce, the leopard gecko's body will metabolize the fat stored in the tail to nourish the body. A healthy gecko will have a fat tail that is in proportion to his body.

The tail is also used in communication. This will be discussed in more detail in Chapter 6, but the tail is used to convey emotion, to signal a readiness for breeding, and for self-protection.

Leopard gecko tails are *autotomous*, which means the tail can be dropped or detached from the lizard's body. This will be discussed in more detail in Chapter 7. Dropping the tail is natural, and can serve as a life-saving tool for your gecko in the wild (distracting predators), but it can also be a severe shock to your gecko.



Because your leopard gecko's tail can detach, never grab your gecko by the tail or lift him by the tail.

Scanning the body

Leopard geckos are not large lizards, but appear stocky and strong. The body is cylindrical but slightly flattened, almost as if it was originally round, but gravity has flattened it somewhat. The skin is soft with small bumps on the sides and top of the animal. The skin on the underside is very soft without any of the bumps.

The legs come out of the sides of the gecko rather than underneath. The legs are short and made for short dashes or quick bursts of digging rather than outrunning predators. Adult leopard geckos can reach about 9 to 10 inches (23 to 25 centimeters) in length, including the full tail and when held, feel heavy for their size.

Leopard geckos in the wild have a base color of yellow with numerous black spots and splotches on the top and sides of the head, body and tail. Underneath is white. Captive breeding has created a number of other color patterns, including those without any black, white geckos without any black or yellow, or even brighter yellow or even orange markings. Colors will be described in more detail in Chapter 3.

Identifying boys and girls

Leopard geckos as adults are *dimorphic*, which means there are differences between the males and females of the species (see Figure 1-3). Adult males have a proportionately larger head and heavier body than do the females. Males also have a chevron-shaped row of large pores on the belly between the back legs just before the *cloacal* opening (anus). Adult males will also have two pronounced bulges on the tail side of the cloacal opening.

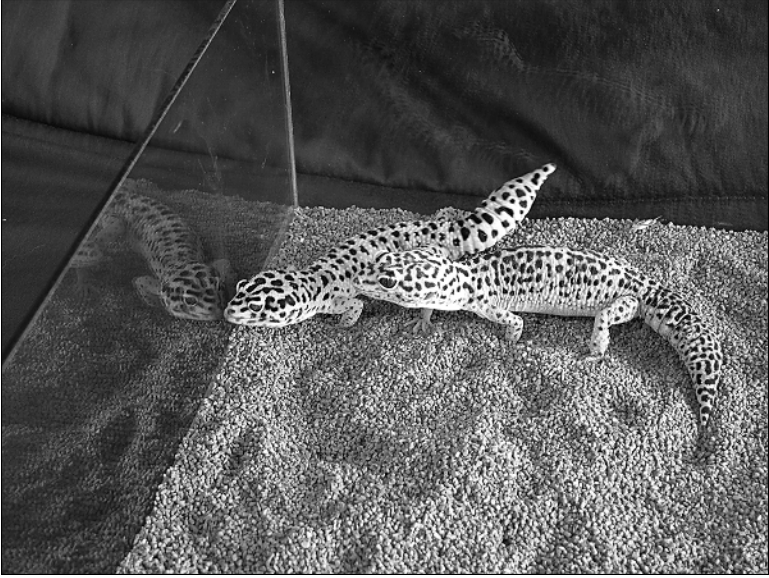


Figure 1-3: Males are heavier bodied than females; often with a fuller tail.
