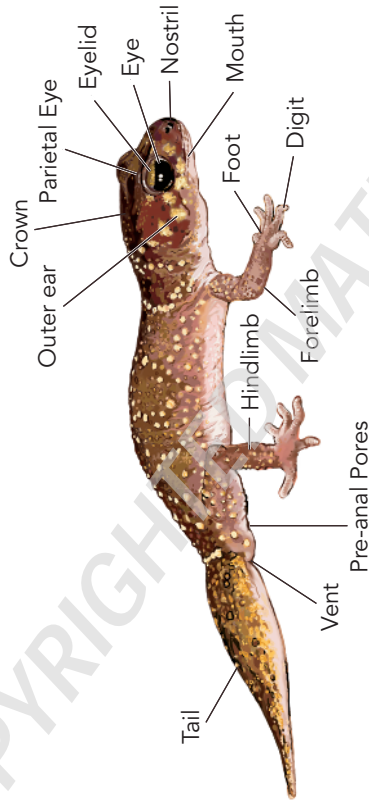


# The Leopard Gecko





## Chapter 1

# What Is a Gecko?



**G**eckos are lizards. When it comes to diversity, lizards are the most successful of the reptiles—nearly 4,000 species have been described.

The family of lizards to which the Leopard gecko belongs is known as the Gekkonidae. This incredibly diverse and successful group of lizards contains more than 800 species, with new ones being described by scientists each year. It's a complicated family with many interesting twists and turns. The level of diversity in this one branch of lizards is so complex and specialized that it can inspire and dazzle. This complexity makes geckos very exciting to study and to keep as pets.

Geckos live in many types of habitats around the world, ranging from searing, dry deserts to lush, cool mountain forests. There are many different types of geckos. The most exciting thing about geckos is their diversity. Some are unique, odd creatures. Some are virtual living jewels.

Geckos have been successful in colonizing the globe because they are able to exploit many types of habitats. Many gecko species have adapted to highly specialized niches in their surroundings, which are called microhabitats. For example, a South African *Rhotropus* species can live exclusively in rock cracks, while another species lives exclusively on the ground. Both species inhabit the same location, each exploiting specific microhabitats.

Some types of geckos are found only in the wild, while others turn up in pet shops or are offered by breeders.

### Is a Lizard Right for You?

- How much space are you willing to devote to your lizard's cage?
- Can you afford the costs associated with lizard ownership, including food, equipment, electricity, and veterinary care?
- If you will have more than one lizard, do you have room to house them separately, if necessary?
- Will you be willing to feed your lizard insects?
- Will you be able to provide your pet with a varied and nutritious diet?
- Is a reptile veterinarian available nearby?
- Will your children and other family members be willing to learn how to properly care for a delicate lizard?
- Who will care for your lizard while you are away on business or vacation?
- Can you commit to caring for a pet who may live for more than 20 years?
- Does the risk of Salmonella present a special threat to anyone in your household (see page 58 for more on Salmonella)?
- Will dogs, cats, or other pets be a threat to your lizard?

## Lizards as Pets

No one knows exactly when human beings began keeping lizards as pets, but we can surmise that the practice started a long time ago. It is clear from both art and scientific literature that humans have been fascinated by lizards for thousands of years. Lizards feature prominently in the artistic and religious traditions of the ancient inhabitants of many areas, including Australia, North America, and Southeast Asia.

In the late twentieth century, people in both the United States and Canada began to develop a strong fascination with keeping lizards as pets. While in the

1960s and 1970s geckos were only rarely seen in pet stores, a small lizard called the Anole was common. These little lizards were sold as pets for children. There was also a trend in the 1950s for women to “wear” Anoles on their clothing. The lizard would be attached to a pin with a small leash. Unfortunately, little was known of their requirements in captivity, and most quickly died.

In the last decade, there has been a huge increase in the popularity of lizards as pets (not as pins) with both children and adults. Consequently, a number of lizard species are now available to the average reptile fan. What these animals need to thrive in captivity is well known, resulting in an ever-increasing number of captive breeding successes. In some cases, this interest in lizards has led to the over-collection of wild specimens, but in others, large-scale captive breeding has led to a decrease in collecting.

Many people like lizard pets because they look like tiny dinosaurs. And all lizards—in fact, all life—can trace their ancestry back to those early reptiles. The natural history of the lizard is fascinating, and it takes us back to nearly the very beginning of life itself.

The gecko of today is the evolutionary descendent of those reptiles who survived beyond the dinosaurs. Geckos have a lot in common with their prehistoric ancestors, and little has changed in their biology over the eons. In fact, geckos are among the most primitive lizards alive today. We can appreciate our pet geckos as not only links to nature, but as links to our own very distant past.

Lizards have very specific care requirements, but, unlike dogs or cats, they can be left for a couple of days without the need for someone to come in and take care of them. Lights can be put on timers, and food items and water can be left in feeding dishes to supply all their needs while you are away. They do not need attention or affection to thrive. They are quiet. They do not smell. They also do not affect people with allergies.



*Many people like lizards because they look like little dinosaurs.*

## How Geckos Are Like Other Reptiles

There are many traits geckos have in common with their reptilian cousins. With the exception of certain species of Sea turtles (which, through a unique mechanism, are able to internally generate heat), all reptiles, including geckos, are ectothermic. This means they are unable to internally regulate their own body temperature the way that mammals and birds can. Instead, geckos rely on outside sources to stay warm or cool, and must move from place to place to keep their body temperature just right. In the early morning, a gecko will seek a warm, sunlit place to heat up his body. When the sun becomes too hot, the gecko will move to a shady area so he can cool down.

### Taste and Smell

Like other lizards, geckos use their tongue to “taste” things in their environment. The long, broad tongue reaches out to pick up molecules from their environment. These molecules are brought back into the mouth, where they come into contact with the vomeronasal, or Jacobson's organ, located above the palate. This organ enables the gecko to determine the exact nature of whatever he has tasted—whether it is an unrecognized insect, an obstacle in his path, or your hand.

### Skin

Geckos and other lizards have an outer layer of skin, known as the epidermis, made up of keratin. This layer is shed in patches as the gecko grows. Many lizards consume the shed skin, while others do not.

They also have an inner layer of skin, known as the dermis, that contains a large number of blood vessels and pigment-producing cells. Both layers of gecko skin are very delicate and tear easily. However, some lizards, such as the Armadillo lizard (*Cordylus cataphractus*), have hard, armorlike skin that offers excellent protection from predators.

## How Geckos Are Different

Despite their reptilian characteristics, you've probably noticed that geckos look somewhat different from other lizards. This is because they have several distinctive traits.



*Geckos have a triangular head and a distinctive neck. Many, but not all, also have adhesive foot pads. This is a Day gecko.*

## Head

One of the easiest traits to spot is the construction of the gecko's head. Geckos tend to have a triangular-shaped head with a discernible neck that attaches their unusual head to their body, while most other lizards have a more streamlined, V-shaped head that seems to flow right into their body.

## Feet

The feet of many geckos have adhesive pads on the bottom that enable the gecko to stick to just about any surface. These pads, called lamellae, are covered with thousands of minute hairlike setae, which are further subdivided into microscopic structures known as spatulae. These unique structures enable geckos to cling to even the smallest irregularities on a climbing surface.

In some species, such as the Tokay gecko (*Gekko gekko*), the lamellae also seem to create suction through the buildup of static electricity. Not all geckos have these pads, but the ones that do can hold on pretty tightly when they want to—even when they are upside down.

## Tail

One of the gecko's most distinctive characteristics is his tail. Rather than being long and narrow, as on other lizards, a gecko's tail is usually narrow at the base,

thick in the middle, and narrow at the tip. Like some other lizards, many species of geckos use their tail to store fat for those times when food is scarce.

Just like certain other lizards, a gecko's tail is autonomous. That means he can detach his tail, usually along preexisting fracture planes in the bones, to distract predators. Special muscles make the detached tail wiggle and writhe, keeping the predator from noticing that the best part of the meal is getting away! Nearby blood vessels are quickly shut down so that blood loss is minimal.

The gecko's autonomous tail is one reason that it's so important to handle geckos carefully—their tails are easily detached when the geckos are roughly handled, even by well-meaning humans.

## Voice

Many gecko species are able to vocalize. Of those that can, the male gecko uses his voice to warn away intruders to his territory and also to attract a mate; the female can also produce sounds. Both sexes may also produce loud alarm calls when captured, hoping to startle an enemy into momentarily letting go. This ability makes geckos a somewhat unique family in the lizard world, because most other lizards are relatively silent.



*Male Tokay geckos have a loud, distinctive call from which their name is derived.*



## The Singing Gecko

Perhaps the most well known of the gecko vocalists is the Tokay gecko (*Gekko gecko*). They can reach 12 inches in length and have a bite to match their impressive size. In addition to being more than willing to bite, they do not release their grip easily. Tokay geckos are also very fast and can climb walls easily.

These geckos quite often move into people's homes in their native Southeast Asia and in their introduced ranges throughout the world, such as southern Florida. The loud, territorial call of the male sounds like "*Tokay! Tokay!*," and has given the species its common name.

Male Tokay geckos are strictly nocturnal, and may repeat this call incessantly, often at approximately 4 a.m.—thereby becoming rather unwelcome alarm clocks.

Some years ago in New York City, pet stores began renting Tokay geckos to people seeking to rid their apartments of cockroaches, which happen to be among the Tokay gecko's favorite foods. However, the lizards' vocal talents soon put an end to this unique trend in urban pest control.

Tokay geckos are still quite common in the pet trade, but you are better off leaving these stocky, aggressive fellows to very experienced hobbyists.

## Eyes

The eyes of the gecko vary depending on the species. Most geckos are nocturnal (active mostly at night) and have pupils that look like vertical slits when viewed in the daylight. These nocturnal geckos have very strong night vision, and those narrow pupils will dilate to encompass nearly the entire eye. A few geckos are diurnal, meaning they are most active during the day. These geckos have round pupils that look somewhat like ours.

The majority of gecko species have eyelids that are fused, and therefore cannot blink, which makes them similar to snakes but different from most other



reptiles. However, some species of geckos—such as the Leopard gecko—do have moveable eyelids.

All geckos actually lick their eye area with their tongue. While scientists aren't completely sure why they do this, many suspect this is the gecko's way of keeping the eyes clean.

## Ears

Gecko ears are another fascinating part of the lizard's anatomy. If you hold certain gecko species up to the light, you can actually see through their ear canals out to the other side! But don't let that fool you into thinking there is not much in there. The gecko ear is complicated, and geckos can hear as well as or better than most other lizards.

Geckos need good hearing to be able to effectively communicate with members of their own species. It's also possible that they use their hearing to avoid predators and when hunting for prey.

## Endolymphatic Sacs

Some species of geckos in the subfamily Gekkoninae, such as the various Day geckos, have large sacs on both sides of their neck. These sacs are reservoirs for calcium. Scientists aren't sure why some geckos have these bulging sacs, but, because they are largest in females and increase in size during the breeding season, it is surmised that they could be used to help female geckos form egg shells. The smaller sacs of the males and nonbreeding females may help in the metabolism of calcium.

## Diet

One characteristic that all geckos share is a penchant for eating bugs. Without exception, all gecko species consume insects and other invertebrates, such as spiders and sow bugs.

Some will eat other foods as well. Day geckos, for example, have been known to drink nectar and lap at rotting fruit as an occasional treat. Larger species, such as the Tokay gecko, will also eat small mammals, nestling birds, frogs, snakes, and other lizards.

## Humans and Geckos

Geckos have lived in close association with humans for a long time. Geckos in various parts of the world can be found cohabitating with humans in their

dwelling. These are not “pet” geckos per se, but rather wild lizards who have wandered into humans’ homes in pursuit of insects. Because geckos are so good at eating bugs, they are welcome in most homes. In fact, in Malaysia, having a Tokay gecko in your home is considered good luck.

Several smaller gecko species, known collectively as “house geckos,” are notorious stowaways on ships and in luggage, and have established themselves far outside their natural habitats. A number of species from Europe, Asia, and the Caribbean, including the Indo-Pacific gecko, the Mediterranean gecko, and the Ashy gecko, have thriving populations in Florida and other southern portions of the United States.

In the southwestern United States, geckos lived closely with Native Americans in a desert environment. These geckos, most likely Banded geckos, were often the subject of Native American art. Their images have survived in the form of rock art, pottery, jewelry, and fetish objects. The stylized representation of a gecko shown on so much Native American art has even come to represent the spirit of the North American southwest.

Because many species are easy to breed in captivity and even easier to keep, geckos, in particular, have grown in popularity. Nearly every pet store in the United States that sells lizards now carries geckos. The Leopard gecko is the most popular gecko pet and is readily available to any lizard keeper.