

All about....Lizards!

By Sammi

When I went on a vacation to Florida, I saw a lot of little lizards called geckos. I thought they were so cute. When I caught one, it scampered up and down my shirt and never fell off. Ever since I came back home to Illinois, I have never forgotten the lizards, and I wondered about them. I knew they were reptiles, and I knew basic facts like they have bones, breathe air, and have scaly skin, but I wanted to know more. As I started my research, I learned that there are a lot more species than I thought. There are over six thousand species, all with unique body parts and behavior! And they live in every continent except the Arctic. In this paper I am going to focus on three different kinds of lizards - the gecko, chameleon, and komodo dragon - and how to keep lizards as pets.

Geckos

The gecko is of my favorite kinds of lizard. I am glad I got to study them. There are about 800 kinds of geckos, and they can grow anywhere from 1 inch to 14 inches. Geckos have small plump bodies with large heads and big eyes. Geckos have very good sight and hearing. Geckos also "talk" a lot. In fact, they got their name by the sound most geckos make: "geck-o geck-o geck-o".

Another interesting thing about geckos is that they must soak up sun before they hunt. Geckos are meat-eaters and eat meats like cockroaches, spiders, mosquitoes, termites, moths, butterflies and other insects. Geckos will not eat insects unless they move. As soon as a gecko catches its prey, it bangs it against a floor or wall to stun it. After eating, a gecko will lick itself, including its eyes, clean.

Geckos are great climbers. They have thousands of microscopic bristles on their feet and toes. The bristles catch into little cracks or crevasses allowing them to run swiftly across ceilings or up and down trees. If they fall, they can righten themselves by using their tail.

Geckos have some ways of defense. Some can change colors to blend into the natural surroundings. Others can detach their tail to distract their enemy while they make a quick escape. Their tail will grow back in time. Sometimes they will grow a double or triple tail!

A gecko's skin does not grow with its body like ours does. So when the gecko grows, it has to shed its skin and grow new skin. The shedding process is called molting. When it is time to molt, some old skin will fall off, but the main bulk of the skin will not. So the gecko will grab the old skin in its mouth, pull it off and eat it! This process can take many days.

When a male gecko is ready to mate, he looks for a

female. When he finds one, he may find trouble- another male gecko. They fight! At first the gecko fight is not exactly what you would call fighting. The two males twitch their tails and make a clucking noise. But then the fight really begins! The two males charge, grabbing their opponent and tearing chunks of flesh off of each other! I find this amazing since they don't have claws or teeth. Although this may sound fierce, the two heroic gecko fighters rarely kill. The loser walks off and the winner "courts" his mate.

A male gecko will "court" before it mates. This shows the female "I am ready to mate". The ceremonial "courting" is calls and dances, followed by the male licking the female and nuzzling her legs. After this they will mate.

Although it may sound weird, some females share nests. Here they will lay their two eggs. The eggs are soft at first and then they harden. The eggs are sticky on the outside. Five to eight weeks after being laid, they hatch. The babies will live seven to nine years.

Geckos are typical pets. But in tropical areas they live with humans in houses, even if they are not invited.

Chameleons

Another kind of lizard is the chameleon. There are 128 species, 53 of which live on Madagascar. The rest live in Africa and west of India. The smallest chameleon in the world is called the minima. It is just over one inch long. The largest chameleon is the parsonii. It is known as the "sloth chameleon" and it is two feet long.

Chameleons eat grasshoppers, butterflies, caterpillars, mosquitoes, fruit flies and cockroaches. Chameleons can even eat venomous creatures such as spiders and scorpions. Chameleons don't move quickly, so they need less food than other animals their size. In fact, they will sit motionless for hours waiting for prey. A gland near their mouth will ooze out a stinky liquid to attract bugs. However, their tongue moves very quickly. It is 1 ½ times longer than their body. This tongue can unwind in 1/16 second and retract in ¼ second. This fast tongue can capture insects when chameleons see one on a branch. The insect never knows what got them! Chameleons get their water needs by licking water droplets from leaves.

Chameleons are adapted to living in trees and branches. While hunting, they balance themselves with their prehensile tails. These tails act as a fifth foot, but if the tail is injured and cut off, it can't be replaced. Not only are their tails good "grippers", but their feet are as well.

In addition, their shape is such that all their weight is directly above their feet. This enables them to balance on narrow twigs. A chameleon's grip is so strong, that its legs would have to be broken in order to get it off a branch. If they happen to fall, their lungs will inflate so when they hit the ground, they will bounce.

Chameleons are famous for changing colors, but the color change is not magic! It is a result of mood, temperature and amount of light. When a chameleon is cool, its colors will darken so it can absorb more light. A chameleon has five layers of skin that make this possible. The first layer is called melanophore. This is the layer with "color" cells. The second layer is made up of white cells called iridocytes. The third layer is a blue layer with crystal cells called guanine. The fourth layer has two kinds of cells: large red cells and small yellow ones, containing yellow oil. The last layer is clear and water tight but sheds.

Each pigment cell is connected to a nerve cell. Different messages can be sent to each nerve so different color patterns are possible. There are two systems for changing colors. The slow way can take many minutes or even hours. In this way, hormones send messages to the blood. Only solid colors are possible. The fast method uses the nervous system. Chameleons can recolor in 15 seconds using this method. Changing colors takes a year of practice. Oddly enough, the grumpier the chameleon, the better the color changes!

Chameleons also "talk" with their changes in skin colors. For example, when a pardalis chameleon is angry or cold, it will turn black. If it is really angry, it will have bright stripes! If it's sleepy, tired, or sick, it will turn tan. If it is green, it is calm or peaceful. Yellow is surrender, and black with orange dots means the chameleon is pregnant.

Chameleon means "little lion" and they certainly are! They are fearless fighters; they will attack anything even humans and airplanes! When a chameleon sees another chameleon, he will fight for his territory. The two "little lions" will display their finest colors. Then they will bite and scratch. In the end, one chameleon must surrender and leave.

Even in mating, chameleons are violent. For up to forty five minutes, a male will pin a female down, biting and scratching her and even drawing her blood to keep her down. A pregnant chameleon will leave the trees to go to the ground and dig a nest. The female may dig for ten hours to make an eight inch deep hole for her eggs. She squeezes and shakes her thirty eggs out into her nest. Then she will cover the nest with dirt and pat it smooth. The incubation time is between 180-300 days. Chameleon eggs have an unusual quality; they can stop growing to wait for external conditions to be better. This is called diapause.

Embryos breathe through pores in their eggs. They must

also get water in through these pores. These pores put the embryos at the mercy of nature. If the nest is too dry, the egg will dry out and the baby will die. If the egg is too wet, fungus can grow inside the egg or the baby will drown in the water. When born, chameleons are only $\frac{3}{4}$ of an inch long. The babies are all brown and they all look the same. Young chameleons will only eat fruit flies and mosquitoes. Believe it or not, these small baby chameleons *will* grow up to be fierce fighters, too. However, they are not nearly as fierce as their cousins, the komodo dragon.

Komodo Dragons

The biggest kind of lizard in the world is the komodo dragon, who lives on islands in Indonesia. The islands are called Rinja, Flores, Padar and Komodo. As you may have guessed the komodo dragon got its name from the island Komodo. The dragon part on its name is because a full grown komodo dragon weighs about 300 pounds and is bigger than a human.

A komodo dragon has no vocal cords; it uses body language. Komodo dragons have very good vision, and they see in color. Their hearing is good, too. And they have visible ear holes. Their sense of smell is not very good. They can not draw air into their diaphragm. They can only smell if the breeze is blowing directly into their nose or if the smell is a few feet away. Komodo dragons do not have any taste buds on their mouth or tongue. But they do have a few on the back of their throat. They taste with an organ in the roof of their mouths. Komodos can not feel because they have too many scales. But they have a sense that we don't have. It is called vomero-nasal. It is a combination of smell and taste. This sense involves their forked tongue. It gathers information and sends it to their brains.

Komodos have a meal 12 times a year. So you can imagine how big their meals are. They eat about 60 pounds of food every meal! After a meal their belly will hang on the ground. They have a special stomach acid to digest food quicker. They also have to bask in the sun because the sun's energy can help to speed up digestion. If they did not do this, the food would rot in their stomach. A komodo is smart when it hunts. Its ambush is clever. It hides behind a bush or big stone near a river, and waits. Then the dragon hears a noise -- goats! The dragon waits for the right moment and then attacks! He kills his prey easily and then swallows it whole. It takes about 15 to 20 minutes to swallow it. A Komodo has a tube in its mouth that it sticks out of a hole in the bottom of its mouth when its throat is full of food. It will cough up a pellet of indigestible food, such as horns, hair, teeth, and hooves. The pellet is covered in a sticky smelly mucus — even too stinky for the dragon! After it coughs the pellet up, the Komodo dragon will rub its face in the dirt or on a bush to get rid of the mucus.

If the komodo isn't able to kill his prey but only wounds it, the dragon will still get his meal. A komodo has four germs in its mouth. These germs cause blood poisoning. One of the germs is "flesh eating" and gives a stinky smell so the komodo can smell the rotting flesh of the wounded animal six miles away. In this way, the komodo can track his food.

Komodo dragons will fight for territorial reasons and for "showing off" to a female. Only the same size male dragons will fight. They normally meet at a dead carcass of food, left to rot. The fight starts. The two males lash their tails; then they strike! The two dragons lunge into each other, scratching and biting each other. At this point the two males may stand up on their hind legs and grasp each other's arms. This looks like they are dancing—but they are doing quite the opposite. The end of the fight is when the loser will either be killed and eaten or when the loser will run off in fright.

It is hard for a male Komodo dragon to find a mate. There are at least three males for every one female. And unlike humans all sexual organs are hidden inside the komodo's body, so a male komodo dragon can't tell if a female is a female. Males and females look the same. One way that a female can tell if a male is a male, is that the male has a kind of "perfume". If a male sees another dragon, he will let out the perfume. If the other dragon is a female, she will react. When a male is ready to mate, he will look for a female. When he finds one, he will tell her "I am ready to mate" by flicking his tongue around her ear and by rubbing his chin with hers. If she is ready to mate, too, then the male will climb onto her back, and they will mate.

The female will lay her eggs one month after mating. She will dig a big hole in the ground and back into it, and lay about twenty eggs. When she is done laying her eggs, she backs out and pushes dirt over the eggs. Then she stomps on top of the hole to collapse it. After that, she leaves, and her eggs are alone to hatch. The eggs are three inches long and are rubbery and stretch like elastic. The eggs grow 50% bigger in eight and a half months.

The baby dragons, when they are ready to hatch, weigh 4oz. They have a special tooth that helps them rip their way out of their eggs. Once they are out, they will lose that tooth. When they get out of the eggs, they will wait up to 24 hours to dig their way out from under the earth. In this time they will rest so they will have enough strength to dig themselves out. Once out, they will live in the trees eating insects. When they grow older, they will eat small birds, eggs and geckos. When they grow to three feet, the dragons live on the ground. They will grow all their life until they grow to 9 to 11 feet. They live fifty years.

It is illegal to kill komodo dragons because there are fewer than 1,000 left. Komodo dragons are on the U.N. Endangered Species List. In 1984 there was a fire on Padar, destroying almost all the Komodo dragons that

lived there. The few that survived swam to Komodo Island. Because of the dangers of the dragons, Komodo Island became a national park. In 2005, 55 baby dragons were successfully hatched in a zoo. I hope the dragon will not become extinct, and I am happy that we are trying to prevent the dragons from doing so.

Lizards as Pets

Obviously, no one can have a komodo dragon for a pet. However, many other lizards are available to buy. If you are interested in buying a lizard, here are some tips. When you buy a lizard, you need to know what questions to ask. You should find out the lizard's diet, how big it will grow, its habitat needs, and if it's gentle. You should also know if it is active in the day or the night and if the lizard is healthy. Look for any scars and count its toes. These things will tell you if the lizard has been injured in the past. It is smarter to buy in a pet store where you can examine the lizard thoroughly. It will cost about \$150 dollars to buy a lizard and its equipment.

Lizards need heat and light, so you should buy a fluorescent bulb for light. Keep the light running all day. Get a spot light for heat. You should spray the cage once or twice a day with water for humidity. The reason it is important to find out the habitat of your lizard is the habitat will determine the type of cage. If you get a gecko or bearded dragon, they live close to the ground, so you would want a long but not very tall cage. If you get a chameleon, you would get a tall and narrow cage and a short tree. Chameleons like to climb and will feel more at "home" in this kind of atmosphere. Some good chameleon pets are the Veiled, Jackson's, and Panther chameleons. Chameleons don't like to be touched. If you touch them too much, they will die of stress. They prefer to be alone in quiet. Chameleons also need real sun, so the cage must be placed near a sunny window.

Clean the cage once a week to keep your lizard healthy. You should feed your lizard live food once a day. You can breed crickets easily. Just buy some crickets and then feed them fish food and they will reproduce. Pinkies, dead baby mice, are good for fat. However, too many pinkies can make your lizard sick. Only feed a lizard this food once or twice every two weeks. Being a responsible pet owner is important if you want your lizard to be happy and healthy.

The lifestyles and habitats of the gecko, chameleon and komodo dragon are very different even though all three are lizards. Keeping a pet lizard requires knowledge and a little bit of work, but being close to nature is fun and exciting. I have kept snakes, toads and frogs through the summer for many years, and I have a woods and pond to explore. Although I don't have lizards, I have enjoyed studying a different topic, and I hope I can have a lizard some day.

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