

GILA MONSTER

CARD 29

GROUP 3: REPTILES & AMPHIBIANS

CLASS
Reptilia

ORDER
Squamata

FAMILY
Helodermatidae

GENUS & SPECIES
Heloderma suspectum



The Gila monster is one of only two lizards in the world that have a venomous bite. Its bite, combined with its ferocious appearance, give it a fearsome reputation that its habits barely match.

KEY FACTS



SIZES
Length: 1½-2 ft.
Weight: 3-5 lb.



BREEDING
Mating season: June to July.
Eggs: 3-13.
Incubation: About 4 months.



LIFESTYLE
Habit: Solitary, burrowing. Ground-dwelling and active at night.
Diet: Rodents, birds and their young, eggs, lizards, frogs, large invertebrates. Occasionally feeds on carrion and small mammals.
Lifespan: Up to 20 years in captivity.



RELATED SPECIES
The Mexican beaded lizard, *Heloderma horridum*, is the other member of the family Helodermatidae and the only other venomous lizard. It is larger than the Gila monster.



Range of the Gila monster.

DISTRIBUTION

Found in northwestern Mexico and the southwestern United States, including parts of Arizona, California, Nevada, Utah, and New Mexico.

CONSERVATION

The Gila monster is threatened because its habitat is being taken over by farming. It has also been caught in large numbers for the pet trade but is now protected by law in Arizona.

FEATURES OF THE GILA MONSTER

Body: Squat and heavy with a large head.

Skin: Has a granular surface. Texture and color provide excellent camouflage among the desert sand and pebbles.

Claws: Short but sharp. The Gila monster is well equipped for digging up the eggs of tortoises, snakes, and lizards and for digging its own burrows and egg-laying holes.



Tongue: The Gila monster flicks out its thick, forked tongue to pick up scents. They are conveyed to a special taste organ, called Jacobson's organ, in the roof of its mouth.

Tail: The short, thick tail contains a fat store that enables the Gila monster to survive periods without food.



The Gila monster roams the desert of the American Southwest and nearby Mexico at twilight.

As it heaves its heavy body across the sand and rocks, it flicks its tongue in search of prey.

Although it can kill relatively large mammals and birds, this slow-moving lizard eats mostly insects, eggs, and newly hatched birds.

HABITS

The Gila monster inhabits arid and semiarid parts of northern Mexico and the American Southwest. It prefers areas that get just enough moisture to support a few shrubs.

The Gila monster is inactive much of the time, hiding under rocks and in burrows. It excavates burrows or takes them from rodents. In winter the Gila monster lies dormant in a burrow and lives on fat deposits in its tail. In summer

it avoids the heat by coming out only at twilight. It moves sluggishly and tastes the air with its thick, forked tongue to assess its surroundings.

If danger threatens, the Gila monster usually escapes into its burrow. If cornered, it inflates its body, lifts its head, and hisses. It may then lunge sideways and bite its enemy.

Right: *The Gila monster's body is covered with beadlike scales of black and yellow or pink.*

FOOD & HUNTING

When hunting, the Gila monster relies on its senses of taste and smell rather than its eyes. When it detects the aroma of prey, the Gila monster tracks it across the desert. As it moves, it flicks out its forked tongue to taste the scent particles that have been left on the ground.

Because it moves slowly, the Gila monster must snatch unaware animals with its sharp teeth or catch prey that cannot escape easily. Its victims include birds' eggs and nestlings as well as rodents, frogs,

Left: *The Gila monster tracks prey by tasting scent trails on the ground with its tongue.*

lizards, insects, centipedes, and worms. The Gila monster also feeds on *carrion* (the remains of dead animals). It swallows most prey whole but usually breaks eggs to eat the contents.

The Gila monster's bite contains poison that attacks the nervous system of its prey. The venom is strong enough to kill mammals and birds, but it does not seem to be important for hunting. Most of the Gila monster's victims are small enough to be subdued with its jaws and teeth. The venom may be more useful to the Gila monster as a defense against its enemies.

DID YOU KNOW?

- A few people have died from being bitten by a Gila monster, but they were already in poor health.
- It has been reported that the Gila monster may flip over while its jaws are still clamped on to prey. This move may help its venom flow into the wound.

- Many myths surround the Gila monster. It has been said to possess magical powers and to be impossible to kill.
- Few animals have been known to kill a Gila monster in the wild, but a snake has been seen preying on one.
- The Gila monster is named for the Gila Basin in Arizona.



Above: *The Gila monster may break into rodents' nests to seize both young and adults. It can swallow a mouse whole.*



BREEDING

Mating is a slow process that lasts up to an hour and usually occurs in early summer. Later in the year, the female Gila monster lays a batch of large, oval leathery eggs in a hole she has dug with her forefeet. She then covers them with sand.

The eggs lie about five inches under the surface, and the sun

heating the sand warms them. After about four months the young break free from their shells and crawl to the surface. They are only four inches long. Their coloring is usually more vivid than that of the adults.



SPECIAL ADAPTATIONS

Most venomous reptiles inject their venom into prey. But the Gila monster lets its poison flow into the wound it has made. Its poison glands are modified salivary glands.

When the lizard bites, the glands empty their poison into a fleshy groove. The venom runs into grooves on the lizard's teeth and into the wound through the bite.

The Gila monster bites very hard, almost half an inch deep. It hangs on with its viselike jaws to let the venom flow in. It may chew to tear the flesh so the venom penetrates still further.

People who have been bitten by a Gila monster suffer great pain but rarely die. The main problem is forcing the lizard to release its grip.



ANACONDA

CARD 28

GROUP 3: REPTILES & AMPHIBIANS

ORDER
Squamata

FAMILY
Boidae

GENUS & SPECIES
Eunectes murinus



The anaconda is the biggest snake in the world, even larger than the Old World python. Yet despite its size and strength, it has few defenses against humans—its main enemy.

KEY FACTS



SIZES
Length: Usually up to 16 ft., but snakes over 33 ft. long recorded.
Weight: Up to 550 lb., possibly more.



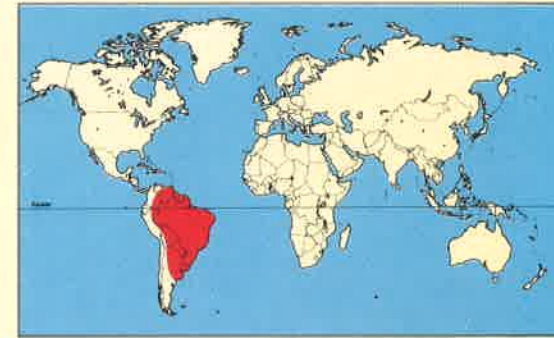
BREEDING
Sexual maturity: 3-4 years.
Mating: Tropical rainy season.
No. of young: 20-40, occasionally up to 60. Born live.



LIFESTYLE
Habit: Solitary, but can form small groups. Active at night.
Diet: Large rodents, wild pigs, deer, birds, fish, and aquatic reptiles.



RELATED SPECIES
There are at least two species of anaconda: the green anaconda, *Eunectes murinus*, and the yellow anaconda, *E. notaeus*. Both belong to the boa family, which includes the boa constrictor.



Range of the anaconda.

DISTRIBUTION

The green anaconda is found throughout the basins of the Amazon and Orinoco rivers in tropical South America. The yellow anaconda ranges as far south as Argentina.

CONSERVATION

The anaconda is threatened by deforestation of its habitat and hunting for its skin. It seldom lives long enough to reach the record sizes reported in the past.

FEATURES OF THE ANACONDA

Camouflage: Black patches on the anaconda's back combine with dull background color to blend in with the thick, wet vegetation of its habitat.

Nostrils: Like the crocodile, the anaconda's nostrils are on top of its snout so it can breathe easily while it is swimming.

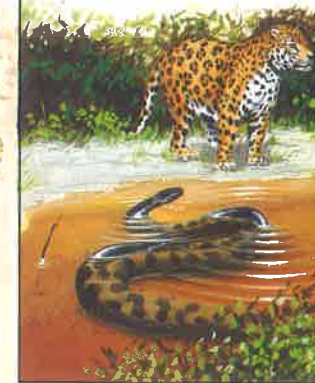


Length: The yellow anaconda grows to a maximum of 16 feet. The green anaconda can reach 33 feet and possibly more.

Weight: The heaviest of all snakes, the anaconda is more comfortable swimming than dragging its bulk on land.

WAITING FOR PREY

The anaconda lies coiled in the shallows of a forest stream or pool and waits for prey such as a large rodent to come and drink. It occasionally preys on jaguars but never attacks humans, even from the water. If the anaconda senses the presence of humans, it quietly glides away.





A larger version of the boa constrictor, the anaconda is a massive snake that kills its prey by squeezing it to death in its powerful coils. It then swallows its victim whole. Although it has an appetite for prey as large as wild pigs and deer, the huge anaconda is capable of surviving for months and even years without food.

HABITAT

The abundant streams, rivers, swamps, and pools of the tropical rainforests of Amazonia provide an ideal habitat for the anaconda.

This heavy snake is more at home in the water than on land, and it swims with grace and agility. It can stay submerged for over 10 minutes at a time and often lies beneath the surface waiting for prey. The anaconda lets itself be carried downstream on the river's current with only its head breaking the surface.

Then it drifts to the bank and glides away into the thick undergrowth.

The anaconda usually hunts at night. It spends the day lying in the shallows or basking in the sun, draped over the branches of a tree at the water's edge. Like most snakes, it can climb well and it uses trees for refuge from predators. Only the most powerful predator, however, can subdue a full-grown anaconda.

Right: *The anaconda may sleep for days while it digests its prey.*

FOOD & HUNTING

The anaconda preys on deer, wild pigs, and large rodents such as the agouti, paca, and capybara. It also attacks aquatic animals like the caiman, a relative of the alligator.

The anaconda lies in a murky pool to ambush animals coming to drink. It seizes its prey quickly with its sharp teeth and drags it into the water.

The victim often drowns before it is killed. Like all boas, the anaconda kills by constriction, coiling itself around the

Left: *Slow on land, the anaconda is quick and deadly in the water.*

prey and squeezing. The snake squeezes tighter each time the animal breathes out so it cannot breathe in again. It quickly dies from suffocation.

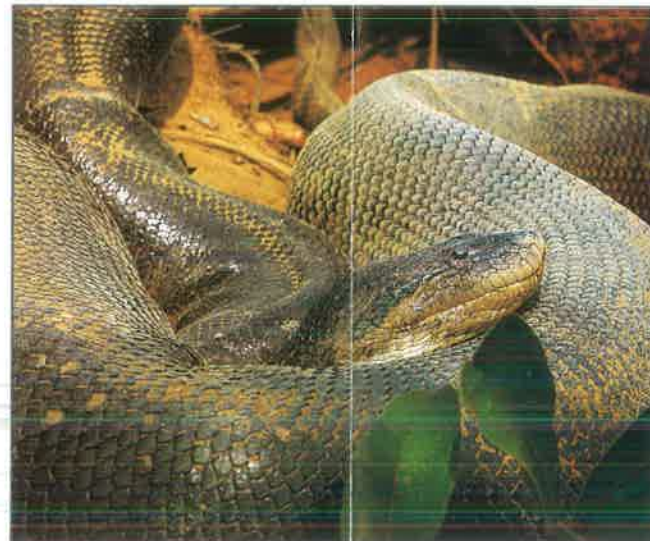
The anaconda swallows its victims whole. It can stretch its mouth around prey twice the width of its head because its jawbones are loosely attached to its skull and to each other. After a large meal, the anaconda sleeps for several days as it digests and may not feed again for weeks.

Above right and right: *The anaconda kills its varied prey by one method—constriction.*

DID YOU KNOW?

- The anaconda has been known to attack jaguars, and a 26-foot anaconda was reported to have killed a six-and-a-half-foot caiman.
- When kept out of the water, an anaconda's body becomes infested with ticks.
- In captivity the anaconda

- can go without food for months. One captive snake fasted for over two years.
- The heaviest of snakes, a 20-foot anaconda weighs more than a 33-foot python.
- There have been reports of 130-foot anacondas, but they have not been proven.



BREEDING

The anaconda is normally solitary with its own fixed hunting area. But at the onset of the rainy season each female in breeding condition gives off a scent known as a *pheromone*, which is picked up by a nearby male. He makes his way toward the female, with his forked tongue flicking as he follows the scent trail.

During courtship the male presses his body to the female's. With his tongue still flicking, he works his way up until his head is resting on her neck. He then

erects his *spurs*, a pair of tiny hind limbs whose use in mating is unique to boas and pythons. The male uses them to tickle the female's vent region, encouraging her to mate.

Most snakes lay eggs, but the anaconda gives birth to live young. The female usually produces 20 to 40 young, each about two feet long. Within hours of birth young snakes can swim, hunt, and care for themselves. They feed mainly on frogs and fish until they are big enough to tackle larger prey.

DIAMONDBACK TERRAPIN

CARD 27

GROUP 3: REPTILES & AMPHIBIANS

ORDER
Chelonia

FAMILY
Emyidae

GENUS & SPECIES
Malaclemys terrapin



In the past the diamondback terrapin was almost hunted to extinction for its meat. Today, protective measures and commercial farms make its distinctive shell a more common sight.

KEY FACTS



SIZES
Length: Male, 4-6 in. Female, 6-9 in.
Weight: Up to 2 lb.



BREEDING
Sexual maturity: Female, about 7 years. Male may be slightly older.
Mating season: Early spring.
No. of eggs: 7-24 white eggs per clutch. Up to 5 clutches per year laid by large, mature female.



LIFESTYLE
Habit: Solitary.
Diet: Fish, crustaceans, mollusks, and insects.
Lifespan: About 30 years in the wild; 50-70 years in captivity.



RELATED SPECIES
There are 7 subspecies of diamondback terrapin. Ten species of map turtles *Graptemys* are also related.



Range of the diamondback terrapin.

DISTRIBUTION

Found in salt and brackish water along the Atlantic coast of North America from Massachusetts to the Gulf of Mexico and Mexico.

CONSERVATION

Humans have been the terrapin's main predators. Its population has been increasing as a result of protective measures and commercial farms where terrapins are raised for their meat.

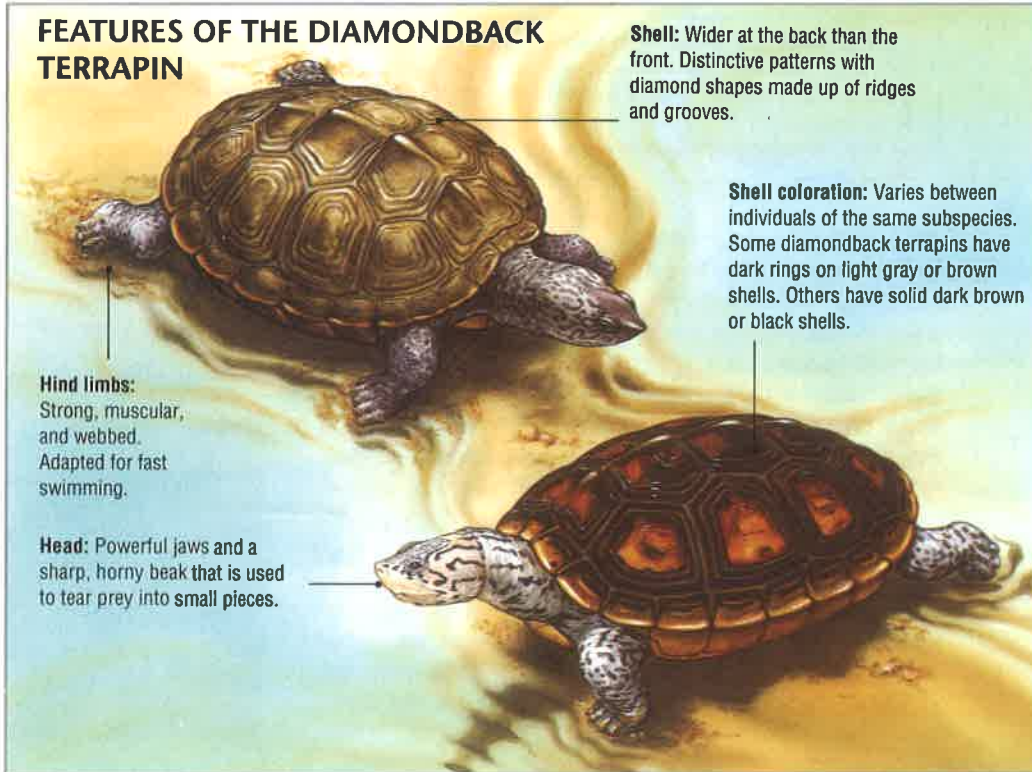
FEATURES OF THE DIAMONDBACK TERRAPIN

Hind limbs: Strong, muscular, and webbed. Adapted for fast swimming.

Head: Powerful jaws and a sharp, horny beak that is used to tear prey into small pieces.

Shell: Wider at the back than the front. Distinctive patterns with diamond shapes made up of ridges and grooves.

Shell coloration: Varies between individuals of the same subspecies. Some diamondback terrapins have dark rings on light gray or brown shells. Others have solid dark brown or black shells.





The diamondback terrapin gets its name from the diamond-shaped patterns on its carapace, or upper shell. Some shells also have strongly contrasting light and dark colors that accentuate these patterns. Black dots speckle the terrapin's yellowish head, legs, and lower shell, or plastron.

Above: The diamondback terrapin's shell varies greatly in size. The shell of the female may be twice as large as the male's shell.

Above right: The diamondback terrapin basks in the sun during the heat of the day. At night it buries itself in mud, where it remains until morning.

FOOD & HUNTING

Instead of teeth, the diamondback terrapin has a strong, horny beak with a sharp cutting edge. It uses its powerful jaw muscles to tear and cut its prey into small pieces. Small prey like aquatic insects are swallowed whole. The terrapin eats small fish, crustaceans, mollusks, insects, worms, and sometimes green water plants.

Most marine turtles can drink seawater because their bodies excrete the salt. But the diamondback terrapin can only drink fresh water.



DID YOU KNOW?

- The name *terrapin* comes from a Native American word meaning "little turtle."
- A diamondback terrapin held captive in fresh water will develop a skin fungus. When salt is added to the water, the fungus disappears.

• In the 18th century the diamondback terrapin was a cheap source of food for slaves. In the late 19th century terrapin meat was considered a delicacy. By the early 20th century diamondback terrapins were sold for

as much as \$120 a dozen. • A female diamondback terrapin can lay fertile eggs for several years after a single mating. This feat is made possible by her ability to store live sperm that is later used to fertilize eggs.

HABITS

Although the diamondback terrapin belongs to the family of *Emydidae* freshwater turtles, it actually lives in salt or brackish water near the coast. A diamondback terrapin living in a river usually stays near the mouth. It only travels upriver with the tide.

The diamondback terrapin spends most of the day in the water. It floats with its shell down, so only its snout can be seen above the water. It keeps its body steady by paddling slowly with its webbed hind feet. When necessary, it uses its

powerful legs to swim quickly. During the hottest parts of the day, the terrapin lies on nearby rocks and basks in the sun for short periods. At night it buries itself in mud.

In northern regions the diamondback terrapin digs itself into wet mud to hibernate during the winter. It does not hibernate for a specific period of time and often emerges during milder winter weather to build up its fat reserves. If the weather becomes colder, it digs itself back into the mud.



BREEDING

Most information about the mating and breeding habits of the diamondback terrapin has been gathered at commercial farms. Terrapins are bred at these farms for their meat.

Mating occurs in spring when the temperature becomes warmer. Temperature is thought to be the main factor in the onset of mating.

In early summer the female chooses a suitable nesting site just above the high water

Left: A terrapin hatchling is only an inch long when it emerges from its shell.

mark. Then she digs a hole with her hind legs about a foot deep. She lays 7 to 24 white eggs and covers them with mud and sand. The laying season varies with the location. Depending on her age and size, the female may lay as many as five clutches per year.

Hatching occurs about 90 days later. Hatchlings are more brightly colored than adults. Females are ready to breed when they are about seven years old, but some males may be older before reaching sexual maturity.

SNAKE-NECKED TURTLE

CARD 25

GROUP 3: REPTILES & AMPHIBIANS

ORDER
Chelonia (Testudines)

FAMILY
Chelidae

GENUS & SPECIES
Chelodina longicollis



The snake-necked turtle is Australia's most widespread and well-known freshwater turtle. Exclusively meat eating, it hunts in many still and slow-flowing waters.

KEY FACTS



SIZES

Length: Shell, up to 11 in.
Extended head and neck, 5 1/2 in.
Weight: Average 2 1/2 lb.



BREEDING

Sexual maturity: Male, 7 years.
Female, 10-11 years.
Mating season: September to October.
Nesting season: November to December; occasionally January.
No. of eggs: 6-24.
Incubation: 130-170 days.



LIFESTYLE

Habit: Both water and land.
Migrates over land in groups.
Diet: Amphibians, crustaceans, worms, insects, and mollusks.
Lifespan: 17-50 years.



RELATED SPECIES

There are 36 species of turtle grouped into 9 genera within the family *Chelidae*.



Range of the snake-necked turtle.

DISTRIBUTION

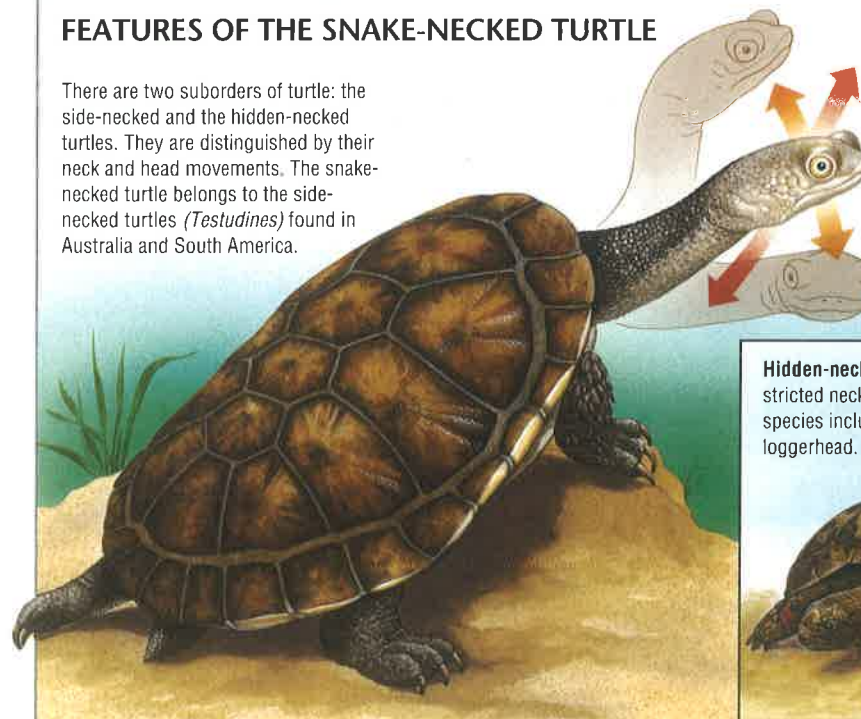
Widespread in slow-moving waters in eastern Australia, from southern South Australia to northern Queensland.

CONSERVATION

This species is still common, but it has been widely trapped. Many turtles have been killed by fishermen and vehicles and as a result of losing access to water.

FEATURES OF THE SNAKE-NECKED TURTLE

There are two suborders of turtle: the side-necked and the hidden-necked turtles. They are distinguished by their neck and head movements. The snake-necked turtle belongs to the side-necked turtles (*Testudines*) found in Australia and South America.



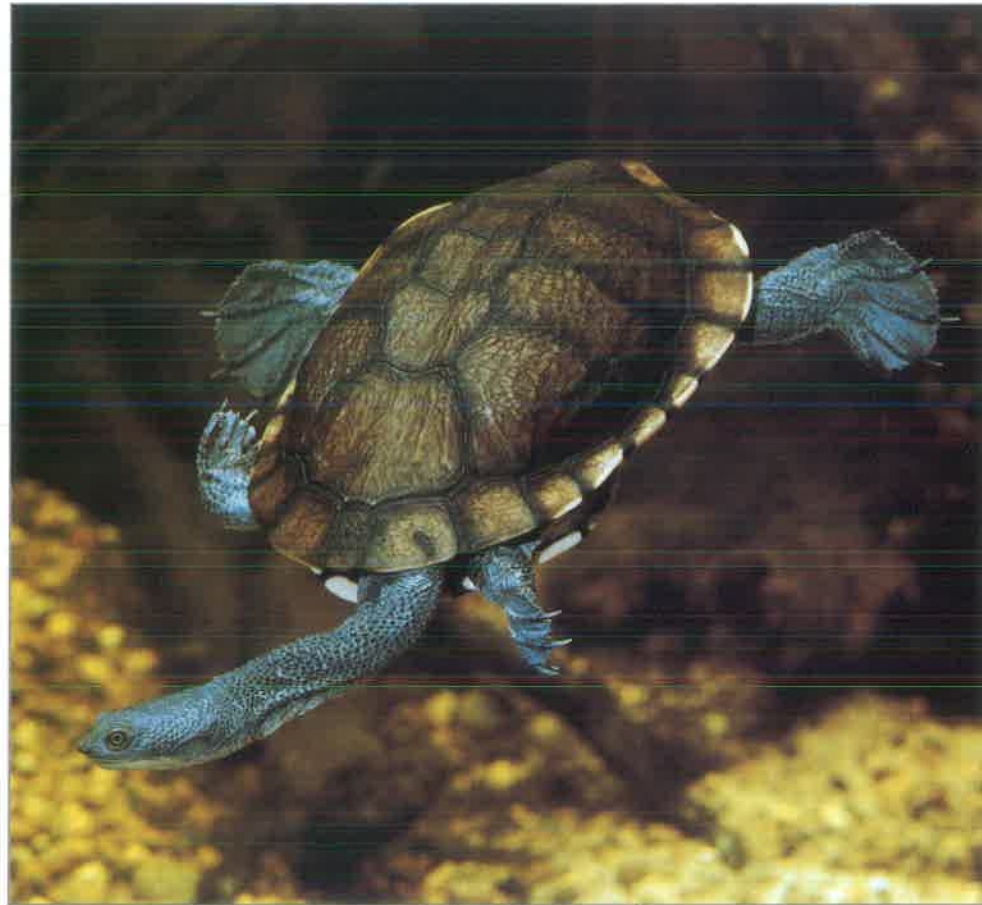
Neck: Provides excellent vision because of turtle's ability to move head freely. Can be coiled like a spring for seizing prey.

Hidden-necked turtles have restricted neck movement. These species include the common loggerhead.



The snake-necked turtle is also known in Australia as the long-necked turtle. When fully extended, its head and neck are more than half the length of its shell.

The snake-necked turtle belongs to a family whose turtles fold their heads and necks along the sides of their shells rather than pulling them in.



BEHAVIOR

The snake-necked turtle is commonly seen both in and out of water. Streams, rivers, swamps, and lagoons are its favorite habitats. It prefers slow-moving, often muddy water, but it can occasionally be seen crossing small rapids, looking for food.

The seasonal drop in temperature in the southern part of the snake-necked turtle's range sends many turtles into hibernation underwater or on dry land.

This species is known for its ability to colonize new, artificial ponds, usually within about two

years. Also, groups of snake-necked turtles are frequently seen far from the water's edge. The turtle often takes a rambling path over dry land, readily changing direction to move around any barrier. But as soon as it sights water, it heads straight for it.

FOOD & HUNTING

The snake-necked turtle is a *carnivore* (meat eater). It hunts actively during the day for a variety of aquatic invertebrates such as shrimp, insect larvae, crayfish, and mollusks, as well as for frogs. The turtle's long, sinuous neck is critical to its ability to catch prey.

Once the turtle is within reach of prey, it draws its neck back into an S shape and then springs it forward. Underwater, instead of striking the prey, the turtle brings its head to a sudden halt alongside the creature and opens its mouth wide. Water

rushes into the turtle's mouth, pulling the prey along with it. The turtle then partially closes its mouth, forcing the water back out, but leaving the prey behind.

The snake-necked turtle does not have powerful jaws for biting prey. Instead, the reptile appears

to kill and dismember large prey in its throat with a rubbing action of its front legs. It uses the same movement to position food for swallowing.

Below: Few young turtles ever hatch because the eggs are eaten by water rats and goannas.

BREEDING

Mating takes place underwater, with the male swimming closely behind the female until he can rest his chin on her shell. He then moves forward and mounts, clasping the edge of the female's shell with his forefeet and tucking his tail beneath hers.

Two months later, the female prepares a nest on land by digging a hole in sandy, sparsely vegetated soil. She chooses a slope from which rainwater can drain easily, for even a few hours of soaking will kill the unborn hatchlings. She lays and arranges the eggs and scoops the soil back over them.

The young turtles may not emerge for six months. They immediately go into the water.

Left: The turtle is an aggressive, agile hunter. It uses both stealth and the strike of its coiled neck to grab its prey.

Below: Adults use a strong-smelling fluid to discourage predators.



PREDATORS

Many young turtles fail to hatch because their nests are raided by animals. The hatchlings are vulnerable as they journey to the water; and they face attack from fish and water birds when they arrive.

Adults have fewer predators because of their size and protective shells. But pelicans, storks, dingoes (Australian wild dogs), and birds of prey have been known to attack them.



DID YOU KNOW?

- The snake-necked turtle can breathe while resting on the bottom of shallow water: it stretches its long neck up and pokes its head above the surface.

- This turtle's eyes are set unusually far forward. The resulting accurate vision is vital for striking at the right spot.

- The snake-necked turtle is sometimes called the "stinker" because of the strong-smelling liquid that it produces when caught. It can spray this fluid as far as three feet.

- Western scientists first learned about the snake-necked turtle from Sir Joseph Banks. He collected a specimen during Captain Cook's voyage to Australia in 1770.

RED-AND-BLUE POISON-ARROW FROG

CARD 24

GROUP 3: REPTILES & AMPHIBIANS

ORDER
Anura

FAMILY
Dendrobatidae

GENUS & SPECIES
Dendrobates pumilio



The red-and-blue poison-arrow frog's jewel-like color stands out from the rich rainforest vegetation as a warning that it is one of the most poisonous animals on earth.

KEY FACTS



SIZES
Length: 1 in. The biggest frog in the family grows to 2 in.



BREEDING
Mating: During the tropical rainy season.
No. of eggs: 4-6, laid on land.
Tadpole: Develops in flooded leaf joints of plants and feeds on unfertilized eggs.



LIFESTYLE
Habit: Lives on forest floor and among trees.
Diet: Small insects such as ants and spiders.
Lifespan: Unknown.



RELATED SPECIES
Of the 116 species in the family, 55 are brightly colored poisonous *Dendrobates* and *Phyllobates* species. These include the golden poison-arrow frog, *Dendrobates auratus*, and the deadly *Phyllobates terribilis*.



■ Range of poison-arrow frogs. ■ Red-and-blue species.

DISTRIBUTION

The red-and-blue poison-arrow frog lives in the Costa Rican rainforests. Other species occur throughout tropical South America from Costa Rica to southern Brazil.

CONSERVATION

Although the poison-arrow frog is collected both for its poison and for the pet trade, the destruction of its forest habitat threatens its future.

HOW THE RED-AND-BLUE POISON-ARROW FROG REARS ITS YOUNG

Location: The female may carry the tadpoles several feet to place each one in a cuplike condensation pool at the center of a tree-growing plant.

Tadpoles: Newly hatched young climb on the female's back and are kept moist.



Young: Regularly fed unfertilized eggs by the female. The frog climbs out of the plant when fully grown.

For centuries, the poison-arrow frog has provided South American Indians with poison for the tips of arrows and blowpipe darts. For predators, swallowing a frog means certain death, and even licking one can prove fatal.



HABITS

Like all amphibians, poison-arrow frogs must stay moist to survive. The red-and-blue species lives in Costa Rican rainforests. The constantly steamy, wet environment reduces the frog's need for streams and pools.

It forages through the rain-soaked leaves and vegetation for small insects such as ants and spiders. The poison-arrow frog moves in short hops and rarely stays still. Adhesive pads on its toes allow it to climb agilely to search for prey.

DEFENSES

Some frogs protect themselves from larger predators such as snakes and hawks by secreting mild poisons from the skin to make themselves taste foul.

The poison-arrow also uses this tactic, but its skin gland secretions are lethal. A predator faces certain death if it swallows a poison-arrow frog, and even licking one can often prove fatal.

These frog poisons are the most powerful animal poisons known. As little as two micrograms of its poison can

kill an adult human—and each frog contains nearly 200 micrograms. The dangerous levels of poison are lower in the red-and-blue species, but it still is lethal.

Because the poison-arrow frog is too small to be seen by some animals, its brightly colored skin makes it more noticeable and acts as a warning to predators that the frog is deadly prey. Consequently, fewer frogs are eaten during the day, when predators can recognize them as dangerous.

Many frogs lay large quantities of eggs in water and leave them alone. Fish eat the newly hatched tadpoles, and few survive to develop into adult frogs. The poison-arrow frog breeds in a different way that ensures the tadpoles' survival.

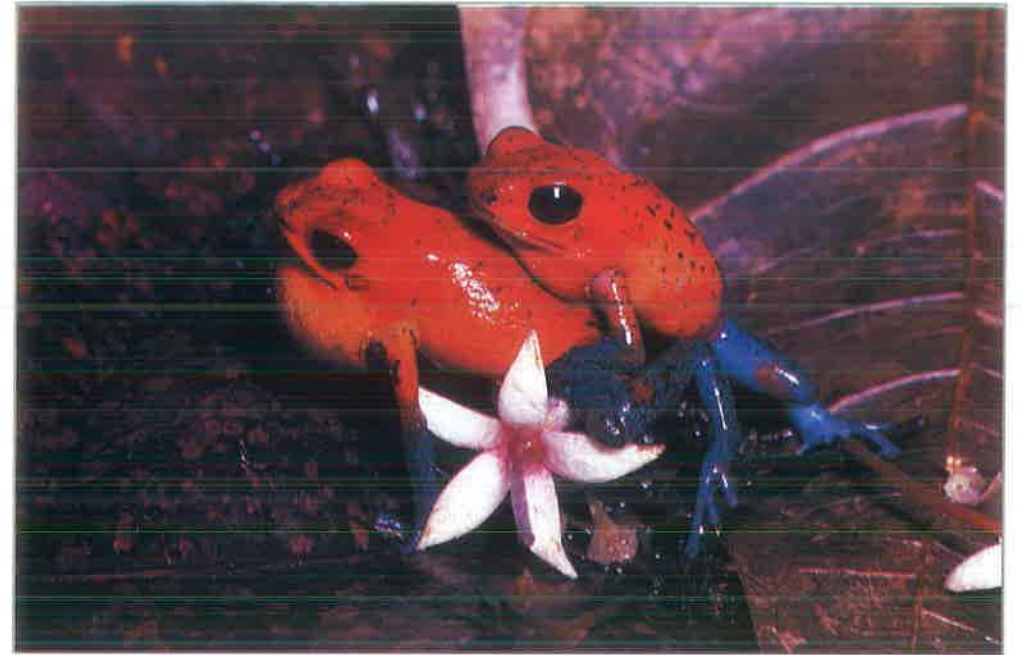
After a courtship ritual of calling, chasing, and wrestling, the female lays four to six eggs. The male then fertilizes the eggs.

The newly hatched tadpoles climb onto the female's back, and she carries them to the water. Sticky mucus holds the tadpoles on tight and keeps them moist during the several-hour journey.

Instead of a pond or stream, the red-and-blue mother places her tadpoles in tiny condensation pools in the centers of tropical plants. The female puts one tadpole

in each plant, feeding them each week by placing unfertilized eggs in the pools. Fed on this nutritious food, the tadpoles grow into adulthood.

BREEDING



Above: Males wrestle for mates; their poison is for predators.

Below: Its vocal sac fully extended, a poison-arrow frog croaks a territorial claim.



POISON-ARROW FROG & MAN

The Choco Indians of western Colombia developed the technique of using this frog to poison the tips of arrows or blowpipe darts.

The Choco use poison from

the most poisonous species are warmed over fires on skewers to

quantities of poison, which is concentrated for use. Today the Choco use poison darts or arrows for hunting small game, but in the past they were used in wars with

DID YOU KNOW?

- Only one natural predator may hunt the poison-arrow frog: the snake *Leimadophis epinephelus* seems to be immune to the toxins.
- This family includes some of the smallest frogs in the world: *Dendrobates minutus* grows to only a half inch.
- Scientists discover new species of poison-arrow frogs continually in their tropical forest explorations. Still, their habitat may be destroyed before scientists can account for them.

GECKO

CARD 23

GROUP 3: REPTILES & AMPHIBIANS

ORDER
Squamata

FAMILY
Gekkonidae

GENUS
Various



The gecko family of lizards includes hundreds of species found in rainforests, mountains, and even deserts. Many have unusual markings, and some give distinctive calls.

KEY FACTS



SIZES
Length: 1-14 in.



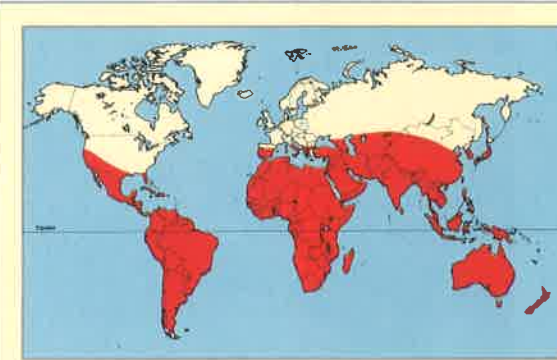
BREEDING
Incubation: 6-10 weeks.
No. of eggs: Usually 2 per clutch.
May lay several clutches during breeding season.



LIFESTYLE
Habit: Solitary. Some species hibernate.
Diet: Insects, small birds, mice, lizards, and fruit.



RELATED SPECIES
There are approximately 86 genera and 800 species of geckos. The gecko family is divided into four subfamilies: *Eublepharinae*, *Diplodactylinae*, *Gekkoninae*, and *Sphaerodactylinae*. The *Gekkoninae* subfamily is the largest, with more than 550 species living all over the world. It includes the Mediterranean gecko, *Hemidactylus turcicus*.



Range of the gecko family.

DISTRIBUTION

Southern California, Florida, Mexico, Caribbean, South America, Mediterranean coast, Africa, the Middle East, Australia, New Zealand, Southeast Asia, and Pacific islands.

CONSERVATION

Geckos are widespread, adaptable, and pose no threat to humans. Most species are not endangered.

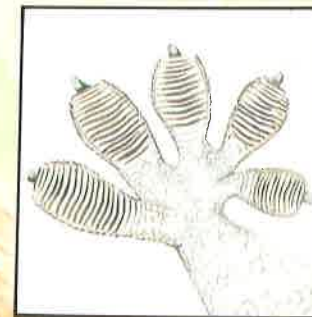
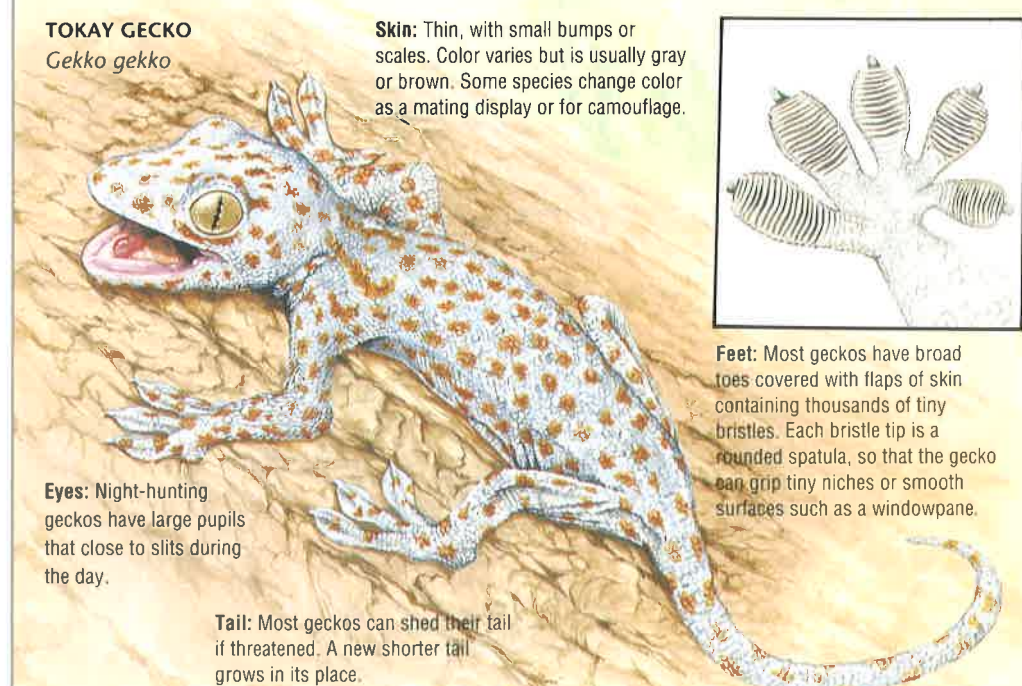
FEATURES OF THE GECKO

TOKAY GECKO
Gekko gekko

Skin: Thin, with small bumps or scales. Color varies but is usually gray or brown. Some species change color as a mating display or for camouflage.

Eyes: Night-hunting geckos have large pupils that close to slits during the day.

Tail: Most geckos can shed their tail if threatened. A new shorter tail grows in its place.



Feet: Most geckos have broad toes covered with flaps of skin containing thousands of tiny bristles. Each bristle tip is a rounded spatula, so that the gecko can grip tiny niches or smooth surfaces such as a windowpane.



Geckos have small, plump bodies with large heads and eyes. Many species are vividly colored, and some even change color. Because of geckos' unusual appearance, some people think they are dangerous.

But these reptiles do not hurt humans.

HABITAT

Geckos live in a wide range of habitats including tropical rainforests, parched deserts, and icy mountain peaks. They are not afraid of humans, and some species have expanded their range by stowing away on ships. For example, the common gecko originated in north Africa and was carried unknowingly by humans to

southern France, the Canary Islands, and even islands in the South Pacific.

In the Southwest some geckos seem to prefer living in houses to staying in their natural habitat. At night the lights attract so many insects that all the gecko needs to do is cling to the ceiling and wait for prey to fly by.

Right: The leopard gecko lives in arid, rocky parts of Asia. Unlike most other geckos, it has eyelids that can close.



FOOD & FEEDING

Most geckos hunt at night. The common gecko eats beetles, butterflies, millipedes, crickets, and cockroaches.

Many larger species, such as the Caledonian gecko, pursue young lizards, mice, and small birds. They track their prey before pouncing. Then they take it in their mouth and strike it against the ground.

Some day-active geckos,

Left: This gecko species lives in the warm Solomon Islands in the Pacific.

such as those in Madagascar, feed on fruit and flower nectar. The species *Gehyra mutilata* eats so much sweet food that it is called the *sugar lizard*.

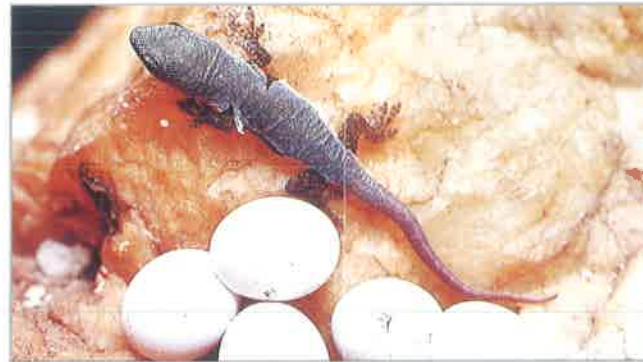
The Madagascar leaf-tailed gecko washes itself all over with its tongue after every meal. Another gecko in the Seychelles rides on tortoises and feeds on insects attracted by the tortoises' feces.

Right: Web-footed geckos prey on insects such as this dune cricket in the Namib Desert.



DID YOU KNOW?

- The gecko *Sphaerodactylus parthenopion* is only one and a half inches long. It is the world's smallest reptile.
- The tokay gecko gets its name from one of its calls: "to-kay, to-kay."
- Sometimes a gecko's tail heals instead of breaking off completely. A new one also grows in, leaving the animal with two or even three tails.
- A gecko pounces on an insect only if it moves.



BREEDING

Geckos' mating habits vary greatly, but most include a courtship ritual, such as displaying bright skin colors or uttering a distinct mating call. For example, between March and May the male tokay gecko in southeast Asia makes a barking sound that is probably a mating call.

A male banded gecko approaches a prospective mate with his legs bent and head stretched forward. Wagging his tail, he nuzzles her flanks and licks her before mating.

Like most reptiles, the male: *Geckos regularly shed their skin. This process starts shortly after they hatch.*

majority of geckos lay eggs. The female house gecko lays four or five pairs of eggs between May and August, with two to four weeks between layings.

Gecko egg shells tend to be soft at first but harden quickly. They have a sticky coating and are often stuck inside cracks or under bark or stones. It is not unusual to discover clumps of eggs stuck together if several females share a site.

The female southern dwarf gecko has an unusual egg-laying method. She strokes and pulls the eggs free with her hind legs. There are even species in New Zealand that bear live young.



SPECIAL ADAPTATIONS

Eyes: The pupils of night-active geckos enlarge to fill their eyes and shrink to slits during the day.

Color: Some geckos can change color. The banded leaf-toed gecko is brown

during the day and yellow at night. The skin of the Madagascar leaf-tailed gecko matches tree bark.

Tail: The tail of a gecko may break off if it is caught and will later regrow.



Left: Like most other geckos, the ring-tailed gecko has no eyelids. It licks its eyes to keep them moist and clean.

WESTERN DIAMONDBACK RATTLESNAKE

CARD 22

GROUP 3: REPTILES & AMPHIBIANS

CLASS
Reptilia

ORDER
Squamata

FAMILY
Viperidae

GENUS & SPECIES
Crotalus atrox



The Western diamondback rattlesnake is one of the largest poisonous snakes found in the United States. Its name comes from the distinctive diamond-shaped pattern of scales on its back.

H.Reinhard/Bruce Coleman Ltd

KEY FACTS



SIZES
Length: Average of 3 ft. Some grow over 6 ft.
Weight: 1-2 lb.



BREEDING
Sexual maturity: 3-6 years.
Mating: Spring and fall.
Gestation: 3-4 months from spring mating. The following summer from autumn mating.
No. of young: 2-24, depending on size of female.



LIFESTYLE
Habit: Solitary, but forms groups with others to hibernate.
Diet: Small warm-blooded mammals and birds. Young eat frogs, toads, and lizards.
Lifespan: Up to 20 years.



RELATED SPECIES
30 related species are found throughout North and South America.



Range of the Western diamondback rattlesnake.

DISTRIBUTION

Found in the desert sand and semidesert grasslands of southwestern North America, extending from California in the west to Arkansas in the east.

CONSERVATION

The snake is not currently endangered, although a serious decline in the population could occur if hunting is not controlled.

FEATURES OF THE RATTLESNAKE

Venom: Large hollow fangs act like hypodermic needles. They inject venom into prey when the snake strikes. Spare fangs behind the main set spring forward if the front ones are damaged.

Forked tongue: Flicked in and out, senses the air for any trace of prey.

Eyes: Vertical pupils allow maximum dilation for sharp vision.

Pit organs: Membranes located in pits between eyes and nostrils. They are sensitive to temperature changes, allowing the snake to locate small, warm-blooded animals nearby, even in complete darkness.

