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TORTOISES AND TURTLES

Leopard Tortoise

Stigmochelys pardalis

Stigmochelys pardalis is a large, calm, herbivorous tortoise from the savannas of Africa with black and yellow leopard spots on a high-domed shell. It typically grows to about 40 cm and can live for 50-100 years. It therefore needs a very large outdoor enclosure in summer, warmth and UVB indoors for the rest of the year and a high-fibre diet of grasses and wild plants.

Family: Testudinidae Former name: *Geochelone pardalis; Testudo pardalis*

KEY FACTS

THE ANIMAL

Adult size	**30-45 cm** total length incl. tail
Weight	**13,000-20,000 g**
Lifespan	**50-100 years**
Active	**By day**
Lifestyle	**Terrestrial**
Habitat	**Semi-desert and savanna**
Difficulty	**Experienced**

CARE

Min. enclosure	**320 × 160 × 45 cm** L × W × H for 1 adult
Temperature, day	**24-32 °C**
Basking spot	**35-40 °C**
Temperature, night	**20-24 °C**
Humidity	**40-70%**
Water	**Water dish**
UVB	**Essential** Ferguson zone 3
Diet	**Plants**
Kept	**Singly or in pairs**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**5-30 eggs**
Clutches per year	**1-7**
Incubation	**150-450 days** at 28-32 °C

PROTECTION AND PAPERWORK

CITES	**Appendix II**
EU annex	**Annex B**
IUCN	**Least Concern (LC)**

About the species

Stigmochelys pardalis is a large tortoise with a high, domed shell (carapace) with almost vertical sides. Measurements in the text are shell length. Young and younger adult animals are marked with black spots, streaks and stripes on a yellow background, and the pattern has given the species its name: *pardalis* comes from Latin *pardus*, leopard. In older animals the pattern fades to a uniform brown or grey. The head and limbs are yellow, brown or greyish.

Most adults are 30-45 cm and weigh about 13 kg, but size varies greatly with origin: animals in the northern and southern parts of the range grow largest, up to 20 kg, and an unusually large animal can reach 70 cm and 40 kg. Females often, but not always, grow larger than males. The male has a concave plastron and a larger tail. The species is the fourth-largest tortoise in the world and in Africa second only to *Centrochelys sulcata*.

The genus *Stigmochelys* contains only this one species. Two subspecies have been distinguished, *S. p. pardalis* from southern Africa and *S. p. babcocki* from the east, but more recent work does not support the division, and it is not used here. Without a known origin it is hard to tell where an adult animal comes from, because size and colour vary so much, and animals from

Ethiopia and Somalia can grow very large. The species was formerly called *Geochelone pardalis* and *Testudo pardalis*.

S. pardalis is a quiet and peaceful tortoise. It does not climb or dig, and it does not show the aggressive mating, biting and ramming that the Mediterranean species do. It is shy and withdraws its head and legs, but with time it learns to know its keeper and comes over for food. It is still an animal that lives 50-100 years and needs real space: an adult tortoise needs a large outdoor enclosure and weighs 13 kg or more. It is not suited to an apartment, and in a cool northern European climate it must live indoors for most of the year.

Distribution and habitat

Stigmochelys pardalis is distributed in the dry and savanna-like parts of eastern and southern Africa, from South Sudan and Somalia in the north through Ethiopia, Kenya, Uganda, Tanzania, Rwanda and Burundi to the Democratic Republic of the Congo, Angola, Zambia, Malawi, Mozambique and Zimbabwe and on south to Namibia, Botswana, Eswatini, Lesotho and South Africa, where it reaches the Cape Province. It is usually absent from the humid forest areas of Central Africa.

It occurs from sea level up to about 2,900 m and has more different habitats than any other African tortoise. The species is common over most of its range. Collection for the pet trade, burning of farmland and hunting for food are possible threats, but have not yet led to a noticeable decline. An increasing proportion of the animals in the trade are captive-bred.

Read more: Buying animals: captive-bred, wild-caught and transport

> **Native range:** South Sudan, Ethiopia, Somalia, Kenya, Uganda, Tanzania, Rwanda, Burundi, Congo - Kinshasa, Angola, Zambia, Malawi, Mozambique, Zimbabwe, Namibia, Botswana, South Africa, Eswatini and Lesotho.

HABITAT

S. pardalis lives in savanna, grasslands, thorn scrub and semi-arid bush country. In very hot and very cold weather it takes shelter in abandoned burrows dug by foxes, jackals and aardvarks; it does not dig itself, except for the nest. It is diurnal, but less active in the hottest periods and in the dry season.

The temperature over most of the range lies between 21 and 38 °C, but in parts of the range it can freeze. The species likes to sit on slopes in the sun. It feeds on grasses, thistles, succulents and other herbs and eats berries and fruit when they are available. It also gnaws bones and similar items to obtain calcium, which it uses for the shell and eggshells.

Eggs and young have many enemies, including *Varanus albigularis*, *Bitis arietans*, jackals and crows. The adults have few natural enemies, but lions and hyenas have occasionally been seen attacking them.

Read more: Calcium, vitamins and supplements

Care

THE ENCLOSURE

Adults need an outdoor enclosure when the weather allows, in a northern European climate typically only in the warmest summer months (see Temperature). A pair can be kept on about 3 × 3 m, but more is better. The walls must be at least 45 cm high and opaque, so the animal cannot see through them, and they can be of wood or blocks. The species does not climb and does not dig, so escape is rare. Furnish the enclosure with bushes, grass and a shelter, and leave part of it bare soil, because the females dig their nests there. Slightly undulating terrain is good, because the species basks on slopes and likes to dig its nest in them. Fence against predators and dogs.

The rest of the year the animal lives indoors, for example in a large feeding tub, a plastic pool or a large pen on the floor. Indoors the area must be at least 8 times the shell length in length and 4 times in width, so at least 320 × 160 cm for an animal of 40 cm, because in a northern European climate the animal lives indoors for most of the year. Less space is often used successfully, but the general recommendation is 8 × 4 times the shell length. Larger areas also mean that the substrate needs changing less often.

For short periods and at night the substrate can be newspaper. In a permanent setup, grass clippings, peat, garden soil or a mix of topsoil and sand are suitable. Create different microclimates: a warm, slightly damp hide and a dry area under the heat lamp. An opaque edge of 15-30 cm at the bottom reduces the animal's pacing back and forth along the sides.

TEMPERATURE

Indoors there should be 24-32 °C by day, 35-40 °C at the basking spot and 20-24 °C at night. The figures for the basking spot and night are partly borrowed from the related *Centrochelys sulcata*.

The species does not hibernate. In the wild the temperature lies between 21 and 38 °C for most of the year. Depending on room temperature, heat may be needed at night or by day, so the animal can warm up to what digestion requires. Use halogen lamps for the basking spot and ceramic heaters, infrared lamps or heat panels for light-free background heat.

Outdoors the animal tolerates a wider temperature range, but move it indoors or provide heat when nights fall to 10-15 °C, or when the daytime temperature does not reach 21 °C. Cold causes respiratory problems, which turn into pneumonia if they are not treated.

Read more: Heat and temperature

HUMIDITY AND WATER

Humidity is not documented for the species; 40-70 % in the enclosure is an estimate. The species comes from savanna and semi-arid areas and is not a humid-climate species. Varying microclimates matter more than a single figure: always provide a damp shelter with a moistened substrate at the cool end, so that the animal can choose.

In the related *Centrochelys sulcata*, chronic dehydration deforms the shell, so that the scutes grow up into pyramids, and in young animals it can be life-threatening. It is therefore important that young animals do not dry out.

The animals like to drink standing water. Put out a shallow water dish, and check and clean it daily. The dish must not be so deep that the animal can get stuck. Newly hatched animals should be soaked once or twice a week in lukewarm, shallow water, where they drink and often pass droppings.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

UVB or natural sunlight is necessary, because otherwise the animal does not produce vitamin D3 and cannot absorb and use the calcium. Ferguson zone 3 is an estimate. The figures here are borrowed from *Centrochelys sulcata*: a UV index of 4.0-6.0 at the basking spot.

Use a T5 HO tube with 10-12 % UVB in a reflective fixture. The tube should hang 36-41 cm above the animal's back with no mesh in between and 23-31 cm if there is mesh. UVB tubes lose output and must be replaced regularly. Mercury vapour lamps provide both UVB and heat. The light should be on for about 11 hours in winter and 13 hours in summer, and an extra, powerful daylight lamp of about 6,500 K makes the set-up brighter.

Sun outdoors is best, and artificial light is unnecessary there, but the animal must always be able to seek shade.

Read more: Lighting and UVB

FEEDING

S. pardalis is a grazer and needs a high-fibre, calcium-rich diet. Grazing is the foundation: mixed grass and herbs, which you can grow yourself in the enclosure, for example lucerne and grasses. In summer wild plants such as dandelion, clover, plantain, mallow and thistle are good, but only plants you know for certain and that have not been sprayed.

Supplement a couple of times a week with leafy greens such as kale, turnip tops, mustard greens, dandelion (leaves and flowers), hibiscus (leaves and flowers), endive and vine leaves. Opuntia pads (spineless cactus pads) are suitable. Pumpkin, squash and other vegetables can be a minor part of the diet. Commercial tortoise food can be included.

Preferably give no fruit, and never more than 5% of the diet. Grass and herbs are the right food.

Young animals are fed every day. Lightly dust the food with calcium several times a week for the little ones. With a varied diet and UVB, multivitamins are not necessary. A cuttlebone in the setup provides calcium, and the animal bites it and keeps its beak worn down at the same time. Serve the food on a plate or a tray, so the animal does not eat the substrate.

BEHAVIOUR AND HANDLING

S. pardalis is diurnal, shy and calm. It withdraws its head and legs when disturbed, but with time learns to know its keeper and goes over for food. It should be handled rarely and is not a pet for small children.

If you have to lift the animal, take it from below and support both body and legs with two hands; a fall can injure or kill. Wash your hands before and after.

Unlike the Mediterranean species and *Centrochelys sulcata*, the species is not territorial, so several males and females can be kept together. In the breeding season, however, the males fight by ramming each other and chasing the females, which they can ram into submission. Keep several males together only in a large enclosure, and be ready to separate the animals. A single animal also does very well.

Breeding

SEXUAL MATURITY AND SEXING

The male has a concave plastron and a larger tail than the female. Females are often larger, but not always, because the size difference depends on origin. In the wild the animals become sexually mature after 12-15 years, so breeding requires patience.

MATING

The males fight over the females by ramming and pushing each other. They follow a female over long distances and can ram her into submission. During mating the male grunts. Watch the animals when they are put together, and separate them if a male is too rough with a female or another male.

EGG-LAYING AND CLUTCHES

The female lays 5-30 eggs per clutch and 1-5 clutches about 4-6 weeks apart, in some seasons up to 7. In the wild the eggs are laid from May to October, but the timing depends on origin. The female digs the hole with her hind legs; it is the only thing the species digs. She therefore needs bare soil or a tray of damp, loose soil.

INCUBATION

The eggs are placed in a plastic box with garden soil, vermiculite, perlite or peat and incubated at 28-32 °C. Warmth gives mostly females, cool incubation mostly males. Eggs from some origins benefit from a cold period of 30 days or more at 18-21 °C, which breaks diapause and gets the embryo going; if hatching is poor, it is worth a try.

The incubation period is 5-15 months (150-450 days) and depends on temperature and origin.

Read more: Incubating eggs

REARING THE YOUNG

The young are reared almost entirely indoors, so that you can monitor food intake and temperature and protect them from predators. Feed them daily, sprinkle the food with calcium several times a week, and soak them once or twice a week in lukewarm water. Keep them humid and warm enough for the shell to grow smooth. The shell can become deformed if the animals are kept too dry, and the young need a damp shelter.

Health and common mistakes

Respiratory problems arise when the animal is chilled or kept in poor conditions. The signs are laboured breathing, nasal discharge, an open mouth, swollen eyes, lethargy and loss of appetite. Minor problems can be corrected with more warmth, but without treatment they can develop into pneumonia. See a vet with experience in reptiles if the symptoms persist.

Typical mistakes in care: - Too little heat and too low night temperatures, especially outdoors on cool autumn and spring nights. - Too little UVB or calcium, which causes weak bones and shell. - Dehydration, which can cause a deformed shell and dehydration, especially in young animals. - Substrate that is swallowed along with the food.

Weigh the animal regularly. A sudden weight loss is often the first sign of illness, and reptiles hide illness. Wash your hands before and after contact with the animal and its equipment.

A new animal should be quarantined before it is housed with others.

Always ask someone who knows

This guide is a good place to start, but it cannot replace experience. Animals differ, and much of what matters most is learned from people who have kept the species for years. Talk to a breeder, an experienced keeper or a vet who knows reptiles and amphibians before you get the animal - and again if anything looks wrong.

The full guide with map and updates: herpy.org/en/tortoises-and-turtles/stigmochelys-pardalis