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TORTOISES AND TURTLES

Common Spider Tortoise

Pyxis arachnoides

Pyxis arachnoides is a small, critically endangered tortoise from the dry spiny forests along the south-west coast of Madagascar. The shell is high and domed with a web-like pattern, and adults are 10-12 cm long and weigh 200-400 g. The species is rare in captivity and reproduces slowly, and little is known about its care.

Family: Testudinidae Former name: *Pyxis aranoides; Bellemys arachnoides*

KEY FACTS

THE ANIMAL

Adult size	**10-15 cm** total length incl. tail
Weight	**200-400 g**
Lifespan	**50-70 years**
Active	**By day**
Lifestyle	**Terrestrial**
Habitat	**Semi-desert and dry forest**
Difficulty	**Expert**

CARE

Min. enclosure	**120 × 60 × 40 cm** L × W × H for 2 adults
Temperature, day	**24-30 °C**
Basking spot	**32-38 °C**
Temperature, night	**18-22 °C**
Humidity	**50-70%**
Water	**Water dish**
UVB	**Essential** Ferguson zone 3
Diet	**Insects and plants**
Kept	**Singly, in pairs or in groups**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**1 eggs**
Clutches per year	**1-2**
Incubation	**220-330 days** at 29-30 °C

PROTECTION AND PAPERWORK

CITES	**Appendix I**
EU annex	**Annex A**
IUCN	**Critically Endangered (CR)**

About the species

Pyxis arachnoides is one of the smallest tortoises. The carapace is elongated and highly domed, dark brown to almost black with a yellow radiating pattern, and the marginal scutes have a yellow lower edge. The species name comes from the Greek *arachne*, 'spider', presumably after the pattern, which resembles a web. The skin is olive green. The front part of the plastron can be movable on a transverse hinge. All measurements in the text are shell length. Adults are 10-12 cm, a few up to 15 cm, and weigh 200-400 g.

The species was described by Thomas Bell in 1827 and is the type species of the genus *Pyxis*, which has only one other species, *Pyxis planicauda*. Three subspecies are distinguished, *P. a. arachnoides*, *P. a. brygooi* and *P. a. oblonga*, which are genetically and visibly distinct. Here the species is described as a whole.

The species is critically endangered. The greatest threats are illegal collection for meat and for the pet trade, loss of habitat to farming, cattle grazing and logging, drought and climate change.

Distribution and habitat

Pyxis arachnoides occurs only on Madagascar, in a narrow belt along the south-west and south coast, no more than 10-50 km inland. The species originally lived along 555 km of coast from the Mangoky River to Lac Anony, but today its range is split into eight separate populations. *P. a. brygooi* lives furthest north, between the Manombo River and Morombe in the Mikea Forest, *P. a. arachnoides* in the middle and *P. a. oblonga* furthest south around Cape Sainte-Marie. The type locality is Soalara by the Bay of Saint-Augustin in the south-west.

Populations are declining. In one studied population numbers fell by 10.8 % from 2003 to 2011, and the habitat is disappearing at about 1.2 % a year. No exports from Madagascar have been recorded since the species was listed on CITES Appendix I in 2005, and almost all animals exported before then were wild-caught. Animals are still smuggled out of the country.

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

> **Native range:** Madagascar.

HABITAT

The species lives in dense, dry coastal forest, spiny thicket with euphorbias and plants of the family Didiereaceae, and scrub on sandy ground. Rainfall is low and irregular, and the rainy season runs from December to April. The animals eat young leaves, flowers, fruit, insect larvae and the droppings of larger animals.

In the dry season the animals dig in under bushes and dry grass tussocks, only just to the depth of the shell, and lie dormant for up to 7-8 months without food or water. When the rains arrive the dormancy ends and mating begins.

The habitat is under pressure from farming, cattle grazing and logging. Because the survival of adults is decisive for the future of a population, collecting adult animals has particularly serious consequences.

Read more: Brumation and the seasons

Care

THE ENCLOSURE

Little documented information exists on the care of *Pyxis arachnoides*. The species is kept and bred mainly in zoos and by specialists. The care advice therefore rests on the habitat and on *Astrochelys radiata*, which lives in the same dry spiny forest in south-western Madagascar. Figures borrowed from that species or estimated are noted under the individual sections. The species is not suitable for beginners.

The enclosure must provide plenty of floor area: at least 8 times the shell length in length and 4 times in width, that is 120 × 60 cm for a pair of 15 cm animals, and at least 40 cm high. Larger is better. In a cool climate the animal can only be outdoors in summer, in a secure, sunny run with shade and a heated shelter: if it gets cooler than about 13 °C, it must come indoors. Indoors, the substrate must be firm yet diggable and able to hold moisture: a mixture of soil and wood chips about 10 cm deep, replaced every three to four weeks. Provide several hides, flat stones to bask on and edible plants, and avoid fine sand and small gravel, which the animal may swallow.

TEMPERATURE

The animal must be kept warm. During the day the temperature should be 24-30 °C, with a basking spot of 32-38 °C under a heat lamp at one end, measured on the substrate. At night the temperature drops to 18-22 °C. The figures are borrowed from *Astrochelys radiata* and have not been measured for the species. Use a radiant heat panel or halogen lamps with a thermostat, and if needed a ceramic heat emitter that holds a steady night temperature without light. Provide a cooler end the animal can retreat to.

The long dry-season dormancy of the wild should not be imitated in the enclosure, where temperature and food are kept steady all year.

Read more: Heat and temperature

HUMIDITY AND WATER

Humidity should be around 50-70 %. The figure is borrowed from *Astrochelys radiata* and should be seen as a starting point. Keep the substrate slightly damp, and mist the enclosure now and then. Tortoises from dry regions are most active during and just after rain, and misting offers a cool retreat. Provide a large, shallow dish of clean water, changed daily, and a lukewarm bath once a week.

The animal can take up water through its food but must always have clean water to drink.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

P. arachnoides is diurnal. Natural sunlight is best, and indoors the species needs UVB light with a basking spot in Ferguson zone 3. The zone is borrowed from *Astrochelys radiata* and has not been measured for the species. A mercury vapour lamp provides heat, UVA and UVB. The light follows the seasons with about 12 hours a day. Glass and acrylic block UVB.

Read more: Lighting and UVB

FEEDING

In the wild *P. arachnoides* eats young leaves, flowers, fruit, insect larvae and the droppings of larger animals. The diet in captivity is mainly vegetarian and should be high in fibre and as varied as possible, as for *Astrochelys radiata*: weeds, grasses, wild herbs and edible plants in the run, so that the animal can graze all day. A few insect larvae can be given now and then; how much animal food the species needs is not documented.

Dust the food with a calcium supplement, and keep a cuttlebone available. Feed daily in small portions.

Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

Handle the animal as little as possible, especially young animals. When threatened it withdraws its head, legs and tail into the shell. Young tortoises of closely related species are stressed by a lot of handling and changing surroundings, and a fixed routine with daily feeding, weekly cleaning and calm checks is best.

The animals can be kept singly, in pairs or in a small group. The size above applies to a pair; for a third and fourth animal, add at least 10 % to the floor area. Animals that do not get along are kept apart.

Breeding

SEXUAL MATURITY AND SEXING

Sex differences, age and size at sexual maturity are not documented for the species. The species can live for around 70 years; the lower limit in the box is an estimate.

MATING

Mating begins with the first rains after the dry season. Further details on mating are not documented for the species. In *Astrochelys radiata* the male follows the female and bobs his head; provide plenty of hides.

EGG-LAYING AND CLUTCHES

Egg laying takes place in the rainy season. The female lays only a single egg at a time and 1-2 eggs per season, which she buries. Provide her with a deep, loose and slightly damp layer of soil where she can dig a nest.

INCUBATION

The egg hatches after 220-330 days. Incubation temperature is not documented for the species; 29-30 °C is borrowed from *Astrochelys radiata* and should be seen as a starting point. Place the egg in an incubator with damp vermiculite, and do not turn it. In *Astrochelys radiata* a rest period in the middle of incubation gives a better hatching result; whether this applies to *P. arachnoides* is not documented.

Read more: Incubating eggs

REARING THE YOUNG

The hatchling weighs around 12 g and is independent from the first day. Rearing has not been described in detail for the species. As a starting point, follow the recommendations for *Astrochelys radiata*: a steady night temperature, a fixed day and night rhythm and daily feeding, with as little handling and as few changes as possible. Young animals should be outdoors in

fresh air and sun as early and as often as possible.

Health and common mistakes

Care-related diseases are not documented for the species. In confiscated *P. arachnoides* and *Astrochelys radiata* in Madagascar a bacterium of the genus *Mycoplasma* has been found, a genus known from respiratory disease in tortoises. Newly imported or confiscated animals should therefore be quarantined.

- Respiratory infection: runny nose, wheezing breathing and mucus in cold or overly dry air.
- Emaciation and dehydration after transport: soak in shallow, lukewarm water.
- Parasites: have a vet examine a faecal sample before the animal is kept with other tortoises.

Contact a vet with reptile experience if the animal does not eat, loses weight, has a runny nose or loose droppings. New animals must be quarantined before they are kept with other tortoises.

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.