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TORTOISES AND TURTLES

Elongated Tortoise

Indotestudo elongata

Indotestudo elongata is a medium-sized tortoise from forests and scrub in south-east Asia and north-eastern India. The shell is pale yellow with black blotches, and adults reach about 30 cm. The species is shy, most active at dawn and dusk, and needs warmth, high humidity and a water tub to bathe in. It is critically endangered in the wild, and only captive-bred animals can be kept responsibly.

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

KEY FACTS

THE ANIMAL

Adult size	**25-35 cm** total length incl. tail
Weight	**3,000-3,500 g**
Lifespan	**30-50 years**
Active	**At dusk**
Lifestyle	**Terrestrial**
Habitat	**Dry forest and rainforest**
Difficulty	**Experienced**

CARE

Min. enclosure	**240 × 120 × 40 cm** L × W × H for 2 adults
Temperature, day	**26-30 °C**
Basking spot	**30-32 °C**
Temperature, night	**18-20 °C**
Humidity	**70-85%**
Water	**Water dish**
UVB	**Recommended** Ferguson zone 2
Diet	**Fruit, plants, vertebrates and worms/snails**
Kept	**Singly or in pairs**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**48-96 months**
Clutch size	**3-5 eggs**
Clutches per year	**1-2**
Incubation	**100-120 days** at 29 °C

PROTECTION AND PAPERWORK

CITES	**Appendix II**
EU annex	**Annex B**
IUCN	**Critically Endangered (CR)**

About the species

Indotestudo elongata is a medium-sized tortoise with an elongated, relatively flat carapace. The shell is greenish or yellowish to caramel-coloured, and each scute has an irregular black blotch or smudge, which can fill most of the scute or be broken up and indistinct. Variation is great: some animals are almost uniformly pale yellow, others almost entirely black. The head is pale yellow, and the skin is cream-yellow to pale grey. The rim of the carapace is strongly serrated in young animals and almost smooth in old ones.

All measurements in the text are shell length (carapace). Adults are typically about 30 cm and weigh about 3-3.5 kg; the largest reach about 35 cm. The female is broader and rounder seen from above than the male. The male has a longer, thicker tail and a concave plastron, while the female's plastron is flat. The female's rear claws are longer and more curved than the male's, probably because they are used to dig the nest.

In the breeding season the skin around the eyes and nostrils turns pink in both sexes, most clearly in the male. The species is shy and reserved, but gets used to its keeper and readily comes over inquisitively when food is on the way. It is not an animal to be handled. Newly hatched animals are small and need more stable conditions than adults; animals from the wild are often weakened and do poorly, so only captive-bred animals should be considered.

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

Distribution and habitat

Indotestudo elongata is found over a large area from Nepal, Bhutan and Bangladesh through north-eastern India (including Assam, West Bengal, Bihar and Mizoram) to Myanmar, Thailand (including Phuket), Laos, Cambodia, Vietnam, western Malaysia and southern China (Yunnan). The species was described from southern Myanmar.

The species is assessed as critically endangered and is declining sharply throughout its range. The greatest threat is the hunting of the last wild populations for food markets in China and the rest of East Asia, where the shell is also used in traditional medicine. In addition there is loss of habitat and collection for the pet trade.

> **Native range:** Nepal, Bhutan, Bangladesh, India, Myanmar (Burma), Thailand, Laos, Cambodia, Vietnam, Malaysia and China.

HABITAT

Indotestudo elongata lives in tropical and subtropical forests and scrub. It is typically found in deciduous forest, for example teak forest, where the air is humid, but it can also occur in hot, dry areas, so the species is adapted to both humid and drier periods. The animals spend a lot of time in the leaf litter and dig into piles of leaves or at the foot of large plants.

Activity is greatest early in the rainy season, when the breeding season also falls. The animals are most active at dawn and dusk, avoid strong sunshine and seldom show interest in basking. After heavy, warm downpours they come out to drink, eat, empty the gut and mate. The food is leaves, herbs and especially fallen fruit, and the animals also take snails, worms and carrion.

Care

THE ENCLOSURE

Indotestudo elongata needs a large, open floor area with a moist substrate and many hides. Floor area matters more than height. Indoors, an open tortoise table or a large plastic tub works best. A pair of adults needs at least 240 × 120 cm with sides of about 40 cm, and each extra tortoise requires more space. A closed glass terrarium is unsuitable because the air becomes stagnant.

The substrate is moist but not wet, and at least 10 cm deep, for example a mixture of three parts coconut soil or fertiliser-free topsoil and one part sand. Put a layer of sphagnum and plenty of leaves on top, so the moisture is held, and avoid bark and cedar shavings. The animal likes to dig down and spends a lot of time hidden. Provide several hides on the cool side, for example curved cork bark, large leaves and piles of hay, and water the soil under the preferred hide once or twice a week, so it is damper than the rest.

In a warm summer the animals do well outdoors in an enclosure with dense planting, shade and a shallow puddle. The enclosure must be at least 180 × 240 cm for a pair, have opaque walls of about 60 cm and be secured against escape and predators. The animals must come indoors when the night temperature falls below 18 °C, and in a cool northern European climate the season is therefore short. If several males are kept, the area must be doubled and divided up with bushes and logs. Keep the species apart from other tortoise species.

TEMPERATURE

The air should be 26-30 °C by day. The animal does not seek sun, but a gentle warm zone of 30-32 °C under a heat lamp at one end, measured at shell height, gives the option to choose, and the hides are placed at the cool end, not directly under the lamp. At night the temperature may fall to about 18-20 °C. A heat mat under part of the floor or a ceramic heat emitter without light can maintain the warmth, and everything is controlled by a thermostat.

The species does not hibernate in the true sense. In winter the daytime temperature can be lowered to about 24 °C. Animals that are to be bred can be given a short cooling period of about three months down to 16-18 °C with a hide of hay, followed by warming and damp days, which triggers mating. This is an option, not a requirement, and the animals can also be kept and

bred at constant warmth.

Read more: Heat and temperature

HUMIDITY AND WATER

Humidity should be high, about 70-85%, with a dry and a humid zone, so the animal can choose for itself. The substrate is moist but not wet, and the hides are dampened regularly. A persistently wet substrate, on the other hand, causes shell and respiratory problems.

There must always be a water tub, large enough for the animal to sit half submerged but shallow enough for it to climb out without difficulty. The species drinks a lot and likes to sit in the water for hours. The water is changed every day. Young animals are bathed once or twice a week in lukewarm water that reaches only the upper edge of the plastron, so they drink and empty the gut. Heavy misting or a rain system a couple of times a week brings the animals out.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

Indotestudo elongata is a forest dweller and avoids strong light, but needs vitamin D3. The best solution is time outdoors in partial shade, where some sun gets through; glass and acrylic block UVB. Indoors, use a T5 HO tube with a low UVB proportion (Ferguson zone 2, which suits a shy forest species) in a reflector over part of the setup, so the animal can move out of the light, and the tube must not hang so close that it bothers the eyes. Diet and calcium supplements complement it.

Supplement with daylight for about 12 hours a day. Replace the UVB tube according to the manufacturer's instructions, because the output falls long before it stops shining. Do not use coloured light.

Read more: Lighting and UVB Read more: Calcium, vitamins and supplements

FEEDING

Indotestudo elongata is omnivorous with plants as the main component. The base is leaves such as romaine lettuce, endive, dandelion, plantain and hibiscus leaves with grated vegetables such as courgette, sweet potato, carrot, peas and cucumber. About a quarter of the grated part can be fruit such as apple, pear, banana and melon, because fallen fruit is a large part of the diet in the wild. Give a varied diet and never just one kind of vegetable.

A small amount of animal protein once or twice a week is suitable: snails, earthworms, thawed pinkie mice and a little soaked, lean cat food or prepared food for forest tortoises. Large amounts of dog food and fatty meat are unsuitable. Adults are fed every third day and juveniles every second day until they are about two years old.

Sprinkle the food with calcium with D3 and occasionally a vitamin mix, most often indoors. Always keep a cuttlebone available. Ivermectin must never be used, because it is fatal to tortoises.

BEHAVIOUR AND HANDLING

Indotestudo elongata is shy and most active at dawn and dusk, but also becomes active after warm rain. The animal needs several hides and must not be disturbed all the time. Lift the animal only when necessary, from under the plastron with both hands.

The species can be kept in pairs or in a small group with more females than males. Males may chase and shove one another and pursue females, especially in the breeding season, so there must be space, bushes and hides, and a third male requires a markedly larger area. An animal that runs along the wall often has too little cover or too little space.

Breeding

SEXUAL MATURITY AND SEXING

The male has a longer, thicker tail and a concave plastron; the female is broader and has a flat plastron and longer, more curved claws on the hind legs. Males reach sexual maturity much earlier than females: about 4 years against 6-8 years in females, depending on feeding and rest in winter.

MATING

The species is not seasonal and can mate all year round. Mating is triggered by rain, and in breeding a short cooling for about three months followed by warming to 28-32 °C and heavy misting that imitates rain helps. The male is eager. In the breeding season the skin around the eyes and nostrils turns pink. Give the female cover so she can get away.

EGG-LAYING AND CLUTCHES

The female typically lays two clutches a year with 3-5 eggs in each, depending on her size, with four to six weeks in between. She digs a nest in loose, slightly moist soil, so give her a quiet area with at least 30 cm of loose soil and sand. Protein and calcium in the diet are important for healthy, viable eggs. Give her extra calcium during the period.

INCUBATION

The eggs are moved carefully to an incubator without being turned and incubated on a slightly moist medium at about 29 °C. The young hatch after 100-120 days. The effect of temperature on sex ratio is not documented for the species, so keep a stable temperature.

Read more: Incubating eggs

REARING THE YOUNG

The young manage on their own from hatching. They are kept in a small, humid, warm setup with hides and a shallow water dish, bathed once or twice a week and fed every second day with narrow leaves, vegetables and a little animal protein. Keep them apart from adults, and avoid protein- and energy-rich food, which can cause a lumpy shell.

Health and common mistakes

The species is hardy when care is correct, and most problems stem from faults in husbandry:

- Respiratory infection: a runny nose, bubbling nostrils and an open mouth from cold, draughts and stagnant air. Requires a vet.
- Metabolic bone disease: soft shell and deformed legs from too little UVB or calcium.
- Pyramiding: a lumpy shell from a diet too rich in protein and energy or air that is too dry in juveniles.
- Dehydration and too little water: the animal must be able to drink and bathe every day.
- Parasites: new animals are quarantined for up to 90 days with a faecal test at the vet before they join other tortoises. Ivermectin must not be used.
- Animals from the wild are weakened and do poorly.

Weigh and measure the animal regularly and keep a log of weight and appetite. Contact a vet with reptile experience if the animal loses weight, does not eat, has discharge from the nose or seems lethargic. All reptiles can carry *Salmonella*; wash your hands after contact.

Read more: Quarantine and hygiene Read more: Common diseases and signs of illness

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.