

***Indotestudo elongata* - The Elongated Tortoise** - Darrell Senneke
Copyright © 2003 World Chelonian Trust. All rights reserved



Introduction

The Elongated or Yellow Tortoise belongs to the Genus *Indotestudo*. Included in this group are both the Elongated tortoise, *Indotestudo elongata* and the Travancore tortoise, *Indotestudo forstenii*.

Description

SIZE: *Indotestudo elongata* is a medium to large size tortoise. Typically, they are about 30 cm (12 inches) long and 3.5 kg (7 pounds) as an adult though there are larger specimens. Females tend to be wider and more rounded than males. In addition to this, the males have a tail that is much larger than that of the female and a concave plastron while the plastron of a female is completely flat. Another difference between the sexes is that the posterior claws of females are markedly longer than male hind claws, and more curved - the belief is that this is to facilitate nest building.

APPEARANCE: The ground color of the shell is caramel colored to dark yellowish brown, with blotches of black on each scute - this can be variable with some tortoises appearing totally caramel colored and others nearly completely black. This difference in color coupled with a marked difference in size of area populations has led some researchers to believe that there may be subspecies of Elongated tortoises yet to be determined.

The Elongated tortoise possesses a smooth shell which seems to be quite resistant to the deformities often encountered in captive tortoises because of poor (high protein) diets. There has been little research on *Indotestudo elongata* diet in the wild but the supposition is that their resistance to pyramiding is a result of a semi-aquatic, moderate protein adaptation.

Large scales cover the anterior parts of the front legs, while the hind legs lack this protection. The soft parts of this species are gray to yellow. The head is yellow /tan except in breeding season where both sexes take on a pinkish coloration around the nares and eyes.

Distribution and local variation.

The species has a huge range in Asia (see map) and is found from Nepal to Malaysia. There has been no attempt to break this species down into area "types" though it must be kept in mind that as they are found over such a large range that the requirements may vary from tortoise to tortoise as to habitat preferences.

Elongated Tortoise - *Indotestudo elongata*

- **Location** - Southeast Asia, India to Borneo
- **Habitat** - moist, broadleaf forests of Southeast Asia
- **Size** - 34 cm (13 inches)
- **Diet** - dark leafy greens, fruits, slugs, worms
- **Conservation Status** CITES Appendix II
- **Threats** - habitat destruction, Asian food markets, pet trade
- **Alternate Names** - Yellow-headed Tortoise, Elongate Tortoise

Status in the wild.

THREATS: The Elongated tortoise is commonly found in the Asian food markets and as a result of this is under dire pressures in its entire range. It is the most common tortoise shipped to the Chinese food markets from Vietnam.

The species has been placed on CITES Appendix II, which regulates the legal international trade. Sadly, the enforcement of this law does not appear to be slowing the trade in this species as Elongated tortoises are still openly offered for sale in Chinese food markets and are featured on importer's price lists for as little as 60 dollars (U.S.)

Natural history

HABITAT: *Indotestudo elongata* is primarily a damp forest species though it can be found in dry areas as well. It is a crepuscular tortoise, becoming active in the twilight hours before dawn or after sunset. Its large eyes are well adapted to low light levels.

DIET: *Indotestudo elongata* has a omnivorous diet consisting of fruits, leafy greens, worms, slugs and carrion if available.

Reproduction

MATING: Male Elongated tortoises engage in very aggressive courtship behavior which can result in injury to the female if a large enough habitat is not provided. Male aggression against other males can also be very damaging and it is suggested that only one male be housed in an enclosure. In courtship, the male engages in ramming behavior as well as vigorous biting about the head, neck and front legs of the female. The male loudly vocalizes during mating, emitting a harsh, raspy sound while exhaling.

EGG LAYING: A female Elongated tortoise preparing to nest becomes restless, often attempting to escape the enclosure. While constantly striding about the habitat, she will stop and sniff the earth from time to time as she selects a spot. Generally, the spot chosen is damp and free of vegetation. Once she has found a suitable spot, she digs a flask shaped nest 15 - 20 centimeters deep with her back legs. If the soil is too hard and dry, she will wet the spot by emptying her bladder. She then proceeds to lay a clutch of 2-4 eggs in the excavated nest, replaces the soil with her back legs and flattens the spot with her plastron. Elongated tortoises typically lay 3 clutches a season in captivity.

HATCHING: The eggs of the Elongated tortoise are huge compared to most other species measuring 50 X 40 mm, are hard-shelled and weigh 42 - 46 grams. There is a strong indication of diapause in this species with clutches incubated 28 degrees C taking from 130 - 190 days to hatch. Increasing the temperature frequently results in doubled vertebral scutes. The newly hatched young are 50 - 55 mm SCL and weigh 30 - 35 grams.

In communication on the Asian Turtle Crises Internet List serve Peter Paul Van Dijk made these comments about his researches into the natural incubation conditions of *Indotestudo elongata*.

"I've done actual field work on this (sticking a temperature data logger in an actual wild nest) and the natural temp profile is pretty complex. In western Thailand, eggs are laid towards the end of the wet season (about October), when soil is soft and damp and temp at nest depth is about 25-30 degrees Celsius.

Subsequently, temp declines gradually through the cool dry season (Dec-Jan), not getting much above 25-28 C. During this time the soil dries out and becomes almost as tough as concrete. By February, the hot season arrives, and nest temperatures vary between 25 and a little over 30 C. Daily

fluctuations are in the order of 3-5 degrees. Eventually, the wet season arrives in May and the hatchlings emerge when the soil is soaked and soft again. That's right, they are in the nest for 7-9 months. I suspect there is some diapause, and the hatchlings may just be incarcerated in the hard soil but otherwise ready to emerge during the latter part of this period. It would be challenging to imitate such conditions in an incubator."

Care in captivity

GENERAL: For a species that is commonly kept little is known of their requirements in captivity. The following is what works for me, in different climates different approaches may need to be taken.

I maintain my *Indotestudo elongata* outdoors once nighttime temperatures stay above 15 degrees C. They appear to be fairly cold tolerant and can be seen actively hunting on days when the temperature exceeds 20 degrees C. Interestingly this is also a trait of *Manouria emys*, which lives in many of the same areas in the wild. Elongated tortoises do not appreciate bright lighting and are only seen to bask early on cool mornings. Because of this, I allow their pens to become overgrown, supplying them with the shady areas that they seem to require. I also install a shallow pond in their habitat, making certain to allow for ease of egress, as they frequently soak and swim on a daily basis in warm weather.

Diet in captivity consists of leafy greens with about 10% fruit added. In addition to this, I supply them with a higher protein option, usually earthworms, on a weekly basis. Additional calcium supplementation is essential. Powdered calcium can be sprinkled all foods. It is suggested that one use calcium supplemented with vitamin D3 if the animal is being maintained indoors and calcium without D3 if it is outdoors. Provision of a cuttlefish bone, which can be gnawed if desired, is also recommended.

Indoors I maintain them on a substrate of cypress mulch which is kept damp by frequent misting - in addition to this they are provided with a large soaking pool at all times. Photographic developing trays sunk into the surface of the indoor habitat are a good method of providing this soaking option.

BREEDING: Females actively start breeding at about 23 cm. Males and females are maintained separately unless they can be provided with a large habitat. I would estimate that a minimum of 5 meters by 3 meters is necessary for one pair though females and juveniles can be housed together in higher density. Care must be taken to examine the female on a daily basis for injuries sustained by contact with the male. In order to give the female relief from the constant harassment from the male I suggest putting logs and other sight line obstructions into the pen. When the female is receptive, she will lift the posterior of her shell to allow the male access.

After nesting, the eggs are removed to an incubator and placed into containers of vermiculite moistened with water at a 1 - 1 ratio by weight. The incubator is maintained at 28 degrees C. Hatchling can be expected between 120 and 180 days. Hatchlings are housed in the same manner as the adults and show a stronger preference for protein (worms, slugs) at this age.

At the present time there is no known TDS data for the Elongated tortoise, there is still much work to be done with this species.

It should be noted that turtle and tortoise care research is ongoing. As new information becomes available we share this on the World Chelonian Trust web site at www.chelonia.org. Serious keepers find it to be a benefit to have the support of others who keep these species. Care is

discussed in our free online email community, which may be joined from the web address above. Please contact us about the many benefits of becoming a member of the World Chelonian Trust.

Further reading:

Tortuga Gazette 28(3): 1-3, March 1992, The Elongated Tortoise, *Indotestudo elongata* by Betsy McCormick

Indotestudo elongata Hatchling Care Sheet, World Chelonian Trust web site - Darrell Senneke

Encyclopedia of Turtles - Peter Pritchard, 1979

-

World Chelonian Trust
www.chelonia.org
685 Bridge Street Plaza PMB# 292
Owatonna, MN
55060