



Notes on Indian Star Tortoises (*Geochelone elegans*) Confiscated from an Old Temple in Vadodara, Gujarat, India

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Photographs by the author.

On 9 October 2016, the local forest department confiscated 21 (9 males and 12 females) Indian Star Tortoises (*Geochelone elegans*; Fig. 1) from the Hindu Vitthalnath Temple in Mandvi, Vadodara, Gujarat, India. This is one of the oldest

temple complexes in the city, built about two hundred years ago by the Gaekwads, erstwhile rulers of Vadodara. The temple's head priest indicated that tortoises are considered holy and traditionally have been retained on the premises for more than a century.



Fig. 1. Indian Star Tortoises (*Geochelone elegans*) feeding on hibiscus flowers at the Vitthalnath Temple, Vadodara, Gujarat, India.



Fig. 2. Dorsal scutes of an Indian Star Tortoise (*Geochelone elegans*) showing the increasingly smaller growth rings along the beveled edges of the scutes.

Temple devotees revere these reptiles, worship them regularly, and look after them carefully. Most of the confiscated animals had been brought to the temple for worship by local devotees.

The claim by the head priest that these tortoises were very old and had been held captive for almost two centuries caught my attention and raised questions regarding the actual

age of the tortoises. I carefully examined the confiscated animals and recorded color and weight, and measured shell size and shape using a flexible measuring tape and dial calipers. I estimated the age of each tortoise by counting growth rings on the first vertebral scute. This method has known limitations, especially when determining the age of older animals, as the one-ring-per-year rule is difficult to apply as growth slows with age, causing rings to be smaller and difficult to see. Ultimately, the last rings become indistinct and the edge of the scute becomes beveled (Fig. 2).

Results (Table 1) were not what I had been led to expect. Only ten tortoises showed signs of substantial age. The remaining eleven animals were smaller and younger. Mean (range) curved carapace length (CCL) and weight of four males was 26.1 cm (25.5–26.8 cm) and 3.10 kg (2.90–3.40 kg), respectively, and estimated ages were 35–55 years; corresponding values for six females were 30.4 cm (28.2–32.0 cm), 4.13 kg (3.10–5.30 kg), and 40–58 years (Fig. 3).

Although quite large, none of the tortoises were as old as the priest had claimed. Males rarely exceed 26 cm CCL (Moll 1989; Fife 2007; D’Cruze et al. 2018). De Silva et al. (2017) provided ranges for CCL and weight of 69 Sri Lankan males

Table 1. Measurements, weights, and estimated ages of ten large Indian Star Tortoises (*Geochelone elegans*) confiscated from the Vithalnath Temple, Vadodara, Gujarat, India (measurements in cm, weights in kg, estimated ages in years).

Sex	Male	Male	Male	Male	Female	Female	Female	Female	Female	Female
Estimated Age	35+	48+	50+	55+	46+	42+	58+	54+	52+	40+
Carapace Length – Curved	26.5	26.8	25.5	25.5	28.2	28.5	31.5	32.0	32.0	30.0
Carapace Length – Straight	34.0	35.7	33.2	33.0	36.0	37.0	31.8	39.7	40.0	37.2
Carapace Width – Curved	18.5	18.7	19.0	18.2	13.0	16.0	21.0	22.8	23.5	19.5
Carapace Width – Straight	31.0	33.0	31.7	32.0	36.0	38.0	40.4	41.0	40.8	36.2
Plastron Length – Straight	22.5	24.0	23.0	22.0	24.0	24.5	27.5	26.5	28.0	25.5
Height	14.4	14.7	14.0	12.3	18.0	14.5	16.5	15.5	17.0	16.1
Weight	3.000	3.400	2.900	3.100	3.150	3.100	3.900	5.000	5.350	4.300

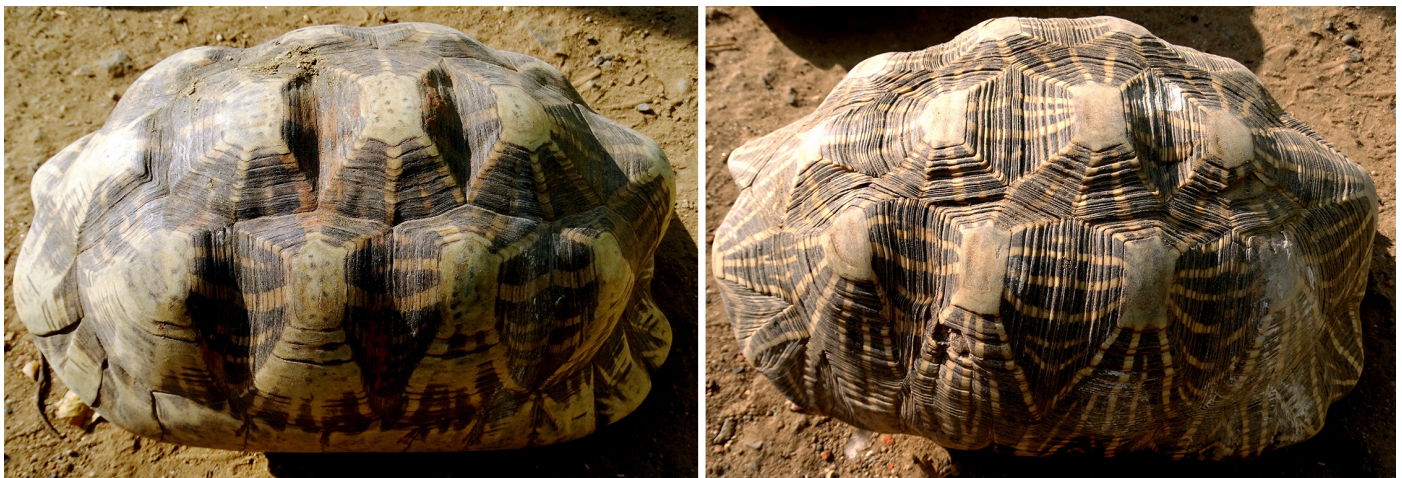


Fig. 3. Lateral views of the largest male (left) and female (right) Indian Star Tortoises (*Geochelone elegans*) confiscated from the Vithalnath Temple, Vadodara, Gujarat, India.

(26.6–27.2 cm; 1.395–2.004 kg). The largest female was from Sri Lanka and measured 57.5 cm CCL and 14 kg and was 40–45 years old (based on growth rings of a coastal scute; De Silva et al. 2017). The largest female from western Indian measured 50.5 cm CCL and 8.960 kg with an estimated age of 55 years (Vyas 2011).

Many Hindu Gujaratis (= people of Gujarat State) worship reptiles (Vyas 2003), especially tortoises, as “*Kurma Dev*” (in Sanskrit, *kurma* = turtle or tortoise, *dev* = god) or living deities within temples (Vyas and Parasharya 2000; D’Cruze et al. 2015). In addition, some Gujaratis keep tortoises as pets. Most are unaware that all tortoises are Schedule-IV species protected under the Indian Wildlife (Protection) Act of 1972, making the possession of these animals a legal offense.

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