NOTES ON GROWTH AND MATURITY OF THE INDIAN STAR TORTOISE (*Geochelone elegans*)

Raju Vyas

On April 4,1989, I received two hatchlings of Indian star tortoise (*Geochelone elegans*) from my Curator, Sayaji Baug Zoo, Vadodara. Both the hatchlings were size-wise slightly different because both of them were born in the last breeding season of July 1988 within a difference of one week, from the same clutch. The smaller one was injured on its left side marginal including gular and humeral scutes. The hatchling was treated with antibiotic cream (Lorexene, Alkali Chemical India). Both the hatchlings were kept in the same condition and fed regularly with different plant leaves and vegetable matter (Table 1) *ad libitum* and taking all necessary care for their healthy growth.

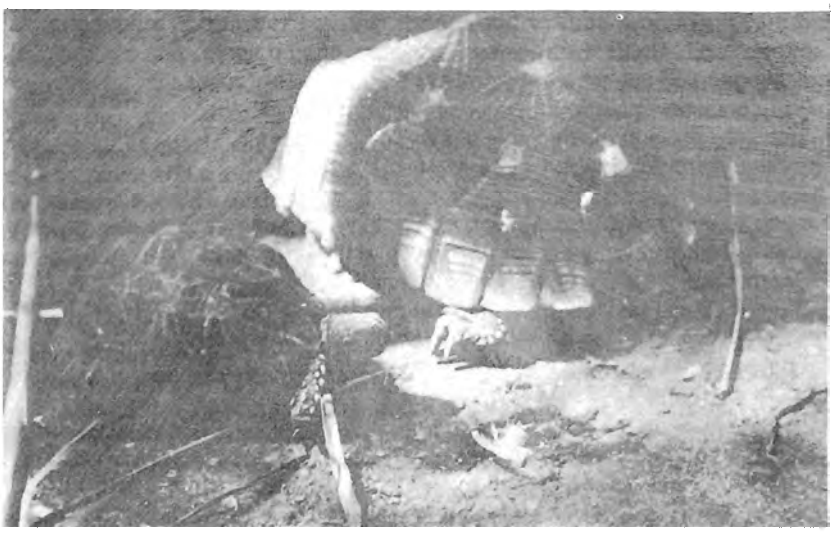

Fig 1. A pair of star tortoise (Geochelone elegans) showing sexual dimorphism - female comparatively larger than the male

Both hatchlings (A and B) were measured once in a year in the month of July (Table 2). At four years of their age, I noticed that both were females and the growth of A was faster than that of B and B was stunted (young ones which fall sick in early stages) grow slower than others of the same batch, was observed in *Crocodylus palustris, C. porosus and Python molurus*. Only the big female A laid three elongated eggs the first time (4.41 x 2.76 cm and weight 16.3 gm) on October 12, 1995, at the age of 7.3 years.

Though our observation supports the view of Das (1995) that Indian star tortoise attains maturity at the age of 6-7 years, there are two divergent views in turtle workers. While some consider that the maturity of turtle is related with age (Risley, 1938) others view that it is related to its size (Hidebrand. 1932; Cagle, 1948 and Verma and Sahi, 1996). Present single example is not sufficient for any opinion as it requires more data and therefore opinion could be arbitrary.

I thank Mr. V. A. Jadeja, Curator, Sayaji Baug Zoo, Vadodara for encouragement and facilities provided for the study.

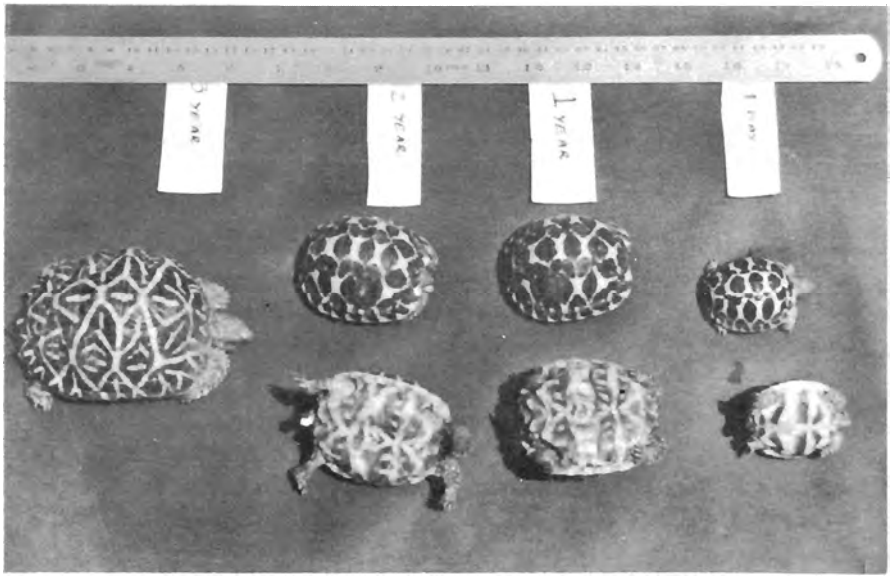

Fig 2. Age-wise comparison of growth and colour marking, from one day to three year old star tortoise.

REFERENCES

Cagle, F.R. 1948. Sexual maturity in the male turtle *Pseudemys scripta troostii*. *Copeia* : 108-111.

Das, I. 1995. *Turtles and Tortoises of India*. WWF-India, Oxford University Press, Bombay.176 pp.

Hidebrand, S.F. 1932. Growth of diamond back terrapins, size attained, sex-ratio and longevity. *Zool.* 9:557-563.

Risley, P. L. 1938. Seasonal changes in the tests of musk turtle *Sternotherus odoratus*. *J. Morphol.* 63:307-317.

Verma, A. K. and D.N. Sahi. 1996. On the size at maturity in the male freshwater turtles, *Kachuga tecta* and *K. smithi* in Jammu. *ZP.* 11(7):3 & 5.

Sayaji Baug Zoo, Vadodara - 390 018, Gujarat.

TABLE 1: List of plants and vegetables fed to *Geochelone elegans* in captivity.*

Scientific name	Local name
Plant leaves	
Calotropis spp	Akado
Coriandrum sativum	Kothmir or Dhania
Euphorbia spp	Thor
Medicago sativar	Lachko or Ghoda Ghas
Tridax procumbens	Brami or Vandar Puchhu
Vegetables	
Abelmoschus esculentus	Bhindo
Capsicum spp	Simla Mirch
Cuamopsis tetragonoloba	Guwar
Lagenaria sieeraria	Dudhie
Lycopersicon lycopersicum	Tamatar

*Listed alphabeticaly.

TABLE 2 - Measurments of captive Indian star tortoise at Sayaji Baug Zoo, Vadodara. (measurments in cm and weight in gm)

Age in yrs.	Date of measurement	Straight carapace length		Straight carapace width		Plastron length		Body height		Body weight	
		A	B	A	B	A	B	A	B	A	B
1	1989	6.50	5.43	5.25	4.95	5.30	4.88	4.05	3.46	65	35
2	1990	7.50	6.30	6.00	5.00	6.00	4.90	4.76	3.80	125	47
3	1991	9.00	6.70	7.14	5.50	7.42	5.54	5.62	4.11	194	83
4	1992	11.60	8.37	8.75	6.17	9.50	6.77	7.25	5.23	395	145
5	1993	14.00	9.70	10.10	8.00	11.10	8.00	8.40	6.15	650	230
6	1994	15.00	10.35	11.05	8.05	12.20	8.70	9.10	6.35	850	300
7	1995	16.00	11.50	12.00	8.10	13.60	9.40	10.20	6.95	1150	325
8	1996	20.30	14.60	13.00	9.85	15.00	11.80	11.00	8.60	1450	600

for LIFE !

Did you ever consider investing for LIFE in a worthy cause, such as positive and constructive, scientific, sensible and sensitive conservation, education, research and animal welfare ?

LIFE subscriptions are helpful to both you and us by saving administration, aggravation and expense as well as improving our chances for long-term survival. It is also useful for us to approach our large donors to show that people have confidence in us.

LIFE subscription is still Rs. 1000/- for Indians. *If you had become a LIFE member when we started the organisation you would be getting ZOOS' PRINT free now.*