

A NOTE ON THE SEX RATIO OF THE EGYPTIAN TORTOISE, *TESTUDO KLEINMANNI*

OMAR ATTUM

*University of Louisville, 8807 Linn Station Road, Louisville,
KY 40222, USA.*

INTRODUCTION

Testudo kleinmanni is a small *Testudoid* that inhabits the most arid environment of any tortoise species. The males have an average carapace length of only 95 mm while the larger female can attain a carapace length of 127 mm (Highfield and Martin, 1995). It is an endangered species ranging from Libya to the Negev in Israel. In recent years *T. kleinmanni* have been readily available in the animal trade. Most of the tortoises in captivity originated from Egypt or Libya. The current Egyptian tortoises originate from Libya but are exported out of Egypt, where *T. kleinmanni* are believed to be almost extinct. This Libya-Egypt transit route is a recent phenomenon resulting from the open border relations between Egypt and Libya (Baha El Din, 1994). The availability of a large number of Egyptian tortoises could provide an opportunity to investigate certain aspects of the biology of this understudied endangered species. Upon observing *T. kleinmanni* at various localities in Egypt, a significant difference was noticed in the proportion of male to females offered for sale.



Plate 1

The appalling conditions in which *Testudo kleinmanni* are transported from Libya to Egypt (Sayyida Aisha) – Photo: Omar Attum

In June 1994, several hundred *T. kleinmanni* were witnessed for sale by animal traders in Cairo at the Sayyida Aisha animal market. A random sample of 124 tortoises were examined. Of these, 85 were males and 39 were females. This was only a small fraction of the captive *T. kleinmanni* witnessed for sale (Attum, 1996). In June 1995, 25 tortoises were examined at assorted shops in the Egyptian-Libyan border city of Salum. Salum is the port of entry between Libya and Egypt. 15 males and 10 females comprised the total number of tortoises witnessed for sale there. In total 149 Egyptian tortoises were examined comprising 100 males and 49 females; the resulting total male to female ratio was 2.04/1.

Geffen and Mendelssohn show that male *T. kleinmanni* have a larger home range size than females. The maximum daily travelled distance of male *T. kleinmanni* was greater than the female's maximum daily travelled distance (Geffen and Mendelssohn, 1988). Males are also known to be more active during the mating season as they pursue females to mate with (Geffen and Mendelssohn, 1988). This increased activity and larger home range of the males could perhaps make them more susceptible to being caught by animal collectors. On the other hand, this could likewise expose them to predation pressure.

United States law requires that tortoises larger than 4 inches (101.6 mm) are imported. This size discrimination prevents many males from being exported to the United States because of their smaller overall size. The United States is one of the leading importers of reptiles from Egypt (pers. comm. w/Egyptian animal traders). In Egypt, larger tortoises are more desirable and worth more. To the Egyptian consumer the relatively larger female *T. kleinmanni* are an alternative to the larger and more expensive Mediterranean Spur-thighed Tortoise, *Testudo graeca*. These anthropogenic factors may lead to the higher male/female ratio of animals held by traders.

Table 1
Male/Female Ratio of *Testudo kleinmanni*

	Males	Females	Males/Females
Syyida Aisha animal market (Cairo)	85	39	2.18
Salum	15	10	1.5
Total	100	49	2.04

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