

The Zoril, *Ictonyx striatus erythrae* De Winton, 1898 in Egypt.

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ABSTRACT

The Zoril *Ictonyx striatus* is one of the rarest mammals of Egypt, known from only two specimens collected more than 50 years ago. The collection of two new specimens and the observation of others in the Gabal Elba area provide new data on this little-known animal in Egypt. In this paper we provide information on the morphology of this species, and its cranial and dental characters, in comparison with published data on the species from Egypt and rest of Africa. We also present some data on its habitat requirements and feeding habits.

Keywords: *Ictonyx striatus*, Zoril, Mustelidae, Gabal Elba.

INTRODUCTION

The Zoril *Ictonyx striatus* is an Afrotropical species distributed from Sudan westward to Mauritania and Senegal, and south to South Africa (Hoogstraal 1964; Osborn & Helmy 1980). In Egypt, this species is known from only two specimens obtained in 1954 in Wadi Daraweena, about 165 meters above sea level in the southeastern corner of the Eastern Desert (Hoogstraal *et al.*, 1957a & b; Osborn & Helmy 1980). The species is not known to occur elsewhere in North Africa, the Sinai Peninsula, or the rest of Asia (Hufnagl 1972; Setzer 1956; Harrison & Bates 1991; Saleh & Basuony 1997 & 1998). The occurrence of this species in southeastern Egypt, therefore, represents the northernmost limit of its distribution.

Setzer (1956) gave a brief description of this species based on three specimens obtained in the Sudan. Hoogstraal *et al.* (1957a & b) gave a general description of the habitat where the two 1954 specimens were collected. Osborn & Helmy (1980) examined these two specimens and presented some cranial and body measurements.

New material that we recently obtained from the coastal plain of Gabal Elba, provide additional data on this little known species in Egypt. In this paper we present new data on habitat parameters, behaviour and body measurements of this species.

MATERIALS AND METHODS

Zorils were observed and photographed in the open acacia forest of Wadi Adaldeib delta northeast of Gabal Elba during the night, under car headlights. A male and a female were followed in this area during their pre-mating courtship for several minutes.

A male and a female were subsequently trapped in folding Tomahawk box traps set for foxes at the lower delta of Wadi Adaldeib (N 22° 38' 03'', E 36° 03' 17''). Skins and skeletal material of the two specimens are now deposited at the Al-Azhar University Zoological Collection, Department of Zoology, Faculty of Science, Al Azhar University, Cairo, Egypt (Museum numbers m00802 and m00803). Standard body, cranial and dental measurements were taken. A detailed comparison of these two specimens with the published descriptions of specimens from Egypt and elsewhere in Africa was also carried out (Ellerman & Morrison-Scott 1951; Setzer 1956; Osborn & Helmy 1980).

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Notes on the ecological setting at the collection localities and other areas where the species has been previously collected were also taken.

Contents of the stomachs of the two animals were extracted, weighed, examined and categorized into main items. Animal items in the food were identified to the smallest possible taxonomic category. Identification of prey items to the species level was possible if the entire animal or fragments with characteristic morphological features were present (Basuony 1998).

RESULTS AND DISCUSSION

Habitats and behaviour

Zorils and their tracks were observed in the Gabal Elba area (Figure 1 & Plate 1) only in acacia, open parkland habitats. The area where most of the observations were made was relatively flat, with a hard sandy surface and a very limited ground cover. A climax acacia vegetation dominated by *Acacia raddiana* var. *tortilis* covered the area. The evenly spaced trees ranged in height from stunted individuals, less two metres high close to the seashore, to larger specimens of up to four metres high farther inland. During the month of August, when most of these observations took place, no understorey vegetation of any kind was found in the area. Local Bishari tribesmen, told us, however, that in years with good rains, a luxuriant growth of grasses and shrubby plants cover the forest floor. Despite the prevailing drought that affected the area during the time of our visit, considerable animal life inhabited that small forest. Many of these animals can potentially form the prey base for the Zoril. Among these are numerous species of ground-dwelling insects and arachnids. Particularly common were the scorpions *Leiurus quinquestriatus* and *Androctonus amreuxi*. The nocturnal, ground-dwelling geckos *Hemidactylus turcicus* and *Stenodactylus sthenodactylus* were also quite common in that habitat. Other common reptiles include the lizards *Acanthodactylus boskianus* and the snakes *Psammophis aegyptius*, *Cerastes cerastes* and *Echis carinatus*. Common rodents include *Gerbillus pyramidum*, *G. gerbillus*, *Meriones crassus*, *Acomys cahirinus* and *Jaculus jaculus*. Other carnivores that we observed or were reported by others in the area are the Sand Fox *Vulpes rueppelli*, the Sand Cat *Felis margarita* and the Genet *Genetta genetta*.

Zorils were observed during the month of August in the acacia parkland of Wadi Adaldeib, about three km from the Red Sea coastline and approximately six metres above sea level. One pair was observed during their courtship while the male attempted to mate with the female. The male chased the female, which ran in a zigzag line among the acacia trees. If mating takes place in the late summer or early autumn, the young are expected to be born in early winter. A similar reproduction pattern has been reported for *Ictonyx libyca* (Flower, 1932; Hoogstraal, 1964).

The Zoril is a slow-running animal; when chased it ran with its tail vertically raised in a characteristic threatening posture. A captive animal initially ejected its smelly secretion when it was first approached. However, it did not smell afterwards, even when it was being handled.

Food habits

No information on the feeding habits of this species in Egypt is available in the literature. In fact neither Hoogstraal *et al.* (1957a; b), nor Setzer (1956) provided any information on the stomach contents of the *Ictonyx striatus erythrae* specimens they collected in Egypt and Sudan respectively. The analysis of the stomach contents of our Egyptian specimens revealed that insects form the main item in the food of this mammal. Insects belonging to three different orders were detected. Coleoptera were represented by several species of ground-dwelling beetles, which occurred with the highest frequency in the stomach contents (84%). Odonata (dragonflies) and Hymenoptera (ants) occurred at frequencies of 8 % and 6% respectively. Contrary to these findings, Dorst (1970) and Osborn & Helmy (1980) suggest that the food of *Ictonyx striatus* consists of rodents, reptiles and bird eggs.

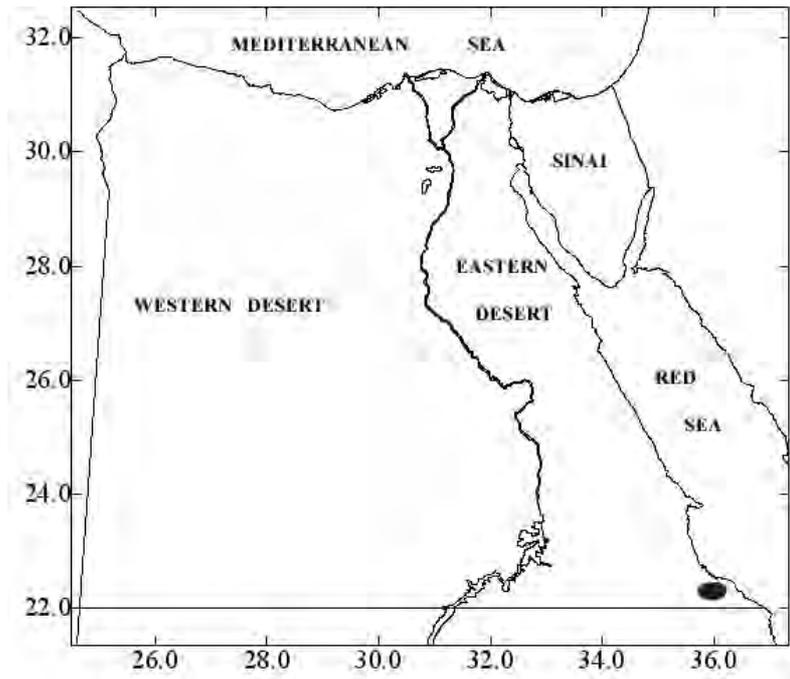


Figure 1: A location map of the study area.



Plate 1: *Ictonyx striatus erythrae*, Wadi Adaldeib, Gabal Elba area.

Morphology

Table 1 shows the external, cranial and dental measurements of the two specimens from Wadi Adaldeib and the two specimens reported by Hoogstraal *et al.* (1957) from Wadi Daraweena. Sexual dimorphism is rather obvious, with the male being generally larger than the female.

Our two specimens agree with the description of the subspecies *erythrae* as described by Osborn & Helmy (1980) from the material from Wadi Daraweena. While *Ictonyx striatus* is widely distributed in Africa, the subspecies *erythrae* is also known from Somaliland, eastern Sudan and possibly parts of Ethiopia, in addition to the Gabal Elba area (Hoogstraal, 1964; Osborn & Helmy, 1980). The type locality of *erythrae* is Suakin on the Red Sea coast of Kassala Province of Sudan. According to Setzer (1956) *erythrae* can be distinguished from subspecies *sudanicus* by a reddish tone to black parts of pelage, black pigmented areas being more extensive, and smaller dimensions. According to that author (Setzer 1956) specimens of

Ictonyx striatus from near the Red Sea coast have the dark parts of the pelage reddish black, while the animals from near the Nile are jet black. He gave the following mean cranial measurements of three adult males from Khor Arbat of Sudan as follows: braincase breadth 27.5 - 28.5; condylobasal length 57.8 - 59.2; zygomatic breadth 36.1 - 38.60; interorbital constriction 13.9 - 14.9 and postorbital constriction 13 - 14.9.

Table 1: External, cranial and dental measurements (in mm) of the Zoril *Ictonyx striatus*.

Measurements	Our specimens		Setzer (1956)	Osborn and Helmy (1980)	
	Male	Female		Male	Female
Head and body length	360	330	-	369	325
Hind foot length	56	50	-	58	53
Tail length	280	270	-	273	288
Ear length	15	14	-	-	-
Braincase breadth	27.7	26.9	28.1	-	-
Bullar length	16.5	17.9	-	-	-
Condyloincisive length	61.1	57.2	58.5	61	56.7
Lower teeth row	23.5	23.3	-	-	-
Mastoid breadth	30.7	28.2	-	-	-
Mandibular length	37.3	36.1	-	-	-
Nasal length	11.9	10	-	-	-
Occipitonasal length	53.4	50	-	-	-
Upper teeth row	21.6	21.2	-	-	-
Zygomatic breadth	37.8	33.7	37.6	37.9	33.8
Interorbital constriction	15.6	14.3	15.6	-	-
Postorbital constriction	13.8	14.6	14.6	13.3	13.2

CONCLUSION

The Zoril *Ictonyx striatus* is one of the rarest mammals of Egypt, being known from less than a handful of specimens. It is confined to a very small restricted area of a semi-arid habitat in southeastern Egypt. It is a typical Afrotropical species, widely spread throughout sub-Saharan Africa, including the Sahel Zone. The subspecies *erythrae* described in this paper occupies open parkland habitats in the Red Sea littoral and differs in several morphological respects from subspecies of the more inland areas. The subspecies seems to feed primarily on insects, although a great variety of small reptiles and rodents, which are the typical prey items for this species elsewhere, are abundant in its habitats.

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