

## Notes on Distributional Records and Some Characteristics of Five Carnivore Species (Mammalia: Carnivora) in Turkey

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**Abstract:** In this study, carnivore specimens such as *Herpestes ichneumon*, *Hyaena hyaena*, *Meles meles*, *Vulpes vulpes*, *Lutra lutra* from various localities were evaluated based on external and cranial morphology, and then were compared with the published papers. Thus, the present status in Turkey of these species along with distribution records were evaluated.

### Türkiye'deki Beş Karnivor (Carnivora: Mammalia) Türünün Bazı Karakterleri ve Yayılış Kayıtları Üzerine Notlar

**Özet:** Bu çalışmada, değişik lokalitelerden elde edilen *Herpestes ichneumon*, *Hyaena hyaena*, *Meles meles*, *Vulpes vulpes*, *Lutra lutra* türlerine ait örneklerin kafatası karakterleri ile post karakterleri değerlendirilerek, literatür verileri ile karşılaştırıldı. Böylece türlerin Türkiye'deki son durumları, yeni yayılış kayıtları ile birlikte değerlendirildi.

#### Introduction

The order Carnivora are present throughout the Palaeartic region in seven families i.e. Felidae, Canidae, Hyaenidae, Ursidae, Viverridae, Mustelidae and Procyonidae (1). Many distributional records and new geographical variations on these families in Turkey have been documented (2–8). In this study, five carnivore species (*Herpestes ichneumon*, *Hyaena hyaena*, *Lutra lutra*, *Meles meles*, *Vulpes vulpes*) were presented in order to provide comparative material, and to contribute to the knowledge on the distributions of Turkish Carnivores. This study was based on specimens run over by cars on the roads, or shot by hunters. The localities from where the specimens were collected are shown in Figure 1. All specimens were skinned and prepared in the standard museum method, and deposited in the Faculty of Science at Ankara University.

*Herpestes ichneumon* L., 1758; The mongoose was first recorded in the river Küçük Menderes by Danford and Alston (5). Gülen (9) performed some ecological and biological observations on this species captured from Düziçi (Adana). According to Kosswig (from Kumerloeve 1975) (8), mongooses range around the coastal regions

of western Turkey. Hus (10) reported that a mongoose hunted around Topuzlu dam lake (İstanbul) by villagers, was deposited in the Forestry Faculty at İstanbul University. More recently, Bosman and van den Berg (11) have reported the occurrence of the mongoose confirmed by sight, footprints and droppings the province of Çukurova (Adana) in southern Turkey.

We found a dead mongoose specimen around Yumurtalık bay (Adana) in September 1997. The skin of this specimen was well preserved for morphological examination. The nostril pad of this specimen was naked, and brownish, with rough vibrissae located on both sides of the muzzle. The flanks and the rostrum were covered with short and brownish hair, and the hair of dorsal pelage was short and grizzled brown with white, creamy hairs. The bases of the dorsal hairs were a lighter brown than their anterior tips. The ears were hairy, the tail got smaller towards the anterior, and its tip was blackish. The soles of the fore and hind feet were naked, and the lower sides of forearms and hind legs were uniformly brownish. In contrast, the upper sides of the forearms and the legs were similar to the dorsal color. The chest and abdomen were light brown. The measurements of this specimen

were as follows: Total length: 820 mm: Tail 430 mm: Fore foot: 120 mm: Hind foot: 100 mm, Ear: 12 mm. The external characteristics are found to be mostly consistent with the descriptions of those given by Harrison and Bates (12). According to Bosman and van den Berg (11), it is difficult to distinguish between the mongoose and otter, because of the superficial resemblance. In contrast with this finding, the mongoose can be readily distinguishable from the otter by its grizzled dorsal fur.

*Specimens examined:* Halep Çamlığı, Deveciuşağı Köyü, Yumurtalık-Adana 1 ♀ (Fig.1)

*Hyaena hyaena* L., 1758; The specimen of *Hyaena* was first recorded by Blackler (4) in the province of İzmir, and then he deposited this sample in the British Museum. In addition to this, two young specimens were found by Kumerloeve (7) around Manisa, and then an adult that was run over by a car was found by Çağlar (13) around Cizre. Finally, Ullrich and Riffel (14) recorded a striped hyaena, *Hyaena hyaena*, which was shot in the vicinity of Bodrum by a hunter around 1970.

The specimen in this study was an adult male shot by hunters in the Bolkar mountains in 1985. The hair crest commencing between the ears extended to the tail, it was dark brownish and much longer than the pelage hair. The whiskers 5–10 cm in length were rough, long and brownish, located on both sides of the muzzle. The first stripe on the level of the shoulder was convex. The vertical stripes commencing in front of the shoulder occurred throughout the rump. These brownish stripes became spots on the neck region. There were seven concave stripes on the anterior sides of the forearm and hind legs. There were irregular brownish spots and fragmented stripes on the abdominal region. The tail was about 20% of the head and body length. The ears were covered with short light fulvous hair. The nostril pad and soles of the feet were naked and blackish. There was a triangular brownish patch under part of the neck. The ventral fur was pale fulvous. The sole of the fore and hind feet had five pads the same size, four of them with a nail. Kumerloeve (7) has stated that *Hyaena* is endangered in the Middle East. Our specimen is the latest record from Anatolia, since 1970. This is an important contribution to Turkish mammalian fauna.

*Specimens examined:* Maden köyü, Ulukışla-Niğde 1 ♂ (Fig. 1).

*Meles meles* (Linnaeus, 1758); The first record of *Meles meles* was in the province of Tarsus (southern Turkey) by Danford and Alston (5). The specimens

obtained around the province of Trabzon were assigned to *M. meles ponticus* by Blackler (4). Southern Turkey was included in the range of *M. meles* by Kock and Kinzelbach (6). This species is clearly distinguishable by its large size and distinctive coloration. There are two longitudinal black stripes on the head which enclose the eyes and ears. In summer fur, the dorsal color is straw gray, the hair bases and tips are whit, and the mid-region is black. The dorsal color becomes whitish toward the flank, then it turns slightly reddish, and the ventral is blackish. The ears have marginated whitish crests on the superior borders, and the lower part of the ear is black. The tail is dorsally the same color as the dorsal fur but its ventral is reddish. The fore and hind feet are black and the claws of fore feet are long and strong. Danford and Alston (5) have stated that the skull of *M. meles* from Turkey is similar to the Persian badger in having two lateral ridges on the hind part of the palate, but in other respects it rather resembles European examples.

In this study, we could not find such a distinctive structure in the hind part of the palate. We examined four adult specimens from southern and western Anatolia, and then we compared these specimens morphologically and biometrically with those previously recorded in Turkey, Syria, Lebanon, Israel and some parts in Europe. We especially found out that not only their external and cranial measurements but also their coloration as described by Harrison and Bates (12) and Miller (15) are overlapping. Kumerloeve (7) has also suggested that the subspecific status of *M. meles* in Turkey and adjacent areas is unclear.

*Specimens examined:* Çaltılıçukur Köyü, Akseki-Antalya 1 ♀, 2 ♂♂; Gönen-Balıkesir 1 ♀. (Fig. 1).

*Vulpes vulpes* (Linnaeus, 1758); Although two new subspecies of *V. vulpes* in the province of Trabzon have been recorded by Satunin (2) and in İzmir by Thomas (3), all Anatolia was included in their distribution area by Kumerloeve (7). In addition to these, many other subspecies from adjacent areas in the northeastern and the southeastern parts of Turkey were also first recorded as follows: *V. vulpes flavescens* was described by Gray (16) in Iran, *V. vulpes arabica* by Thomas (3) in Arabia, *V. vulpes caucasica* by Dinnik (17) in Caucasia, *V. vulpes palestine* by Thomas (3) in Palestine and *V. vulpes alticola* by Ogney (18) in Armenia.

We examined the summer pelage. The muzzle, upper side of the head and median region of the back were bright reddish brown, turning to pale buff or gray toward the flanks. The tips of the ears had long whitish hairs, its inner side was covered with tiny short white hairs and the

outer side had uniformly short black hairs. The tail was strictly dorsally slightly reddish black to brown and ventrally pale buff or gray. The upper sides of the limbs were same as in the dorsal. The ventral fur was grayish white with speckling of dull yellowish. Ognev (19) has stated that the age variations between the young and adults, and the seasonal variations in the coloration took place in *V. vulpes*. In addition, the cranial measurements of males were larger than those of females. When the diagnostic characteristics of the subspecies mentioned above were compared with our specimens, the diagnostic characteristics described seemed to be insufficient to validate their subspecific status, and further investigation was deemed necessary. However, when our specimens from the west and the north Turkey were compared with the two subspecies described first from Turkey, it was found out that our specimens were very similar to *V. v. anatolica* with respect to the coloration and the measurements of those described by Thomas (3) in Izmir. In addition, Lehmann (20) included specimens from the province of Samsun (northern Turkey) to *V. v. anatolica*, and this also supports our conclusion.

*Specimens examined:* Denizli 1♀; Erbaa–Tokat 1♀, 1♂; Hamit–Kırşehir 1♀. (Fig. 1).

*Lutra lutra* (Linnaeus, 1762); The otter was first recorded in Tarsus (southern Turkey) by Danford and Alston (5), then Missone (21) recorded it in the river Aras and Kura (eastern Turkey) and Kumerloeve (7) in the northern and the southern mountainous coastal regions

of Turkey. This species is now endangered and is rare in Turkish rivers.

We examined the winter fur of *L. lutra*. The dorsal color from the nose tip to the end of the tail was uniformly dark brownish, turning to whitish gray in the flanks and the ventral fur was completely whitish gray. The ear was very short and hirsute, and its color was the same as the dorsal color but a little bit lighter. The ventral and dorsal color of the tail was also similar to the back. The upper sides of both limbs were dark brownish and grizzled. Danford and Allston (5) have stated that specimens obtained from a river around Tarsus differed in no way from the ordinary English specimens, except in being perhaps slightly lighter in color. According to Ognev (19), *L. l. meridionalis* and *L. l. seistanica* from northern and eastern Iran are valid subspecies, and *L. l. meridionalis* which has a bicolored tail, is easily distinguishable from *L. l. seistanica* by its somewhat more intense coloring and uniformly colored tail. Kumerloeve (7, 8) without taxonomic evaluation described the specimens from northern and southeastern Turkey as *L. l. meridionalis* and *L. l. seistanica*, respectively. Since we had only one specimen from southwestern Turkey, it was impossible to assign our specimen to a certain subspecies, and the subspecific status of Turkish specimens still remains unclear.

*Specimens examined:* Çaltılıçukur Köyü, Akseki, Antalya 1♀ (Fig.1).

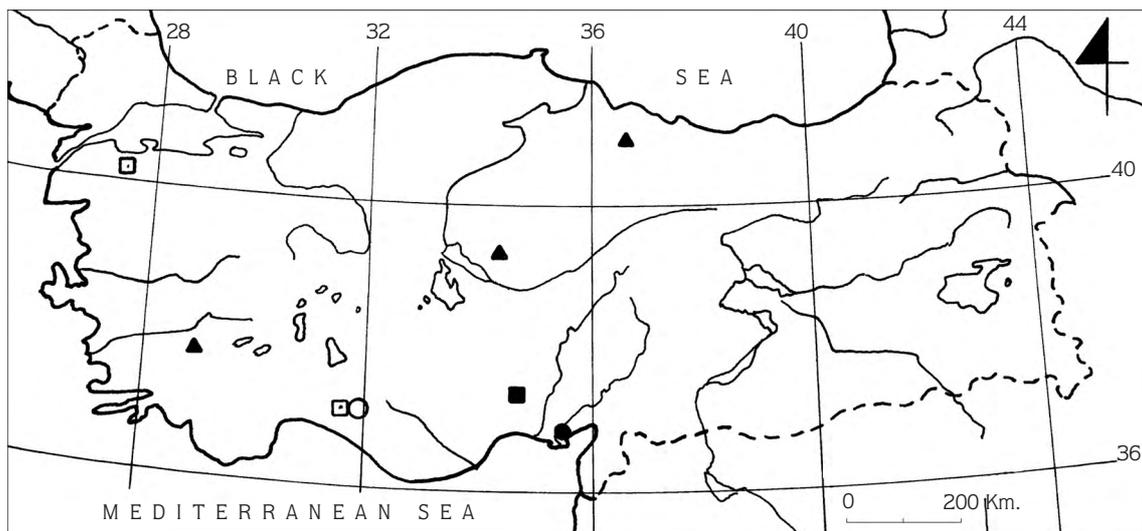


Figure 1. Recorded localities of five Turkish Carnivores. ●: *Herpestes ichneumon*, ■: *Hyaena hyaena*, □: *Meles meles*, ▲: *Vulpes vulpes*, ○: *Lutra lutra*.

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