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Contributions to Distribution, Reproduction Biology and Ecology of *Vormela peregusna* (Güldenstadt, 1770) (Mammalia: Carnivora) in Turkey

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Abstract: In this study, both captured and uncaptured *Vormela peregusna* were investigated for their distribution, reproduction biology, some ecological observations and morphological characteristics in our laboratory and campus area at Erciyes University in Kayseri, Turkey. It was observed that there is a cannibalism within population in *Vormela peregusna*. The morphological evaluations indicated that Turkish *V. peregusna* is the same to *V. peregusna* from Israel.

Key words: *Vormela peregusna*, distribution, reproduction biology, ecology, Turkey

Introduction

The marbled polecat is a member of the Mustelidae family, which includes weasels, badgers, skunks and otters in the order Carnivore. Marbled Polecat is classified as *Vormela peregusna* and is represented by a single species in Palaearctic Region including Turkey (Ellerman and Morrison-Scott, 1951; Corbet, 1978; Wozencraft, 1993).

The distribution areas of *Vormela peregusna* include the steppes and deserts of SE Europe, Caucasus, Kazakhstan, Middle Asia; SW Asia (excl. Arabia), N China and S Mongolia (Wozencraft, 1993).

A detailed study based on a particular sample of Marbled Polecat has not been carried out in Turkey according to the knowledge. The studies concerning Marbled Polecats are not based on a specific sample or are in form of distribution records using a few samples. The records belonging to this species from Turkey were reported by different authors (Danford and Alston, 1877; Nehring, 1902; Lehmann, 1966; Kumerloev, 1967; Ozkurt *et al.*, 1999). Furthermore, distribution of *V. peregusna* in Turkey was reported by Dogramaci (1989) and Kurtonur *et al.* (1996) as Thrace and Anatolian. In addition, Ozkurt *et al.* (1999) examined the karyotype along with the morphological characteristics of *Vormela peregusna* in Balikesir, Turkey.

More recently in Israel, the biology and ecology of this species were studied in detail (Ben-David, 1988, 1998; Ben-David *et al.*, 1991). Although there are many studies on the distribution and taxonomy of Marbled Polecat, no information has been published on its biology and ecology in Turkey.

The aim of this study was to report the data collected from field studies and especially captivity and to contribute to the its distribution, the reproductive biology and some ecological characteristics of Marbled Polecat in Turkey.

Materials and Methods

This study was performed on a female specimen of *Vormela peregusna* in captivity alive captured from the Erciyes University campus in Kayseri and a specimen (sex unknown) uncaptured. From 1998 to 2000, a female specimen was established in our laboratory with cages 95×60×50 cm. The animal in laboratory was fed on domestic chicken, rodents, frog, beef, birds, reptiles and water. Other animal which was not captured was observed

in campus area.

Results

***Vormela peregusna* (Güldenstadt, 1770):** Type locality: Rostov Obl., steppes at lower Don River, U.S.S.R, (Wozencraft, 1993).

Status: IUCN-Vulnerable (Wozencraft, 1993).

Distribution: *Vormela peregusna* was captured from Kayseri, Turkey (Fig. 1).

Morphological characteristics: The marbled polecat's black brown fur is marked by yellow on white irregular spots and stripes across the head, back, and tail. Its white face features a masklike appearance, due to a wide black brown stripe through the eyes and cheeks. It has a small head and snout and a long, bushy tail. It has larger ears than other polecat. In addition, the variegated part in dorsal of our sample is more expensive in summer, but narrower in winter, and the variegated part in dorsal approaches to underside in summer. It was observed to change its fur from May to October. Underside and legs are completely black brown. The legs are short and end in long claws. Therefore, the body of marbled polecat is near to ground and long. The fingernails are thin long and excavator-climber types. Additionally, our marbled polecat has eight udders (Fig. 2).

Reproduction biology: Our female specimen was captured alive in September 1, 1998 and when it was captured, it was pregnant. Thus, our marbled polecat brought about four cubs in April 2, 1999. According to this observation, *V. peregusna* has a long pregnancy period (We suggested this view because it was captured in September 1, 1998 and brought about in April 2, 1999). The cubs that hairless, pink and eyes covered were born altricial.

Ecological observations: The female sample of Marbled Polecat in laboratory was took in wire netting. It was nourished in wire netting, with chicken, small mammals, frogs, beef, birds reptiles and water, but it especially prefer to have chicken in captivity. It was observed that marbled

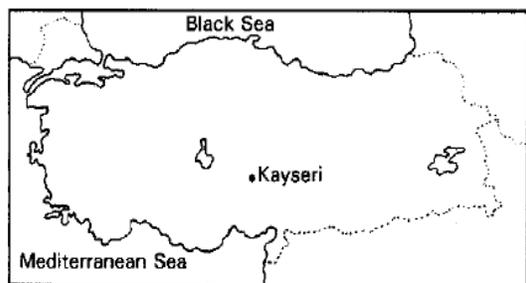


Fig. 1: The map showing recorded locality of *Vormela peregusna*, Kayseri, Turkey



Fig. 2: An adult and female Marbled Polecat

polecat had rarely water and buried excess food in sawdust (The sawdust was employed as dry in floor of wire netting). Marbled polecat has an anal scent gland that gives off a foul-smelling liquid, which is used as a defense mechanism. After marbled polecat is given birth, started to eat its own cubs periodically. According to this result, it was determined that marbled polecat is cannibal. Namely, in the populations of *Vormela peregusna*, when the movement area of marbled polecat is not extensive, cannibalism is seen within population. The uncaptured Marbled Polecat normally hunts at night. Consequently, it is nocturnal and rests in underground burrows during the day. It typically lives on the ground but is agile tree climber. The uncaptured Marbled Polecat diets largely with small mammals (*Spalax leucodon*, *Apodemus* spp., *Mus* spp., *Meriones tristrami*, *Spermophilus xanthopyrnus*, *Cricetulus migrWrius*, *Rattus* spp. and *Erinaceus concolor*), birds (*Passer domesticus*, *Galerida cristata*, *Columba livia*, *Pica pica*, *Corvus monedula*, *Alauda arvensis*, and *Streptopelia decaocto*), amphibias (*Bufo viridis* and *Rana ridibunda*) and reptiles (*Lacerta parva*, *L. saxicola*, *L. cappodacica* and *L. viridis*) (These species are determined in campus by ourselves).

Discussion

The first record of *V. peregusna* was reported by Danford and Alston (1877) from northeast Turkey. Later, while Ognev (1931) stated that the nominate subspecies was distributed in the northern parts of Turkey, Harrison and Paul (1991) evaluated the populations of *V. peregusna* in Turkey as *V. peregusna alpheraky*. According to Harrison and Paul (1991), *V. peregusna syriaca* described by Pocock from Syria differs from Anatolian samples by its some morphological characteristics. With the exception of these, Kumerloev suggested that *V. p. syriaca* occurs in

western Turkey and *V. p. alpheraky* in eastern Turkey. In addition to these, the morphological and karyological characteristics of *V. peregusna* collected from northwest Anatolian (a female from Gonen-Balikesir) were examined by Ozkurt *et al.* (1999). It was reported by these authors that this sample is similar to *V. p. syriaca*.

While some investigators suggested that mating in the Marbled Polecat (*V. peregusna*) occurred in March and parturition in May (Atanassov, 1966; King, 1984; Ben-David, 1998), it was observed by other investigators pregnant females in January, February and May (Heptner and Naumov, 1974; Ben-David, 1998). According to Ben-David (1988, 1998) length of pregnancy in marbled polecat (*V. peregusna*) varied from 8-11 months, a period longer than expected for such a small Mustelid, suggesting delayed implantation or embryonic diapause. In addition, Ben-David *et al.* (1991) investigated feeding habits and predatory behaviour in the Marbled Polecat and determined killing methods in relation to prey size and prey behaviour. Consequently, the populations of *V. peregusna* in Israel were also reported by these authors as *V. p. syriaca*. The samples examined in this study (in captivity and uncaptured), especially sample in labor, were similar to samples of *V. peregusna* reported by Ozkurt *et al.* (1999) from Balikesir, Ben-David (1988, 1998) and Ben-David *et al.* (1991) from Israel according to morphological characteristics. Consequently, the populations of *V. peregusna* distributed in Central Anatolian were determined to belong to *V. peregusna syriaca*. However, in many species of Carnivores, pregnancy is longer than expected based on maternal body size and *V. peregusna* is one of these species. A female sample observed in this study also indicated to have a long pregnancy. It was caught in September 1 and brought forth young in April 2. This was a long period. Probably a long pregnancy was delayed implantation or embryonic diapause as Ben-David (1988, 1998) suggested in population of *V. peregusna syriaca* from Israel.

Finally, it was also very interesting to observe that *V. peregusna* shows cannibalism within population.

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