A NEW SPECIES OF *Eremias* (Sauria: Lacertidae) FROM FARS PROVINCE, SOUTH-CENTRAL IRAN

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A new species of the lacertid genus and subgenus *Eremias* is described based on material collected by the senior author from 150 km northeast of Shiraz, Fars province, south-central Iran at about 1800 m elevation. It differs from all other Iranian species of the typical subgenus (*E. persica, E. stenochlaea, E. vexilis*, and *E. saltatorius*) in that it has a very distinctive and unique color pattern, unmistakable in this character: the wide dorsolateral stripe is uniformly black without light spots and there is no ocelli on the upper surface of limbs; the third pair of submaxillary shields are separated by 4 granular scales; and the tympanic shield is rudimentary and almost absent. The new species is sympatric with *Eremias persica* and apparently restricted in distribution to the steppes and open plains in the northern regions of Fars province, south-central Iran.

Key words: *Eremias* (*Eremias*) nigrofascialis, *E. (Eremias) persica*, Lacertidae, New species, Shiraz, Fars province, South-central Iran.

INTRODUCTION

The lacertid genus *Eremias* Fitzinger, 1834, encompases about 32 species distributed throughout the desert and semi-desert regions from northern China, Mongolia, Korea, Central and southwest Asia to southeastern Europe. According to Anderson (in press), 14 species of the genus *Eremias* occur on the Iranian Plateau. These species mainly occur on the northern, central, and eastern parts of the plateau. However, the knowledge of the Iranian Plateau *Eremias* is, to a great extent, anecdotal and there are still large gaps in available material from various parts of the Plateau. Szczerski (1974) revised *Eremias* and distinguished two distinct genera based on several important morphological characters (see under taxonomic account).

In this paper we describe a new species of *Eremias* belonging to the typical subgenus from the steppes and open plains of Fars province, south-central Iran at about 1800 m elevation. This province is one of the largest provinces of Iran, extending in a northwest–southeast direction (Fig. 1) and a major part of it is occupied by the Zagros Mountains (in the west) as well as steppes and open plains (mainly in the central and eastern regions).

The type locality of *Eremias* (*Eremias*) nigrofascialis (sp. nov.) is an open plain of silt and gravel with steppe and desert vegetation (e.g., *Artemisia, Astragalus*, and *Zygophyllum*), 150 km northeast of Shiraz (53°9' E, 30°52' N), Fars province, south-central Iran (Figs. 2–3).

*Eremias* (*Eremias*) nigrofascialis sp. nov. (Figs. 4–8)

Holotype and type locality. An adult female, GNHM Re. ex. 5147, collected by the senior author on 16 August 1996, from 150 km northeast of Shiraz (53°9' E, 30°52' N), Fars province, south-central Iran, at about 1800 m elevation.

Paratypes. An adult male, GNHM Re. ex. 5148, other informations as for the holotype.

Diagnosis and comparison. A large-sized lacertid, maximum snout-vent length (SVL) = 84 mm, tail length (TL) = 127 mm, with 14–17 longitudinal and 31–32 transverse rows of ventral plates, converging posteriorly; 64–69 scales across middle of dorsum.

A species belonging to the subgenus *Eremias* [subocular bordering mouth, only one frenonosal, two supraoculars, femoral pores separated by a very short space (Szczerski, 1974)]. It differs from all other species of its relevant subgenus based on having...
several species-specific characters; the color pattern is unique and it is easily distinguishable from all other species in this character, i.e. a wide and uniformly black dorsolateral stripe strongly in contrast with dorsum and lack of ocelli on the body and limbs; the third pair of submaxillary shields are separated by a series of 4 narrow granular scales; the tympanic shield is rudimentary and almost absent; the two series of femoral pores justfail to reach the knee.

Furthermore, it differs from each species of the typical subgenus in the following character combinations (Bischoff and Böhme, 1980; Böhme and Szczerek, 1991; Szczerek, 1974):

From Eremias persica Blanford, 1874, in separation of the third pair of submaxillary shields by granular scales (100% versus 1.8%), in having a much smaller and rudimentary tympanic shield (100% versus 3%), higher count of gulars (41 – 42 vs. 28 – 38), numerous scales (more than 125) on each temporal region (100% vs. 14%), the absence of distinctly keeled upper caudal scales (100% vs. 75%), fail of femoral pores to reach the knee (100% vs. 9%), and distinct differences in color pattern.

From E. velox (Pallas, 1771) in a higher count of gulars (41 – 42 vs. 19 – 33), separation of the third pair of submaxillary shields by granular scales (100% vs. 0%), rudimentary tympanic shield (100% vs. 3%), the absence of distinctly keeled upper caudal scales (100% vs. 0%), and in color pattern.

From E. stranski Kessler, 1878, in a higher number of gulars (41 – 42 vs. 21 – 33), the absence of distinctly keeled upper caudal scales (100% vs. almost 0%), separation of the third pair of submaxillary shields by granular scales (100% vs. 2%), and in color pattern.

From E. lathzharica Moravec, 1994, in having five pairs of large submaxillary shields (instead of four), higher count of dorsals (64 – 69 vs. 54 – 59), no contact of gulars with the second pair of submaxillary shields, lack of a small scale between prefrontals, rudimentary tympanic shield, and distinct differences in color pattern.

From E. afghanistanica Böhme and Szczerek, 1991, in a much higher count of dorsal scales (64 – 69 vs. 44 – 46), higher count of gulars (41 – 42 vs. 25 – 28), separation of the third pair of submaxillary shields by 4 granular scales, and in color pattern.

From E. nikolskii Bedriaga, 1905, in a higher count of dorsals (64 – 69 vs. 45 – 59) and gulars (41 – 42 vs. 20 – 28), separation of the third pair of submaxillary shields by granular scales, and in color pattern.

From E. regelli Bedriaga, 1905, in a higher count of dorsals (64 – 69 vs. 43 – 61) and gulars (41 – 42 vs. 14 – 24), higher number of scales in the 9th – 10th caudal annulus (29 – 31 vs. 17 – 25), the absence of distinctly keeled upper caudal scales (100% vs. 0%), separation of the third pair of submaxillary shields by granular scales (100% vs. 0%), and in color pattern.

Description of the holotype. An adult female preserved in 70% ethyl alcohol in good condition; body stout and distinctly depressed; a species of the subgenus Eremias (Szczerek, 1974) sharing with the other species of this subgenus: subocular bordering the mouth, single frons, supraocular, two supraoculars, separation of the two series of femoral pores by a very
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by small, and to some extent, pointed granules, and ventrally by very large plates, two plates in a transverse row; 26 uni- and bi-carnate lamellae under the fourth toe, which is not fringed or very weakly so; 19–19 femoral pores, the two series separated anteriorly by a narrow space consisting of two pointed scales and just fail to reach the knee posteriorly by a space corresponding to two or three scales; no exceptionally large preanal plate, 7 plates in a longitudinal row from the space between femoral pores to the anterior edge of vent, enlarging posteriorly.

Coloration and color pattern (in life and immediately after death). Dorsum light tan suffused by pale greenish-brown with four series of longitudinal dark spots, smaller on nape, being larger on the middle of dorsum, then decreasing in size posteriorly, disappearing on the 1/4 proximal part of tail; dorsolateral region with a wide, uniformly black stripe without light ocelli, beginning from the upper temporal region, being strongly in contrast with the ground color of dorsum, continuing on the lateral part of the tail but with much less intensity, disappearing on the 1/3 distal part of tail; upper surface of tail sandy gray; upper surface of fore limbs uniformly sandy grayish-tan without light or dark spots, of the hind limbs the same but with a few irregularly scattered small, dark spots; no light ocelli on limbs or body; upper surface of head olive-brown, with two dark-brown blotches on the parietal region; temporal and labial regions light-brown with dark blotches; ventrolateral region bluish-gray with a series of 8–9 longitudinal dark spots; venier whitish-blue; lower surfaces of tail and gular region whitish cream.

Measurements (in mm). SVL = 78, TL = 122, Head length = 19, Head width = 12.3, Head depth = 9.6, Length of free limb = 29, Length of hind limb = 51.

Description of paratype. The paratype, which is an adult male, is essentially similar to the holotype and only the features in which it differs from the holotype are mentioned here:

Slightly larger than holotype; 67–69 scales across dorsum; 16–17 ventral plates across widest part of venter; 12–12 upper and 9–7 lower labials; 20–20 femoral pores on each side; tympanic scales smaller on both sides; 42 scales from symphysis of chin shields to collar; 24–25 lamellae under the fourth toe; submaxillary shields in 7 pairs (e.g., a small shield pair behind the fifth, and the seventh pair, which is still smaller, located medially and in contact with the third and fourth pairs laterally and anteriorly; 30–31 scales on the 10th whorl of tail.

Coloration and color pattern. Generally as the holotype with the following differences:

Only two longitudinal series of dark spots on dorsum, disappearing between hind limbs; dorsolateral stripe almost uniformly dark-brown with traces of some light spots; ventrolateral region with 3–6 large, dark spots; upper surface of limbs uniformly sandy-grayish-tan without ocelli or dark spots; all of ventral surfaces as in the holotype.

HABITAT

During my second long-term excursion and field work on the Iranian Plateau in 1996, I (senior author) surveyed the south-central parts of the plateau to collect \textit{Tropelia} and \textit{Laudakia}. In 150 km northeast of Shiraz, Fars province, I found two lizard specimens incidentally, belonging to the genus and subgenus \textit{Eremia}, described here as a new species. The habitat is a wide and open hill and gravel plain. The vegetation is luxuriant open steps, \textit{Eremiass herba-alba}, \textit{Astragalus}, \textit{Zygophyllum}, and \textit{Zelkoveria} association (Fig. 3). The two \textit{Eremiass} species were foraging among and around the base of shrubs apparently looking for insects, when alarmed running directly for the nearest large shrub, taking refuge. They were shy and wary and difficult to capture. I found them active when the air temperature was 35°C and the surface temperature about 37.5°C. Their biotope is similar to that of \textit{Eremiass persica} and both species occur in localities very close together. I collected several specimens of \textit{E. persica} from the same area (see under material examined). The new species (\textit{E. nigrolateralis}) is relatively larger than the sympatric \textit{E. persica} in comparing adult specimens. As well, \textit{Tropelia agilis} and \textit{Phrynocephalus scutellatus} were found to be as sympatric. When alarmed, the former mainly took refuge into the underground holes and the latter under the shrubs.

I investigated the area within a limited time, but could not succeed in finding more specimens of the new species. Whether it is a rare species, confined only to the type locality, or it has a relatively wide
distribution in the south-central plains of the plateau is not known. More extensive surveying in future would throw light on the different aspects of biology of this lizard.

TAXONOMIC ACCOUNT

As already noted, the lacertid genus *Eremias* has a wide distribution range. Various species of this ge- nus are distributed from southeastern Europe, south- ward to the Iranian Plateau and eastward into the Cen- tral and northeastern Asia as far east as eastern Mon- golia and Korea. In a monographic work, Szeczerbak (1974) revised the former more inclusive genus *Erementias* and divided it into two distinctive genera:

1. Genus *Mesalina* Gray, 1838 as a north African and lowland southwest Asian clade containing about 13 species, which is characterized in having a smaller size, lower nasal in contact with first supralabial only, and abdominal plates in parallel longitudinal rows. Two species of this genus occur on the Iranian Plateau (Anderson, in press).

2. Genus *Eremias* (sensu stricto) Fitzinger, 1834, as a Paleartic clade, encompassing about 32 species, which is defined by the following distinguishing characters: nostril between 3 or 4 nasals and, as a rule, not touching labial; lower nasal resting on 2 or 3 supralabials; ventral scales in converging longitudinal rows; femoral pores always present (except in *E. apanocrates*). About 15 species of this genus occur on the Iranian Plateau.

Arnold (1986) followed the Szeczerbak's taxono- mic decisions on this group and supported the holoty- phy of *Mesalina* Gray, by the study of hemipenial characters. This author also regards *Eremias* (s.s.) as the sister taxon of the clade containing *Acanthodactylus, Mesalina*, and *Opisthos-Cabrita* (Arnold, 1989).

Szeczerbak (1974) also divided the Paleartic *Eremenias* into five genera as follows: *Eremias*, *Rhabden- eremias*, *Ommatoderemias*, *Scopetermis*, and *Parar- emeias*. Except the latter, which is a Central and East Asian group, all of the other subgenera are repre- sented on the Iranian Plateau (Anderson, in press). The typical subgenus, *Eremias*, is defined based on several distinguishing characters: subocular border- ing mouth, only one fronsal, two supracaudal, femoral pores series separated by a very short space (Szeczerbak, 1974).

Of the Iranian Plateau species (about 15 species), *E. persica*, *E. velas*, *E. struachi*, and *E. lalasharica*

[a recently described species from Kerman province, southeastern Iran (Moravee, 1994)] belong to the typical subgenus *Eremias* (Anderson, in press). As well, *Eremias afghanistanica* from Afghanistan be- longs to this subgenus (Böhme and Szeczerbak, 1991).

Also, the new species (*E. nigrigularis*) belongs to this subgenus based on having all of the above- mentioned distinguishing characters. Geographically and morphologically, the most closely related species to *E. nigrigularis* (sp. nov.) is *E. persica*. The latter species is widely distributed on the central and eastern parts of the Iranian Plateau, extending east and south through southern Afghanistan and Baluchistan to Waziristan, Pakistan. In southeastern Iran, Kerman province, *E. persica* is sympatric with *E. lalasharica*; in the northern and western parts of the range it is sympatric with *E. velas*. It is also sympatric with *E. struachi* in northeastern Khorasan and perhaps in Kopet Dagh (Anderson, in press).

In south-central regions of the plateau, *E. persica* is the most abundant species of its relevant genus. The new species (*E. nigrigularis*) is sympatric with *E. persica* in south-central Iran, 150 km north of Shira- raz about 10 km from the road to Esfahan. As men- tioned before, the two species (*E. persica* and *E. ni- rigularis*) occur in localities very close together (less than 1 km) and I (senior author) collected 4 specimens of *E. persica* in the same region as *E. ni- rigularis*. As well, we have examined and compared many other specimens of *E. persica* as well as other species of *Eremias* from various parts of the Ira- nian Plateau and Central Asian countries (see under material examined.). The new species is distinguish- able from all other species of *Eremias* based on having several species-specific characters (see above). The most distinguishing character of the new species, however, is its unique color pattern which makes it easily distinguishable from other species of the typi- cal subgenus.

The new species may first have originated as an isolate of *E. persica*.

Etymology. *Eremias (Eremias) nigrigularis* is so named as it is distinguishable from all other species of the subgenus *Eremias* by the presence of a wide, and uniformly black dorsolateral stripe.

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Eremias persica (n = 3), GBNHM Re. ex. 5250 – 5205, from 5 km west of Takistan on the road to Zarand, Zarand province, northwestern Iran.

Eremias sp. (n = 3), GBNHM Re. ex. 5206 – 5208, from the Shiah-Darreh Village (about 2000 m eleva- tion), 60 km northeast of Kermanshah city, Kermanshah province, western Iran.

Eremias velas (n = 4), GBNHM Re. ex. 5121 (1 – 4), from around the Carin River, 250 km ESE Almaty (Alma Ata), Kazakhstan.

Eremias velas (n = 2), GBNHM Re. ex. 5120 (1 – 2), from the Taldí Korgoch district, northeastern Kazakhstan.

Eremias velas (n = 2), GBNHM Re. ex. 5121 (1 – 2), from Archenjan Village (1), and 30 km north of Mary (2), Turkmenistan.

Eremias struachi (n = 3), GBNHM Re. ex. 4411 (1 – 3), from Golestan National Park, Mazandaran province, north- eastern Iran.

Abbreviations. GBNHM Re. ex.) Gothenburg Natural His- tory Museum, Reptilia exercta; GBNHM GK Gothen- burg Natural History Museum, General Kataloge.

REFERENCES


