

## Scientific Note

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# First record of *Eremias kakari* Masroor et al., 2020 (Squamata: Lacertidae) for Afghanistan

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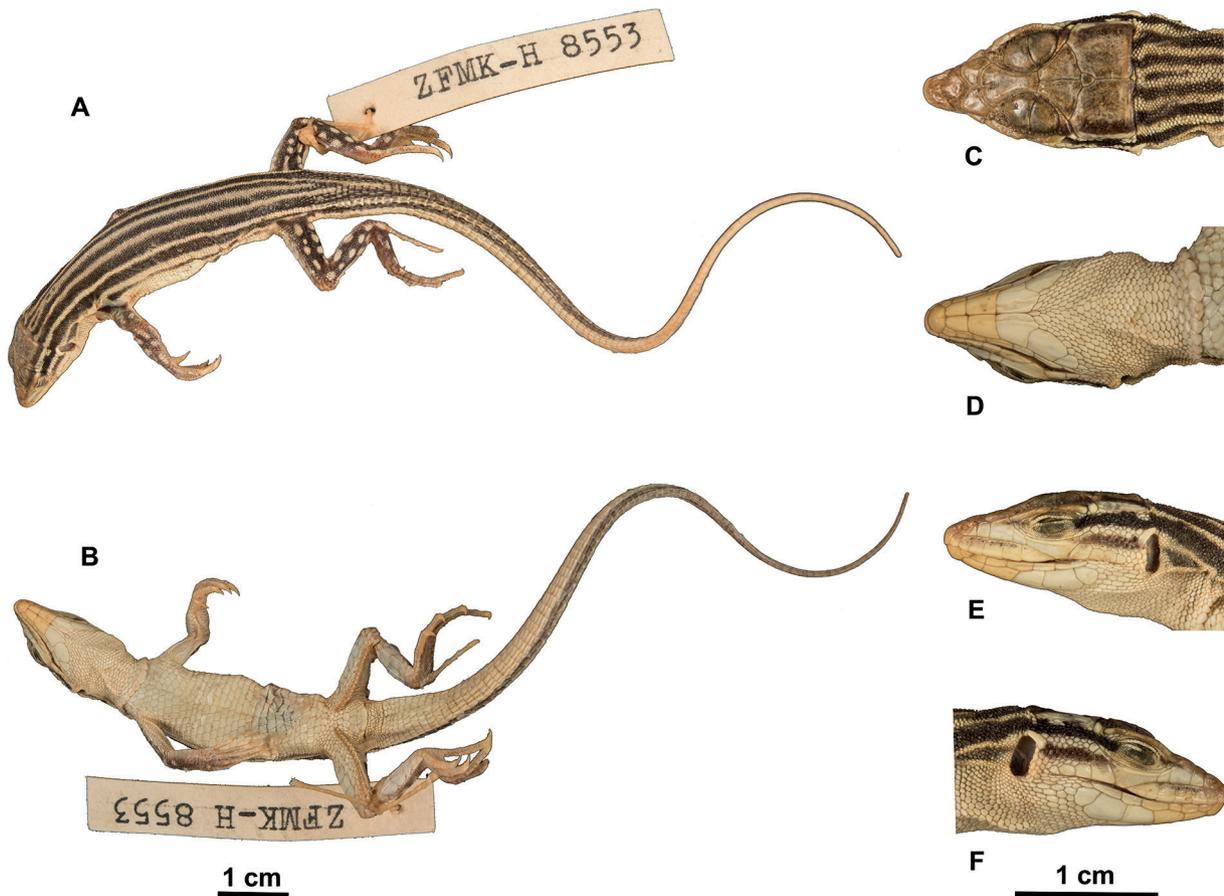
**Abstract.** The presented paper reports on the first record of *Eremias kakari* Masroor, Khisroon, Khan, Jablonski, 2020 for Afghanistan based on morphological data obtained from one specimen stored for 49 years in the Zoological Research Museum Alexander Koenig, Bonn, Germany. Up to now, the species was known only from the type locality in Pakistani Balochistan.

**Key words.** Central Asia, endemism, faunistics, morphology, range extension, Reptilia.

The recently described new species of the genus *Eremias* Fitzinger, 1834 (Squamata: Lacertidae), *E. kakari* Masroor, Khisroon, Khan, Jablonski, 2020, was considered as an endemic lizard, collected in the vicinity of Tanishpa village (31.1869° N, 68.4126° E), Torghar, Toba Kakar Range in the Sulaiman Mountains, at an elevation around 2,500 m a.s.l. (Masroor et al. 2020), a remote area of Pakistani Balochistan. This species is a member of the subgenus *Rhabderemias* Lantz, 1928 and is a morphologically and genetically well-defined species. Based on a multilocus dataset of mitochondrial and nuclear markers, *E. kakari* forms the sister taxon to a clade comprising the closely related species *E. scripta* Strauch, 1867 and *E. cholistanica* Baig & Masroor, 2006 (Khan et al. 2021). The species is characterized by having a single row of subdigital lamellae and a complete row of lateral scales with an overall three scales around the penultimate phalanx of the 4<sup>th</sup> toe. *Eremias kakari* is similar to *E. fasciata* but can be distinguished from it by having 22–26 subdigital lamellae under 4<sup>th</sup> toe, 48–55 dorsal scales across midbody, ventrals in 11–14 oblique longitudinal series across the belly, 17–21 femoral pores, and 17–21 scales in the 9<sup>th</sup>–10<sup>th</sup> caudal annulus. This species is known only from 13 specimens deposited in the Pakistan Museum of Natural History (PMNH), Islamabad, Pakistan. Because the type locality of *E. kakari* is close to the border with Afghanistan (ca 60 km), and the same mountain range (Shīnkay Ghar, Sulaiman Mountains) traverses through both countries, its presence in Afghanistan was expected (Masroor et al. 2020). Most of the territory of Afghani-

stan is, however, inaccessible due to the long-time presence of political instability and therefore field research is almost impossible to carry out. The current herpetological research in Afghanistan is thus based mostly on the historical museum collections (see Wagner et al. 2016; Jablonski et al. 2019a) which is also the case of this contribution. In this scientific note, we provide the first record of *E. kakari* for the territory of Afghanistan based on a specimen stored for 49 years in the museum collection of the Zoological Research Museum Alexander Koenig, Bonn, Germany (ZFMK).

This single specimen of *E. kakari* (ZFMK-H 8553; currently stored as *E. fasciata*) was collected in Urgun, Paktika Province (32.858° N, 69.146° E, ~2300 m a.s.l.) during July 1972 by Clas Naumann, the former director of the ZFMK who carried out zoological research in Afghanistan. The examined specimen is an adult male with the following morphological characters that fully correspond with the diagnostic characters of *E. kakari* presented by Masroor et al. (2020; measurements in mm): snout-vent length (SVL = 58.32), tail length (TL = 91.0), head length (HL = 12.93), head width (HW = 6.74), head height (HH = 6.60), trunk length (TrL = 18.41), hindlimb length (HLL = 32.27), femur length (FL = 8.7), crus length (CL = 8.24), forelimb length (FLL = 20.7), length of humerus and radius (HRL = 12.35), length of femoral pore row (LFPR = 7.29), width of space between femoral pore rows (LFPS = 1.8), length of frontal scale (FrL = 3.2), maximum width of frontal scale (FrW = 2.4), length of pileus (Lpil = 12.24), head length from snout tip to the



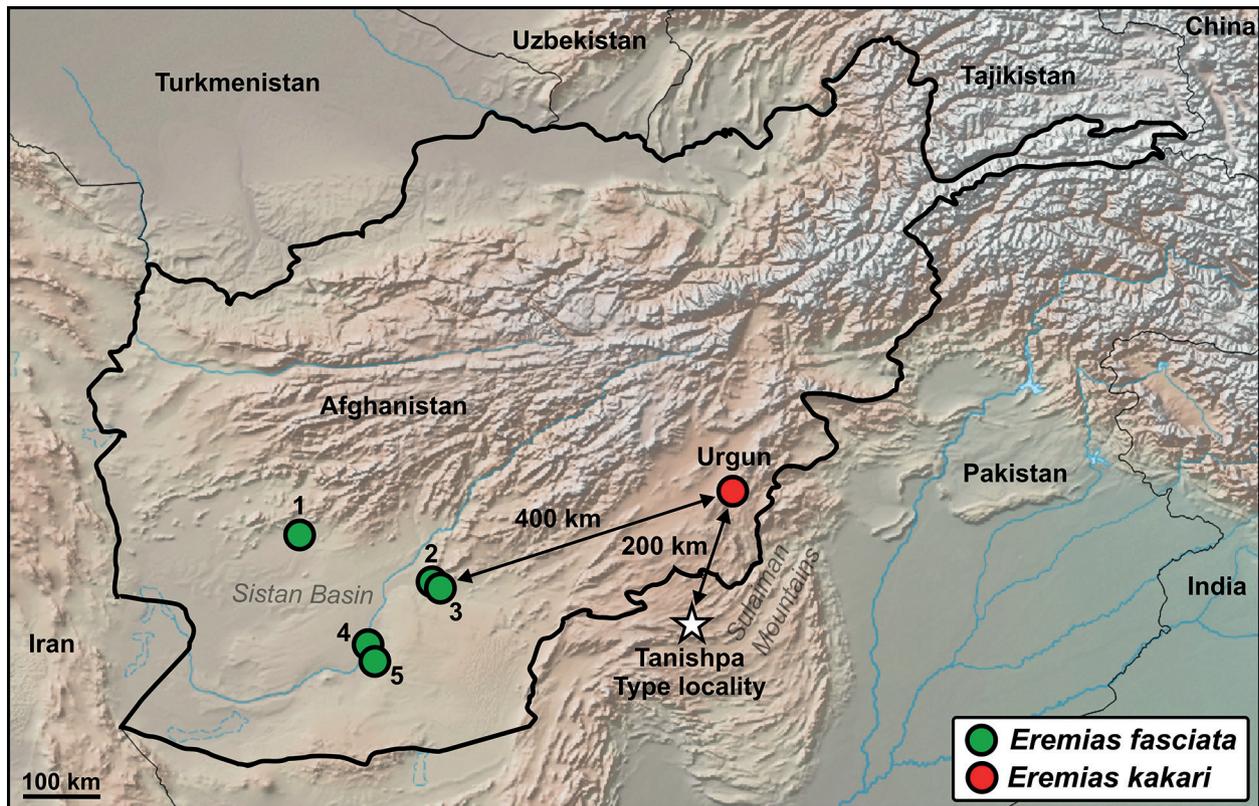
**Fig. 1.** The specimen of *Eremias kakari* (ZFMK-H 8553) from Urgun, Paktika Province, Afghanistan. **A.** Dorsal view on the body. **B.** Ventral view. **C–F.** Details on parts of the head. **C.** Dorsal parts. **D.** Ventral parts. **E–F.** Lateral parts.

anterior edge of collar (NL = 16.5), length of supranasal suture (SNL = 0.5), length of frontonasal (FNL = 1.5), length of prefrontal (PFL = 1.56), width of prefrontal (PFW = 1.45), number of supralabials (SL = 10), number of infralabials (IL = 7), number of dorsal scales on midbody (DS = 49), maximum number of scales across mid-belly in a single row in the widest part (VL = 12), number of ventral scales in a single row (VT = 32), gulars, from chin shields to the collar (G = 26), number of collar scales (C = 8), scales around ninth and tenth caudal whorl posterior to the vent (NCWS = 18), number of supralabials anterior to subocular (SLAS = 6), number of femoral pores (FP = 17), number of scales separating femoral pore rows (FPS = 4), subdigital lamellae under 4th toe (SDLT 4<sup>th</sup> = 23), number of scales around 4th toe at penultimate phalanx (SA 4<sup>th</sup> = 3), subdigital lamellae under 4th finger (SDLF 4<sup>th</sup> = 16), contact of fifth maxillary/chin shield with infralabial (FMIL = yes), subocular in contact with a mouth (SOM = yes), contact of frontal and supraoculars (FSO = no), contact of infranasal with rostral (INTR = yes).

After the description of *E. kakari*, we found the above-mentioned museum specimen ZFMK-H 8553, morphologically determined as *E. fasciata*. The collect-

ing locality of the specimen is, however, far away from the known records of *E. fasciata* (~400 km airline) in the Afghan part of the Sistan Basin (see Wagner et al. 2016 and Fig. 2 of this study). We have considered it as a remarkable range extension of *E. fasciata* for the country suggesting that the collected specimen ZFMK-H 8553 could be a different species. Due to the relatively close distance to the type locality of *E. kakari* (~200 km airline) and its presence in the same mountain range, we correctly expected that it could be conspecific to *E. kakari*. Moreover, ZFMK-H 8553 was collected in an area that does not represent the typical habitats known for *E. fasciata*. *Eremias fasciata* is characteristic for rather lower-lying desert areas, where it inhabits gravely hamada, salt-encrusted silt, drifting loess, silty alluvium, and sandy plains with bushes (Anderson 1999, Khan 2006), while *E. kakari* is, based on current information, mostly a mountain species inhabiting rocky habitats (Masroor et al. 2020). Such habitat characteristic for *E. fasciata* corresponds with the environment in the Sistan Basin, and for *E. kakari* in Urgun, respectively.

Interestingly, specimens of *E. fasciata* from southern Afghanistan differ also morphologically (e.g., number of dark stripes on the body) from the original species



**Fig. 2.** The distribution records of *Eremias kakari* (ZFMK-H 8553) and *E. fasciata* from Afghanistan with the designation and the airline distance of the type locality of *E. kakari* from Tanishpa in Pakistan and from the nearest records of *E. fasciata* from the Sistan Basin in Afghanistan (Wagner et al. 2016): 1 = 6 km NW Delaran, Farah Province (CAS 120400-04); 2 = 64 km W Kandahar, Kandahar Province (CAS 120398-99); 3 = Pirezada, Kandahar Province (ZMUC R-4594); 4 = 5 mi downstream from Girishk, Dasht-i-Margo Area, Chah-i-Angir, Helmand Province (CAS 84684-88); 5 = 56 km S and 10 km E of Darweshan, Helmand Province (CAS 120397). CAS = California Academy of Sciences, USA; ZMUC = Zoological Museum, University of Copenhagen, Denmark.

description from the Iranian type locality in Saidabad, southwest of Kerman (Anderson 1999). Therefore, the situation needs further integrative research to find out whether the morphological variability in *E. fasciata* is only environmentally inducted or whether divergent evolution takes place. Nevertheless, *E. kakari* is the 106<sup>th</sup> species of reptile fauna recorded from Afghanistan, 17<sup>th</sup> species in the family Lacertidae and 13<sup>th</sup> species of the genus *Eremias* (see Jablonski et al. 2019b).

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