

## Notes on the herpetofauna of Kunduz Province, northeastern Afghanistan, with the first record of *Varanus griseus caspius* (Eichwald, 1831)

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The deficiency of recent herpetofaunistic data from Afghanistan is still a major problem for evaluating species diversity and possible further conservation activities in this country. The majority of currently available data from the country are from before 1978, when political changes and the subsequent Soviet invasion started long-term war and instability (Wagner et al., 2016; Jablonski et al., 2019b). However, some records are also available from the 21<sup>st</sup> century due to the former or recent presence of particular members from foreign missions fascinated by the local fauna (Joisten, 2013; Jablonski and Lesko, 2018; Jablonski et al., 2019a). Although the herpetofauna of Afghanistan is currently represented by 117 species (Jablonski et al., 2019a), many of the 34 Afghan provinces remain unexplored and new province and even country records are expected (Wagner et al., 2016).

Herein, we present observations on the herpetofauna of Kunduz Province in northeastern Afghanistan conducted during 2012. The dominant geographic feature in the province is the valley of the Kunduz River, which flows from south to north into the Amu Darya River, the most important barrier to northern parts of Central Asia. Compared to other provinces of Afghanistan, Kunduz Province consists mostly of lowland steppe, semi-desert, or desert habitats typical of northern Afghanistan. The herpetofauna of Kunduz Province is currently represented by two amphibians (Bufonidae: *Bufotes turanensis*; Ranidae: *Pelophylax terentievi*), five lizards (Agamidae: *Phrynocephalus interscapularis sogdianus*, *Trapelus s. sanguinolentus*; Gekkonidae: *Tenuidactylus turkmenicus*; Lacertidae:

*Eremias v. velox*, *E. nigrocellata*), eight snakes (Erycidae: *Eryx t. tataricus*; Colubridae: *Elaphe dione*, *Hemorrhois ravergeri*, *Platyceph rhodorachis* ssp.; Natricidae: *Natrix tessellata*; Lamprophiidae: *Psammophis lineolatus*; Typhlopidae: *Xerotyphlops vermicularis*; Elapidae: *Naja oxiana*), and one tortoise (Testudinidae: *Testudo h. horsfieldii*) (Joisten, 2013; Wagner et al., 2016), which is only 14% of all amphibians and reptile species of Afghanistan.

A series of observations was conducted from May–July 2012. Records and photographs were obtained during irregular field trips made by the second author (SB) as part of his non-zoological work in Afghanistan. Overall, five species from five families were observed, one of which is a new record for Kunduz Province, and other data provide recent species confirmation for the province (Wagner et al., 2016).

Dozens of adult and subadults of the ranid frog *Pelophylax terentievi* (Mezhzherin, 1992) were observed (Fig. 1A, B) in the area between Kunduz Airport and Khanabad on 28 May 2012 (36.6810°N, 69.1144°E; elevation 499 m). The observation was made in a small, shaded streambed that had recently dried up. The rest of the observations were from and around Kunduz: Khanabad road (ca. 36.6735°N, 69.0612°E; elevation 459 m) and Khanabad town (36.6699°N, 69.1088°E; elevation 485 m), in irrigation canals, reservoirs, or rice fields (Fig. 1E).

One adult individual of the agamid lizard *Trapelus s. sanguinolentus* (Pallas, 1814) was observed on 24 May 2012 in the village of Deh-e Kalan (36.5802°N, 68.9952°E; elevation 538 m) while basking in a dry field.

An adult and a subadult of the gecko *Tenuidactylus turkmenicus* (Szczerebak, 1978) were found on 28 July 2012 around 17:00 h near Kunduz Airport (36.6729°N, 68.9049°E; elevation 554 m) under iron plates on the sandy ground between shipping containers.

A single adult individual of the monitor lizard *Varanus griseus caspius* (Eichwald, 1831) (Fig. 1C) was observed on 11 May 2012 south of Kunduz (36.6442°N, 68.9592°E;

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**Figure 1.** Observed amphibians and reptiles from Kunduz Province, Afghanistan. *Pelophylax terentievi* in (A) dorsal and (B) ventral views. (C) *Varanus griseus caspius*. (D) *Tenuidactylus turcomenicus*. (E) Habitat of *P. terentievi* near Khanabad. (F) Habitat of *V. g. caspius* and *Testudo h. horsfieldii* in an old, dry river valley south of Kunduz. Photos by Sjoerd van Bommel (<http://www.bommelphotography.com>).

elevation 456 m) in an old dry river valley (Fig. 1F). This observation is the first record of the species for Kunduz Province. This species was previously known in Afghanistan from Badghis, Balkh, Farah, Helmand, and Herat Provinces (Wagner et al., 2016). Despite this range extension into northeastern Afghanistan (Fig. 2), this record fits the context of overall species distribution in Central Asia associated with steppe or desert areas (Sindaco and Jeremčenko, 2008). The closest record to Kunduz is from Mazar-i-Sharif (Balkh Province), approximately 170 km by air to the west (Fig. 2).

Adult individuals of the tortoise *Testudo h. horsfieldii* Gray, 1844 were observed in the area between Kunduz and Khanabad. The first location was a grassy field near Khanabad (36.6810°N, 69.1144°E; elevation 499 m) where one adult individual was observed on 24 May 2012. The second observation was of two adult individuals in an old dry river valley south of Kunduz (36.6442°N, 68.9592°E, elevation 456 m) on 11 May 2012. We also made several other observations of the species during the stay in this area but without details on specific localities. Overall, the species seemed very common.





**Figure 2.** Distributional records of *Varanus griseus caspius* from Afghanistan (white circles) and the present new record from Kunduz Province (red circle)

Kunduz Province lies along Afghanistan's northern border with Tajikistan. Although the area between Tajikistan and Afghanistan is an important biogeographic barrier represented by the Amu Darya River, the likelihood that other species of amphibians and reptiles from different geographic directions would be present is highly expected. Checking the most comprehensive checklist to date (Wagner et al., 2016: Fig. 26) and recent additional data for the country (Jablonski et al., 2019a), data from Kunduz Province are very limited and mostly come from older surveys (e.g., Clark, 1990). Certain species are expected to occur but have not yet been confirmed for Kunduz Province. These include the toads *Bufo perrini* and *B. pewzowi* (Dufresnes et al., 2019) as well as taxa of species-rich families occurring elsewhere in Afghanistan (e.g., Agamidae, Gekkonidae, Colubridae) that have been recorded or considered as common in surrounding areas or provinces. Especially, the absence of the genera *Laudakia* and *Paralaudakia* (Agamidae) in Kunduz Province merits further investigations, as both are common lizards in most of the studied regions of the country (Wagner et al., 2016).

Based on photographic identification, Joisten (2013) mentioned the presence of the gecko *Bunopus*

*tuberculatus* in Kunduz Province. This record seems doubtful since the currently known distribution of this species in Afghanistan includes only desert areas in the western part of the country (Wagner et al., 2016). On the other hand, a significant range extension cannot be excluded due to its presence in southern Turkmenistan (Sindaco and Jeremčenko, 2008). However, it is probable that the specimen in question was confused with a member of the genus *Tenuidactylus* (Joisten, pers. comm.) or with *Crossobamon eversmanni*, a morphologically similar gecko associated with sandy deserts of Central Asia. Despite not currently being on the list of the herpetofauna of Kunduz Province, the occurrence of *C. eversmanni* in the northern parts of the province is highly expected. The same habitats, suitable for this species, are also present in southern Tajikistan on the border with Kunduz Province (Jablonski, pers. obs.). Moreover, the presence of *C. eversmanni*, *Teratoscincus scincus* (Sphaerodactylidae), *Echis carinatus* (Viperidae), and other reptiles is well known from southern Tajikistan (Said-Aliev, 1979). Additional field research will result in new records of amphibians and reptiles occurring in these areas.

**Acknowledgements.** This study was supported by the Slovak Research and Development Agency under contract no. APVV-19-0076. We thank Stephen Goldberg for English editing and one anonymous reviewer for useful comments.

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