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Updated distribution and new locality records of the Caspian Bent-toed Gecko, *Tenuidactylus caspius* (Eichwald, 1831), in Armenia

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Numerous gecko species exhibit a strong association with human settlements worldwide, occupying walls, ruins, and other man-made structures. This synanthropic behavior facilitates their passive dispersal and the establishment of introduced populations, including in urban environments across Europe and the Western Palearctic (Kraus, 2009; Hoskin, 2010; Stabler et al., 2011; Urošević et al., 2023).

The genus *Tenuidactylus* comprises a group of Palearctic naked-toed geckos distributed across Central Asia, the Caucasus, and adjacent regions (Bauer et al., 2013; Nazarov and Poyarkov, 2013). *Tenuidactylus caspius*, the Caspian Bent-toed Gecko, is widely distributed in this area and is strongly synanthropic, commonly inhabiting houses, walls, and other man-made structures (Šmíd et al., 2014). In Armenia, *T. caspius* is the only recorded gecko species and it is generally considered to be introduced. It has been reported from a limited number of localities, including Yerevan, Armavir, and Meghri (Arakelyan et al., 2011). These records suggest a fragmented distribution within the country, largely associated with human-modified habitats.

Recent observations from the Caucasus indicate that *T. caspius* is capable of expanding its range and forming new populations in urban environments. In Georgia, introduced populations have been reported from several cities and towns, including Tbilisi (Chinchaladze, 1956) and, more recently, Rustavi, Telavi, and Gori (Bukhnikashvili, 2018), as well as from Kutaisi (Prondzynska, 2025). However, the species' current distribution in Armenia remains insufficiently documented. Herein, we present new records of *T. caspius* from several localities in Armenia, significantly expanding the known range of the species within the country and providing additional insights into its distribution and habitat use.

Field surveys were conducted between 2023 and 2025 in multiple localities (Table 1) across Armenia. Surveys targeted urban environments at relatively low elevations, particularly in Ararat Province, where climatic conditions and habitat structure were deemed suitable for the species. Additional surveys were conducted opportunistically in areas located near previously known localities (e.g., Agarak near Meghri). We searched for geckos visually on walls, buildings, and other man-made structures, primarily during the evening hours. Observations were documented photographically, and geographic coordinates were recorded for each locality. Individuals were not captured or handled, and all observations were made in situ based on visual detection and photographic documentation.

Survey effort varied among localities. At sites visited once or twice, surveys typically began approximately 30 min after sunset and continued for 1–2 h, focusing on suitable habitats such as walls, buildings, and other artificial structures, using handheld flashlights. In Meghri, similar methods were applied during repeated visits in different seasons across multiple years. In Yerevan, observations were frequently collected during both daytime and nighttime surveys, including repeated visits to known localities as well as exploratory surveys in previously unsampled areas with suitable habitat conditions.

In Ijevan, surveys were initiated following the discovery of a dead specimen and subsequent observation of a live individual by the third author, which prompted targeted searches in the area. In addition to field surveys, opportunistic records were incorporated from citizen science platforms (iNaturalist) and wildlife-focused social media groups. Records obtained from citizen

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Table 1. Locality records of *Tenuidactylus caspius* in Armenia, including geographic coordinates (approximate central points of localities), survey dates, number of individuals observed, and habitat descriptions.

Locality	Coordinates	Elevation (m)	Date(s)	*n*	Comments
Yerevan	40.17°N, 44.50°E	900–1100	2023–2025	> 100	mainly southern, lower-elevation districts; residential areas and natural rocks
Masis	40.07°N, 44.44°E	840	29 Aug 2025	2	residential area
Artashat	39.96°N, 44.54°E	830	1–3 Aug 2023	12	town center, residential areas, railway station
Vedi	39.91°N, 44.72°E	900	27 Sep 2025, 5 Oct 2025	4	town center
Armavir	40.14°N, 44.04°E	870	2 Aug 2025	1	photographic record (iNaturalist)
Ijevan	40.88°N, 45.15°E	670	28 Sep 2024, 11 Jul 2025	3	town center; northernmost record
Meghri	38.89°N, 46.24°E	600	Mar 2023, Feb 2024, Jul 2025	>50	widespread; winter activity
Agarak	38.86°N, 46.19°E	620	24 Jul 2025	8	urban park and town center; new locality near Meghri

science platforms were verified by the authors based on photographic evidence and, when possible, direct communication with observers. Records that could not be reliably confirmed or were considered ecologically unlikely were excluded from the dataset.

We documented the presence of *T. caspius* in eight localities across Armenia (Fig. 1), including seven surveyed localities (Yerevan, Masis, Artashat, Vedi, Ijevan, Meghri, and Agarak) and a confirmed record from Armavir based on a recent photographic observation (Table 1; Fig. 2). Most records were obtained from low-elevation localities, primarily below 1100 m. Across all localities, the species was consistently associated with artificial structures such as walls, buildings, and bridges.

Our record from Ijevan (Fig. 2B) represents the northernmost and geographically most isolated occurrence of *T. caspius* in Armenia, and the first record for Tavush Province. The presence of the species at this locality was first indicated by the discovery of a dead individual on 26 June 2024. Subsequently, a live juvenile was observed on 28 September 2024 and two additional individuals were recorded in July 2025, confirming the persistence of the population.

In Meghri, *T. caspius* was found to be widespread within the town (Fig. 2C), with individuals recorded across multiple sites across a variety of urban habitats (Fig. 2D), indicating that the population is not restricted to previously reported sites. Observations were made during three visits in 2023–2025, indicating the persistence of the population. Notably, two active individuals were observed at night in February 2024, suggesting occasional winter activity in this region.

In Yerevan, *T. caspius* was recorded frequently, with observations concentrated in the southern, lower-elevation parts of the city, where individuals were found on both artificial structures and natural rock formations. In southern Armenia, the species was also recorded in Agarak, representing an additional locality near Meghri and further indicating its presence across multiple settlements in this region. The presence of *T. caspius* in Armavir was confirmed by a recent photographic record, demonstrating that the species persists in this previously reported locality.

The distribution pattern observed in Armenia may be partially associated with passive dispersal along historical transport corridors, as previously suggested by Arakelyan et al. (2011). Several of the recorded localities are situated along the railway formerly connecting southern and central Armenia, supporting

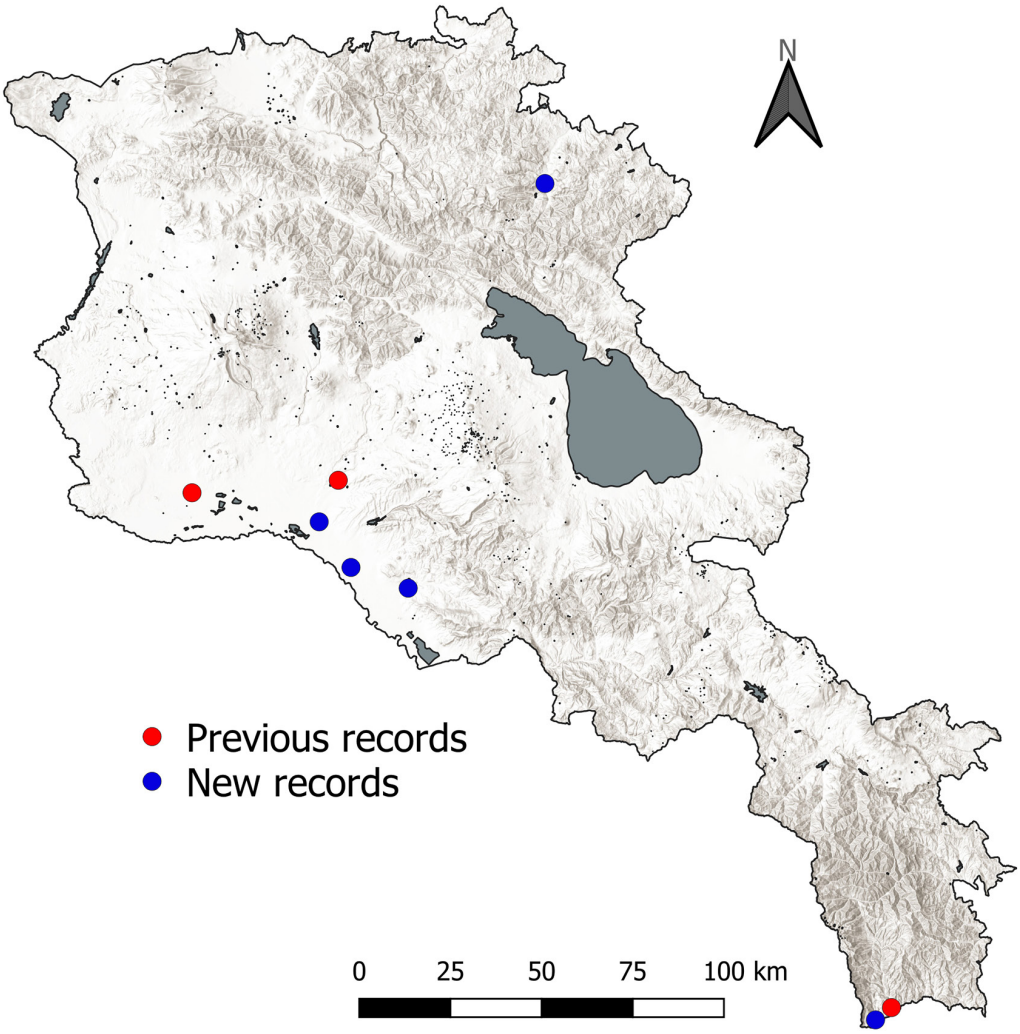

Figure 1. Distribution of *Tenuidactylus caspius* in Armenia. Red circles indicate previously published records (Arakelyan et al., 2011), while blue circles represent new localities documented in this study.

this hypothesis. However, additional pathways of human-mediated dispersal, such as international and domestic cargo and road transport, may also contribute to the spread of the species, as has been documented for other synanthropic geckos (Weterings and Vetter, 2017; Rocha et al., 2022; Abreo et al., 2026). The observed distribution pattern suggests that *T. caspius* is not only expanding its range in Armenia but may also be repeatedly introduced into new localities through human-mediated transport. The concentration of records in urban environments further highlights the importance of synanthropic habitats in facilitating establishment and persistence of gecko populations. The relative importance of these mechanisms remains unclear and warrants further investigation. Future studies incorporating broader sampling, citizen science data, and ecological or climatic modelling may help to better understand the factors limiting the species' distribution within Armenia.

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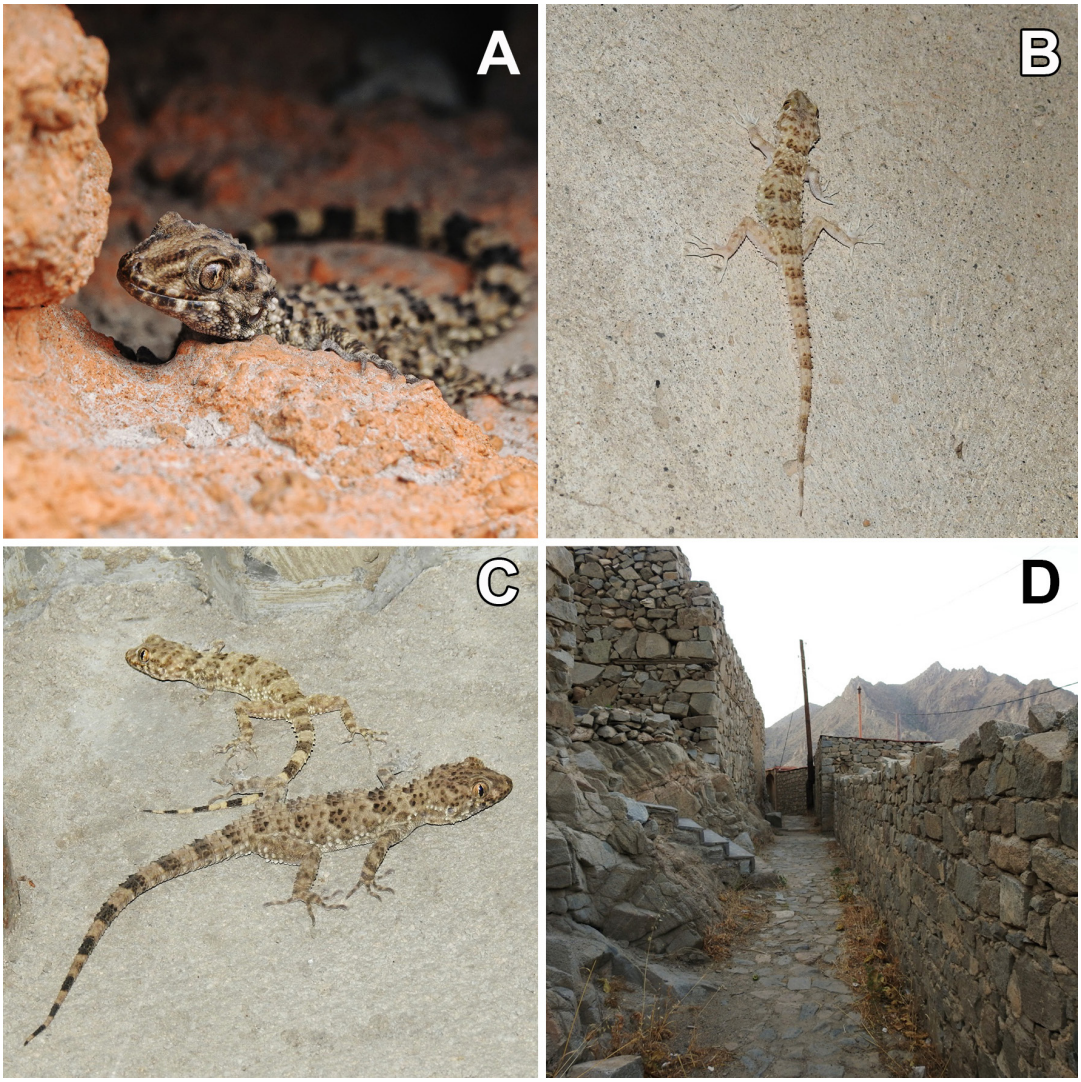

Figure 2. Representative individuals and habitat of *Tenuidactylus caspius* in Armenia. (A) Adult from Yerevan. (B) Individual from Ijevan (Tavush Province). (C) Two individuals from Meghri (Syunik Province). (D) Typical habitat in Meghri, showing stone walls and urban structures. Photos by A. Yargina (A) and K.M. Prondzynska (B–D).

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