

SHORT COMMUNICATION

Notes on the natural history and distribution of *Carinatogeocko stevenandersoni* Torki, 2011

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Abstract.—*Carinatogeocko* Golubev and Szczerbak, 1981 comprises three species: *C. aspratilis* (Anderson 1973), distributed in Iran, *C. heteropholis* (Minton et al. 1970), distributed in a few areas in Iran and Iraq, and *C. stevenandersoni* Torki 2011, distributed in the western Iranian plateau (Minton et al. 1970; Anderson 1973, 1999; Golubev and Szczerbak 1981; Nazari-Serenjeh and Torki 2008; Torki 2011). *Carinatogeocko stevenandersoni* was recently described by Torki (2011) and at that time known only from the type locality. In this study we report new localities and natural history for *C. stevenandersoni* in the western Iranian plateau. For natural history, we worked at the type locality and three other new localities during spring 2010 through early spring 2011.

Key words. *Carinatogeocko stevenandersoni*, distribution, natural history, western Iranian Plateau

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Distribution

Carinatogeocko stevenandersoni was described from a single locality in the Tang-e-Gavshomar region (Ganj-Dare), Delphan City, Lorestan Province. During our recent fieldwork, we discovered three additional localities for *C. stevenandersoni* in the western Zagros Mountains, Lorestan Province, as follows: (1) Sepid-Koh mountain, Khorramabad, 33° 43' N, 49° 54' E; 1500-1700 m a.s.l.; this locality is covered by oak forest, syntopic reptiles as follows: snakes: *Rhynchocalamus melanocephalus*, *Platyceps rhodorachis*, *Hierophis* (s.l.) *andreaus*, *Typhlops vermicularis*, *Leptotyphlops macrorhynchus*, and *Macrovipera lebetina*; lizards: *Laudakia nupta*, *Ophisops elegans*, *Ablepharus pannonicus*, *Trachylepis aurata*, *Tropicolotes helenae*, and *Asaccus griseonotus*. (2) Bababozorg, Nourabad-Kohdasht, 33° 55' N 47° 45' E; 1600-1900 m a.s.l., this locality covered by oak forest, syntopic reptiles as follows: snakes: *Rhynchocalamus melanocephalus*, *Platyceps najadum*, *Malpolon monspessulanus*, and *Macrovipera lebetina*; lizards: *Laudakia nupta*, *Trapelus lessonae*, *Acanthodactylus boskianus*, *Ophisops elegans*, *Ablepharus pannonicus*, *Trachylepis aurata*, and *Varanus griseus*. (3) Mehrab-Koh, Nourabad, 33° 54' N 47° 45' E; 1700-1800 m a.s.l., this locality covered by oak forest, syntopic reptiles as follows: snakes: *Rhynchocalamus melanocephalus*, *Dolichophis jugularis*, *Malpolon monspessulanus*, *Typhlops*

vermicularis, and *Macrovipera lebetina*; lizards: *Laudakia nupta*, *Trapelus lessonae*, *Lacerta media*, *Ophisops elegans*, *Ablepharus pannonicus*, *Trachylepis aurata*, and *Varanus griseus*.

All localities are covered by oak forest, as is true for the type locality (Torki 2011). Mountain structures in all localities is sedimentary.

In general, *C. stevenandersoni* is distributed in four localities, type locality, and three above localities. Based on mountain structures, *C. stevenandersoni* may be distributed in similar habitats in Kermanshah and Illam Provinces, as these same mountains continue into Illam and Kermanshah mountains.

Based on previous reports (e.g., Anderson 1999; Nazari-Serenjeh and Torki 2008; Torki 2011) *C. heteropholis* and *C. aspratilis* are distributed in low elevation (less than 1500 m). In contrast, *C. stevenandersoni* is distributed to above 1500 m a.s.l. Based on all available information about distribution of the genus *Carinatogeocko*, *C. stevenandersoni* occurs at higher elevations than other species.

Natural History

Based on our fieldwork in all localities, *C. stevenandersoni* has seasonal activity as follows: activity started in late March to early September and in October, hiberna-

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tion began. This is the case for most reptiles in these regions (e.g., Torki 2009; Torki et al. 2010; Torki and Gharzi 2008). We did not observe any specimens during the cold season (late autumn to winter), because temperature at this time is very low. Therefore, hibernation occurred for *C. stevenandersoni* for less than six months.

Shelter sites of *C. stevenandersoni* are limited to between sedimentary stones. In the type locality, *C. stevenandersoni* has the same shelter sites with *Asaccus nasrullahi*, because the shelter site of *A. nasrullahi* is limited to cracks in sedimentary stones (Torki et al. 2010). Based on our field observations, *C. stevenandersoni* feeds on insects, larval insects, and spiders. In the type locality, *C. stevenandersoni* appears to share similar food items with *A. nasrullahi*, also a nocturnal gecko species. *Tropicolotes helenae* is another gecko apparently in dietary competition with *C. stevenandersoni* in the type locality and Sepid-Koh. Nocturnal activity of *C. stevenandersoni* began at sunset and extended to before sunrise. In contrast, nocturnal activities of *A. nasrullahi* started shortly before sunrise and continued to morning, and in some rare specimens, to midday. Important predators of *C. stevenandersoni* are *Rhynchocalamus melanocephalus* and *Hierophis* (s.l.) *andreaus*. Under captive conditions, *Ophisops elegans* and *Trachylepis aurata* eat *C. stevenandersoni*. Some large scorpions easily killed and ate *C. stevenandersoni* (especially juvenile specimens). This also occurred for other small geckos, such as *Tropicolotes helenae* (e.g., Torki and Gharzi 2008).

Based on field observations, we see two eggs in most female specimens, and a few specimens have one egg in the abdomen. We transferred two female specimens to lab conditions; both specimens had eggs in their abdomen. Eggs in *C. stevenandersoni* are spherical, white. Egg laying in *C. stevenandersoni* occurred on the surface of stones, in crack(s) of rocky stones. Egg laying in both female specimens occurred in June. Hatching occurred 38-45 days after eggs were laid. Coloration of juvenile specimens (lighter) is different from adult specimens (mostly darker). This is similar to the genus *Asaccus* and in contrast to *Hemidactylus flaviviridis* (Iranian populations; our observations, unpubl. data). The tail of juvenile specimens of *C. stevenandersoni* is yellowish (different from body); this is in contrast to adult specimens.

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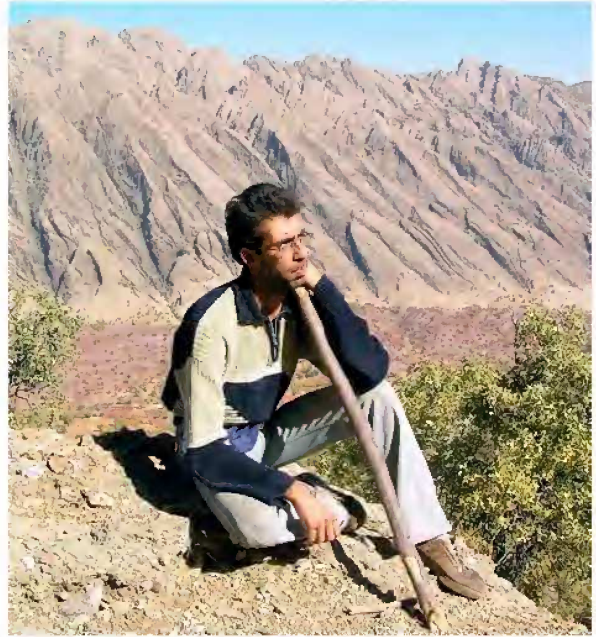
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Farhang Torki earned his Bachelor of Science (B.Sc.) degree in animal biology from Lorestan University and his Masters of Science (M.Sc.) degree in animal biosystematics from Razi University. During his B.Sc. studies, he worked on histological and embryological methods, especially on spermatogenesis and oogenesis of reptiles, and the herpetofauna of Lorestan Province. During his graduate studies (M.Sc.) he worked on the systematics of amphibians and reptiles of the southern and western Iranian Plateau and continued developmental biology work in herpetology. Following his graduate work he established the Farhang Torki Ecology and Herpetology Center for Research (FTEHCR) and the Farhand Torki Herpetology Museum (FTHM). The purpose of his center during 2007-2010 was based on ecology and systematics of Iranian herpetology. The FTEHCR is an independent institution supported solely by a bequest from his father. Currently, Farhang is studying the ecology and evolution of geckos in Iran, especially the behavioral evolution of *Asaccus* and *Tropicolotes*.