

A NEW SUBSPECIES OF THE ROCK LIZARD *Lacerta caucasica* (SAURIA, LACERTIDAE) FROM THE SOUTH-EAST OF CHECHEN REPUBLIC ON THE CAUCASUS

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A new subspecies of *Lacerta caucasica* (s. str.), *L. c. vedenica* from the northern slope of the Andiiskii Ridge (SE Chechenia) is described. This population appears to be geographically isolated from the main range of *L. caucasica*, but contacts the northern limits of the range of a closely related species, *L. daghestanica*. It differs from the other populations of *L. caucasica* as well as from the related species, *L. daghestanica* and *L. alpina* by a very low number of superciliary granules and superciliary scales as well as by the lack of greenish paints in the dorsal coloration.

Key words: Sauria: *Lacerta*, *L. caucasica vedenica* ssp. nov., Caucasus.

Until recently, the Caucasian rock lizards, belonging to the *Lacerta caucasica* complex, has been regarded as a single species with the following subspecies: *L. c. alpina*, inhabiting highlands in the western part of the range of this taxon; *L. c. caucasica*, occupying both sides of the Great Caucasian Ridge from the Elbrus mount in the west to its south-eastern ending in the east; and *L. c. daghestanica*, inhabiting its northern slope from the eastern North Ossetia to Daghestan (Bannikov, Darevsky et al., 1977; Darevskij, 1984). As the latter two forms were found to exist sympatrically without morphological intergradation (Roytberg, Lotiev, 1992; Roitberg, 1994, 1999a) and a study of allozyme variation revealed fixed allelic differences between all three taxa (Fu et al., 1995), it was suggested to consider them as separate species (Fu et al., 1995; Murphy et al., 1996).

The total range of *L. caucasica* (s. str.) includes a small isolated fragment located in the northern slope of the Andiiskii Ridge (SE Chechen Republic) and contacting the northern border of the main range of *L. daghestanica* (Fig. 1). Darevsky (1967, 1984)

noted substantial differences between this isolated population and some other populations of *L. caucasica* in the number of superciliary granulae. A detailed morphological study of the *Lacerta caucasica* complex throughout the range of this taxon, including some new material from the SE of Chechenia, allow us to conclude that *L. caucasica* from this area should be regarded as a separate subspecies which is described below.

Lacerta caucasica vedenica ssp. nov. (Figs. 2 – 4).

Holotype. ZISP³ 17744 (1), adult male, 1 km south of Vedenno (rock faces along the road Vedenno – Khorachoi), SE Chechen Republic. Coll. I. Darevsky, August 14, 1963.

Paratypes. ZISP 17744 (2 – 40): 11 adult males, 26 adult females and 2 juveniles, the same data as for the holotype.

Besides the type series, some additional material from this and adjacent localities is kept in ZISP and in the private scientific collection of E. S. Roitberg.

Subspecies diagnosis. A medium sized, brown painted rock lizard (snout-vent length up to 65 mm, tail length up to 118 mm) differs from all the other

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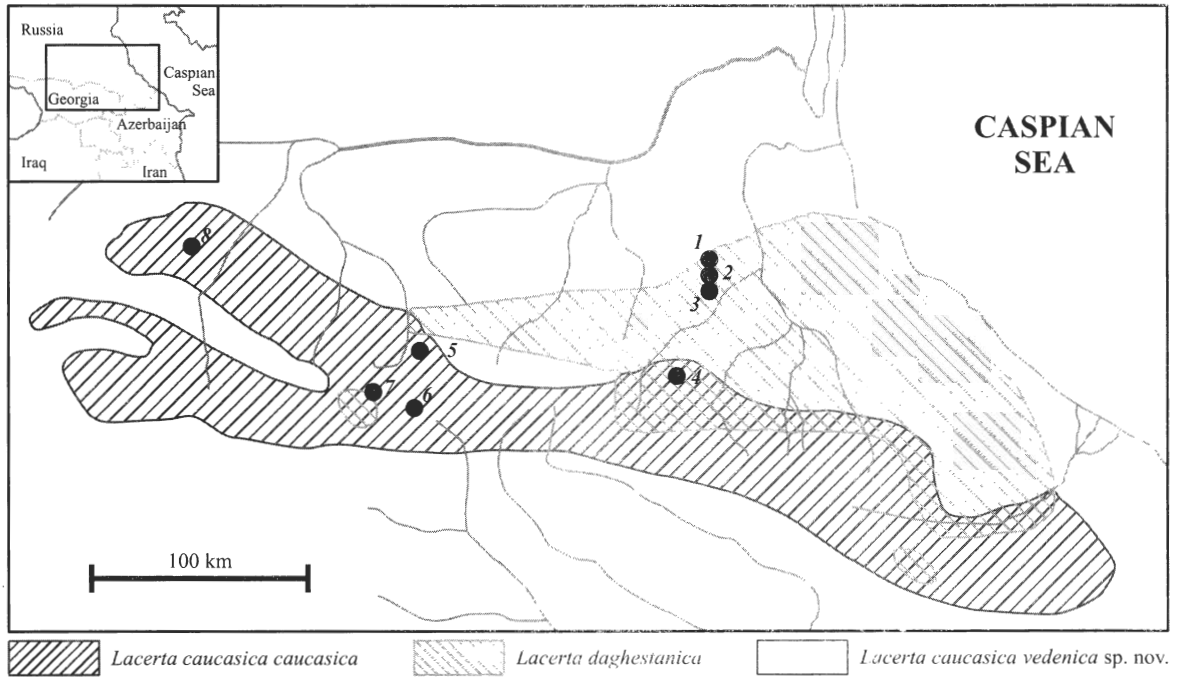


Fig. 1. Geographic distribution of *Lacerta caucasica caucasica*, *Lacerta caucasica vedenica* ssp. nov., and *Lacerta daghestanica*. The localities of the samples used in this study are also indicated (see Table 1).

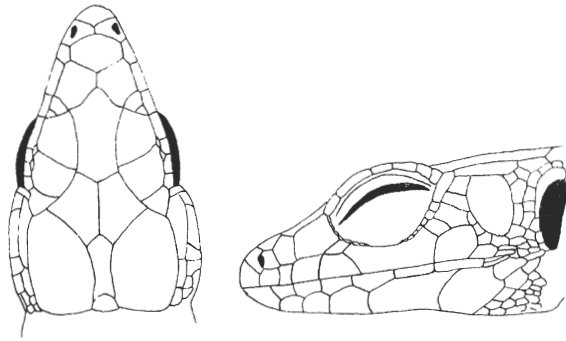


Fig. 2. Dorsal and lateral view of the head of the holotype of *Lacerta caucasica vedenica* ssp. nov.

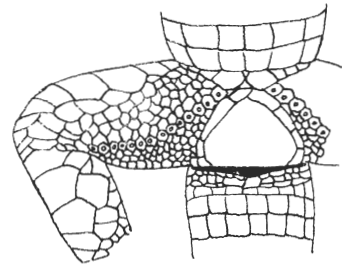


Fig. 3. Scutellation of anal region of the holotype of *Lacerta caucasica vedenica* ssp. nov.

known populations of *L. caucasica* (and from the related species *L. daghestanica* and *L. alpina*) in having by vast majority of individuals (85.7%) 0–3 granules between the supraoculars and superciliaries. To the contrary, more than 99% individuals from the main range of *L. caucasica* possess 4–15 granules on one side of the head.

Description of holotype. Head slightly depressed, length of frontonasal noticeably shorter than its width; rostral separated from frontonasal; only two granules between the supraoculars and superciliaries on each side of the head; the first supratemporal large, somewhat truncated; three small posttemporals on each side; masseteric and tympanic are large and separated from one another by 5 small temporal scales on the left side and by 3 scales on the right side of the head; body scales granular and smooth; 44 dorsal scales around midbody; 22–23 marginal scales

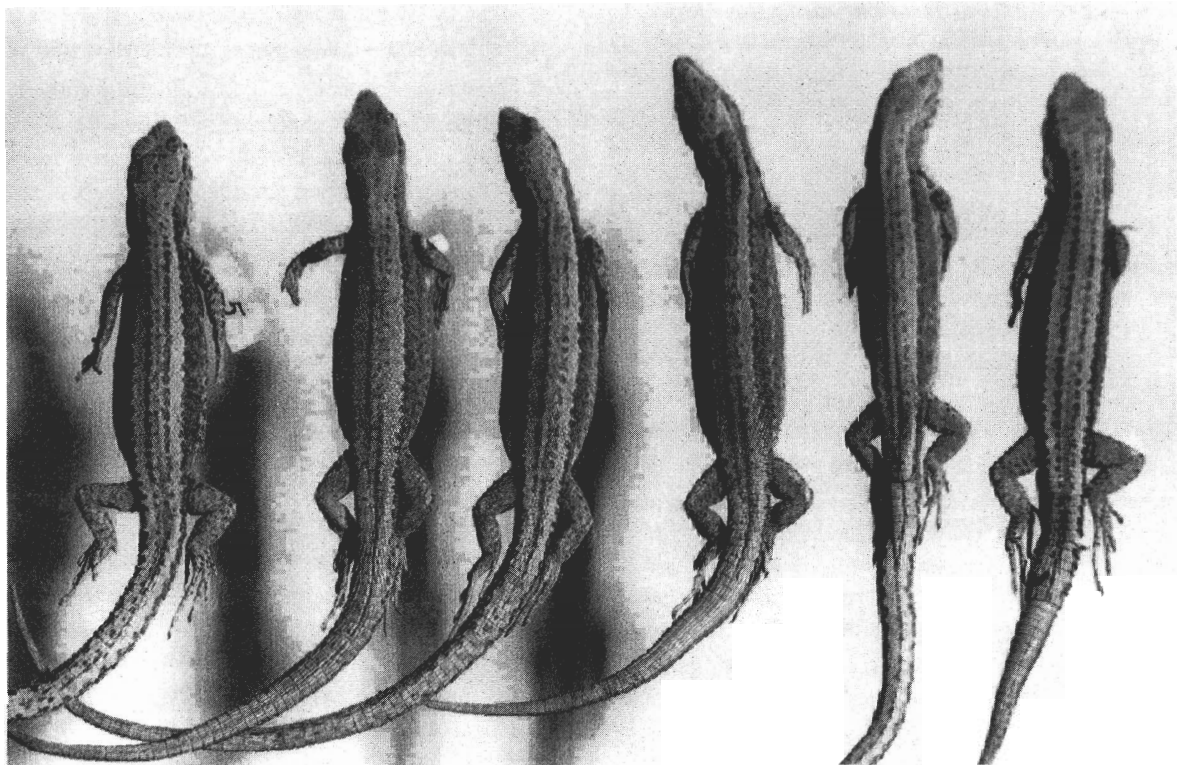


Fig. 4. Dorsal color pattern in several specimens of the type series of *Lacerta caucasica vedenica* ssp. nov. The first specimen from the left is the holotype.

along the ten central ventrals at each side of the body; 19 scales between the chin shields and the collar; 29 granules between the ears across the throat; 26 transverse rows of pectoral and ventral plates; broad anal plate surrounded by one semi-circle of different size preanals; 13(14) femoral pores on the left (right) thick; throat scales smooth and smaller in size than dorsal scales; scales in the anterior third of the tail very slightly keeled. Snout-vent length (SVL) 52 mm, tail length 93 mm. Background dorsal coloration in live animal brownish-gray; the darker middorsal (occipital) band, stretching longitudinally from head to tail base, is bordered laterally by two rows of very dark spots; two dark broad temporal bands with scalloped upper edges stretch from ear opening to tail flanks terminating on the proximate portion of the tail; belly greenish-white with unclear dark spots along the outer longitudinal rows of ventral plates.

Description of paratypes. Variability of the main morphometric and meristic characters within the type series and in some other populations of *Lacerta caucasica* is presented in Table 1.

Etymology. The new species is named after the large settlement Vedenno which is adjacent to the range of the described form.

Comparative remarks. As can be seen from Table 1, along with the type series from near Vedenno, a sample of *L. caucasica* from the vicinity of Khorachoi (~5 km south from the type locality) and one more sample collected further towards the Kharami pass are characterized by a very low number of superciliary granules and superciliary scales and clearly belong to *L. c. vedenica*. Other scalation and morphometric characters provide no consistent distinctions between *L. c. vedenica* and the rest of *L. caucasica*. Compared to the most of the studied samples of *L. c. caucasica*, *L. c. vedenica* has higher mean values

TABLE 1. Variation of Some Scalation and Morphometric Characters (lim, $\bar{X} \pm m, SD$) in Several Populations of *Lacerta caucasica vedentica* ssp. nov. and *L. c. caucasica*

Characters	<i>Lacerta caucasica vedentica</i> ssp. nov.							8, Chegem water fall (n = 36)	
	1a*, Vedeno-63, the type series (n = 39)	1b Vedeno-91 (n = 45)	2 Khorachoi (n = 44)	3 Kharami pass (n = 5)	4 Khvarshi (n = 35)	5 Armkhi river (n = 30)	6 Mleti (n = 37)		7 Rokskii pass (n = 31)
Prenatal scales	7-12 9.18 ± 0.17 1.073	8-11 9.11 ± 0.13 0.859	7-11 9.48 ± 0.15 1.000	8-10 9.60 ± 0.40 0.894	6-10 8.09 ± 0.13 0.742	6-10 7.90 ± 0.17 0.923	6-12 8.51 ± 0.19 1.170	7-13 9.32 ± 0.25 1.376	6-9 8.03 ± 0.12 0.736
Femoral pores, P.f.m.	11-16 13.59 ± 0.16 1.025	12.5-16 13.80 ± 0.12 0.801	11-15 13.42 ± 0.14 0.952	13-13.5 13.40 ± 0.10 0.224	11-14 12.49 ± 0.15 0.887	12.5-17.5 14.73 ± 0.25 1.344	13-18.5 15.42 ± 0.20 1.239	13-18 15.05 ± 0.20 1.113	13.5-17 14.89 ± 0.13 0.757
Ventrals, ♂♂	24-29 26.18 ± 0.40 1.328	25-28 26.12 ± 0.18 0.881	24-28 25.86 ± 0.20 0.941	26-28 27.00 ± 0.58 1.000	24-28 26.33 ± 0.32 1.234	24-29 25.93 ± 0.34 1.335	23-28 25.54 ± 0.24 1.208	25-27 25.81 ± 0.19 0.750	24-29 26.31 ± 0.43 1.548
Ventrals, ♀♀	26-30 28.21 ± 0.19 0.995	27-29 28.05 ± 0.15 0.686	26-30 28.27 ± 0.22 1.032	28-29 28.50 ± 0.50 0.707	28-31 28.90 ± 0.24 1.071	27-30 28.20 ± 0.26 1.014	26-29 27.27 ± 0.30 1.163	25-29 28.27 ± 0.30 1.163	26-30 28.13 ± 0.24 1.140
Dorsal scales around midbody, Sq	37-49 42.00 ± 0.37 2.306	39-45 41.27 ± 0.19 1.268	38-45 41.75 ± 0.32 2.103	40-45 41.60 ± 0.93 2.074	37-44 39.83 ± 0.32 1.902	36-48 41.97 ± 0.50 2.760	38-48 44.14 ± 0.39 2.371	39-50 43.61 ± 0.43 2.390	37-46 42.58 ± 0.35 2.089
Superciliary granules	0-4.5 1.69 ± 0.21 1.331	0-4.5 1.30 ± 0.20 1.312	0-5.5 1.59 ± 0.21 1.386	0.5-3.5 2.10 ± 0.53 1.194	2.5-12 7.61 ± 0.39 2.323	4-12 7.84 ± 0.39 2.126	2-13 9.28 ± 0.42 2.535	5-11 8.19 ± 0.28 1.558	5.5-13.5 10.22 ± 0.30 1.810
Superciliary scales	4-6 5.05 ± 0.10 0.594	3-6 4.80 ± 0.09 0.597	3.5-6.5 4.88 ± 0.09 0.611	4.5-5.5 5.00 ± 0.22 0.500	3.5-7.5 5.83 ± 0.14 0.804	5-7.5 6.00 ± 0.10 0.572	4-7.5 5.92 ± 0.12 0.712	4.5-7 5.50 ± 0.14 0.764	4.5-6.5 5.67 ± 0.08 0.478
Hindleg length (% of SVL), ♂♂	46.3-50.0 48.86 ± 0.31 1.022	45.6-51.7 49.22 ± 0.53 1.981	47.2-53.2 49.10 ± 0.49 1.780	-	44.3-52.0 48.28 ± 0.89 2.525	47.3-50.9 49.54 ± 0.51 1.254	46.7-56.7 53.58 ± 0.49 2.414	47.3-55.7 51.60 ± 0.52 2.012	46.9-52.1 50.71 ± 0.47 1.638
Hindleg length (% of SVL), ♀♀	40.8-46.9 44.22 ± 0.33 1.706	38.1-49.0 43.96 ± 0.81 3.434	38.9-48.0 42.66 ± 0.76 2.931	-	38.7-46.6 43.05 ± 0.50 1.996	39.2-43.4 41.82 ± 0.52 1.485	44.0-51.4 48.38 ± 0.77 2.570	42.6-50.0 45.12 ± 0.57 2.208	41.8-49.0 45.41 ± 0.53 2.435
Pileus length (% of SVL), ♂♂	21.5-22.9 22.24 ± 0.14 0.454	21.4-23.0 22.10 ± 0.13 0.475	21.3-22.6 21.82 ± 0.11 0.382	-	21.3-22.4 21.99 ± 0.16 0.439	21.9-23.2 22.30 ± 0.21 0.524	21.3-24.2 23.22 ± 0.14 0.704	22.0-24.4 23.15 ± 0.14 0.577	21.9-23.8 22.92 ± 0.16 0.564
Pileus length (% of SVL), ♀♀	18.8 ± 21.6 19.92 ± 0.12 0.631	18.0-20.6 19.64 ± 0.19 0.787	18.3-20.6 19.27 ± 0.17 0.668	-	18.4-21.4 19.55 ± 0.19 0.772	18.7-20.7 19.81 ± 0.19 0.564	20.2-23.2 21.29 ± 0.26 0.870	19.2-21.6 20.61 ± 0.16 0.613	19.1-22.3 20.72 ± 0.17 0.796

* Locality numbers correspond to those in Fig. 1.

of the number of preanal scales and lower values of the relative pileus length and hindleg length (Table 1).

The available material on rock lizards from the areas adjacent to the northern slope of the Andiiskii Ridge is scarce, and the nearest studied populations of *L. caucasica* inhabit the northern slope of the Bogoskii Ridge in W Daghestan (Roitberg, 1994, 1999a) and the upper stream of the Armkhi River in W Ingushetia. These two populations clearly belong to the nominate *L. caucasica*. All specimens of the *L. caucasica* complex, known thus far from a nearer surrounding of the range of *L. c. vedenica* [Shatoi (former Sovetskoye) in Southern Chechenia; Botlikh, Agvali in W Daghestan and some others], belong to *L. daghestanica*. Apparently, the range of *L. c. vedenica* lies on the northern border of the main range of *L. daghestanica*. A small population of the latter form was also found in Khorachoi, in sympatry with *L. c. vedenica*; the two taxa exhibiting there a very clear phenetic separation (Roytberg and Lotiev, 1992; Roitberg, 1994, 1999a). It was hypothesized that the original differentiation of *L. caucasica* and *L. daghestanica* took place near the main watershed Ridge of the Great Caucasus with subsequent expansion of *L. caucasica* along its main spurs (Roitberg, 1999a). In this case *L. c. vedenica* can be treated as a quite advanced population based on its geographic position (a large distance from the Main Ridge) and morphology (the low number of superciliary granules is apparently apomorphic feature in *Lacerta*). Among the taxa of the *Lacerta saxicola* group (Darevsky, 1967; Arnold, 1989) the low number of superciliary granules is proper to the nominotypic form of *Lacerta praticola*. Interestingly, just this species exhibits a pronounced phenetic similarity (Roitberg, 1999b) and genetic relatedness (Murphy et al., 1996; Grechko et al., 1998; but see Fu et al., 1997) to *L. caucasica*.

Geographic distribution and ecological peculiarities. The subspecies described occupies the northern slopes and foothills of the Andiiskii ridge, being restricted to the Chechen Republic and, probably, the adjacent territories of Daghestan. *L. c. vedenica* occurs in rock outcrops at the forest edge and in grass vegetation among small stones (Roitberg, 1994, 1999a). This lizard can be found quite far from true rocky habitats, resembling in this respect *L. praticola*.

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