

correlated with the elevation of their habitat, i.e. the pattern noticed here is the same as in several other forms of rock lizards.

Comparative notes. As pointed out previously (Darevsky, 1957), this subspecies forms some well-developed ecotypes in Armenia. Further investigations have demonstrated that the specimens formerly identified as L.s. defilippii from the western and northwestern parts of the range form a distinctly independent subspecies L.s. nairensis, a description of which has already been given¹. Apart from distinct differences in scalation and body coloration, the new subspecies differs from the its closest relative (L.s. raddei) in several behavioral characteristics especially in the unique copulatory behavior males holding females behind the thighs

Specimens examined. Armenia: ZIL 14398 (10), Antarat, Ashtarak region; 14427 (3), Kamal kir near Erevan; 14611 (1), Karabulag Aparan region; 14549 (8), around Erevan 17434 (33), Lchashen, Seven region; 17779 (7), Fantan, western slope of Gegam range; 17794 (18), Antarat, Ashtarak region; ZMMSU 2784 (10), around Arzakend; ZIA (6), Razdan; (5) Maralik; (10) around Lenakan; (15) around Martuna; (5) around Kamo. Georgia: ZIL 17428 (6), Khertvisi in the gorge of Kura. Turkey (northeastern); ZIL 10815 (4), Zanzak, Erzerum vilayet; 17485 (1), around Kars.

Lacerta saxicola parvula Lantz and Cyren 1936
(Table II, D; Fig. 28; photo 19)

L. saxicola f. typica, Méhely (part.), 1909:497; Nesterov, 1912:80 -- saxicola saxicola, Nikolskii (part.), 1913:69 -- saxicola var. parvula, Lantz and Cyren, 1913:163, Fig. 2 and 3 -- saxicola parvula Nikolskii, 1915:379; Lantz and Cyren, 1936:165; Bodenheimer, 1944:25; Terentiev and Chemov, 1949:188.

Holotype. Not designated. Described by Lantz and Cyren (1936) from a large series of specimens from northeastern Turkey (Artvin, Borchka, and Ardanuch).

Description. The width of the frontonasal is greater than or equal to its length. The rostral is set off from the frontonasal or just touches it with a short suture. The suture between the frontonasal and postnasal is equal to or slightly longer than that between the anterior and posterior nasal. The sutures between the prefrontal and frontal are usually straight. The supraciliaries are set off from the supraoculars by a full or, very

¹From the Armenian word "Nairi", the old name of Armenia.

Table 10

Geographic variation of *Lacerta saxicola nairensis*

Character	Khervili (base of upper course of Kura, northern Georgia) N = 6 (♂, 1 ♀)		Byzakan (southern slope of Aragats mountain, Armenia), N = 20 (10 ♂, 10 ♀)		Famian (western) side of Gagik range, Armenia), N = 9 (8 ♂, 1 ♀)		Lchashen (western shore of lake Sevan, Armenia), N = 30 (15 ♂, 15 ♀)		Subspecies as a whole N = 65 (34 ♂, 31 ♀)	
	Range of variation	M ± m	Range of variation	M ± m	Range of variation	M ± m	Range of variation	M ± m	Range of variation	M ± m
1 ♂♂	55	55.00 ± 0.00	59-68	63.40 ± 0.73	60-73	67.00 ± 1.53	59-71	64.53 ± 0.87	55-73	64.50 ± 0.61
1 ♀♀	48-57	53.33 ± 2.72	57-66	63.00 ± 0.84	68	68.00 ± 0.00	60-69	64.60 ± 0.75	48-69	62.38 ± 0.62
2 ♂♂	115	115.00 ± 0.00	118-126	121.33 ± 2.29	89-125	112.83 ± 5.3	107-123	113.86 ± 2.40	89-126	115.84 ± 0.86
2 ♀♀	83	93.00 ± 0.00	102-128	112.29 ± 3.90	—	—	95-129	108.17 ± 5.20	83-129	107.02 ± 1.96
3 ♂♂	0.48	0.48 ± 0.00	0.49-0.54	0.51 ± 0.01	0.54-0.67	0.59 ± 0.02	0.53-0.62	0.57 ± 0.01	0.48-0.67	0.55 ± 0.0008
3 ♀♀	0.61	0.61 ± 0.00	0.50-0.63	0.57 ± 0.02	—	—	0.52-0.69	0.59 ± 0.02	0.50-0.69	0.59 ± 0.0009
4	50-56	51.50 ± 0.92	52-59	56.10 ± 0.35	52-56	53.89 ± 0.45	50-60	55.47 ± 0.48	50-60	55.08 ± 0.31
5	25-26	25.33 ± 0.21	24-28	26.45 ± 0.25	23-26	24.56 ± 0.29	23-31	27.03 ± 0.35	23-31	26.35 ± 0.21
6	16-19	17.25 ± 0.49	16-19	17.78 ± 0.19	16-20	18.28 ± 0.33	15-21	17.83 ± 0.21	15-21	17.82 ± 0.13
7	8-12	10.00 ± 0.46	8-12	10.30 ± 0.20	9-12	10.61 ± 0.32	7-11	9.08 ± 0.22	7-12	9.75 ± 0.13
7a	0	—	0	—	0	—	0	—	—	—
9 ♂♂	26	26.00 ± 0.00	24-26	24.90 ± 0.18	23-26	24.62 ± 0.37	24-26	24.93 ± 0.21	23-26	24.88 ± 0.13
9 ♀♀	26-27	26.40 ± 0.25	27-29	27.90 ± 0.28	27	27.00 ± 0.00	26-29	27.53 ± 0.28	26-29	27.46 ± 0.18
10	2-3	2.16 ± 0.16	2-2	2.00 ± 0.00	2-2	2.00 ± 0.00	2-2	2.00 ± 0.00	2-3	2.01 ± 0.016
11	2-3	2.83 ± 0.15	2-4	2.92 ± 0.15	2-4	2.89 ± 0.15	2-5	2.89 ± 0.11	2-5	2.88 ± 0.063
12	2-3	2.75 ± 0.18	2-5	3.18 ± 0.15	2-4	3.39 ± 0.20	2-4	3.01 ± 0.11	2-5	3.09 ± 0.08
13 ♂♂	3-3	3.00 ± 0.00	2-3	2.90 ± 0.10	2-3	2.94 ± 0.08	2-3	2.63 ± 0.13	2-3	2.79 ± 0.72
13 ♀♀	3-3	3.00 ± 0.00	2-3	2.70 ± 0.15	3-3	3.00 ± 0.00	2-3	2.56 ± 0.13	2-3	2.69 ± 0.08
14	18-20	18.50 ± 0.34	18-19	18.60 ± 0.19	19-22	20.67 ± 0.33	17-20	18.47 ± 0.17	17-22	18.82 ± 0.21
15	6-7	6.33 ± 0.21	6-7	6.75 ± 0.10	6-8	6.78 ± 0.22	5-7	6.13 ± 0.09	5-8	6.43 ± 0.07

rarely, incomplete row of 14 - 27 granules. The upper postorbital generally does not reach the parietal. The first supratemporal is short, broad in front, and posteriorly the posttemporals are poorly developed. Anterior to the temporal at its border with the parietal, there are 2 - 7 tiny subequal scales. The supralabials number 4 - 5 (specimens with 5 supralabials and/or tiny scales wedged between adjacent supralabials occur frequently in populations from northeastern Turkey). The midtemporal varies considerably in dimensions and is not developed at all in some cases; it is separated from the supratemporal by 1 - 3 and from the medium-sized tympanic by 1 - 5 transverse rows of tiny scales. Along the mid line of the throat, there are 22 - 23 scales. The body scales are smooth, prominent, not laterally enlarged; there are 50-70 scale rows around midbody. The outer row of ventral scales in males and females touch 3, rarely 2, subequal dorsal scales. The pectoral and ventral scales lie in 20 - 26 transverse rows in males and 23-28 in females. The anal is large; anterior of it, one or two symmetrically placed enlarged preanals are present; only in very rare cases is the arrangement of preanals different. The femoral pores number 24 - 27. On the underside of the thigh, between the femoral pores and the outer row of enlarged scales, there are 4 - 6 transverse rows of tiny scales. The dorsal scales of the crus have weakly or moderately developed transverse keels and do not greatly exceed the size of the dorsals. Around the middle of the crus 15 - 20 tiny scale rows are present. The scales on the anterior third of the tail have dorsally moderately developed and along the sides strongly developed longitudinal keels; the posterior edge of the scales is truncate or forms an obtuse angle. The snout-vent length is 47 - 57 mm in males and 46 - 56 mm in females; its ratio to the length of the unregenerated tail is 0.40 - 0.57 and 0.42 - 0.65, respectively, in males and females.

The coloration and pattern vary greatly. The chief background colors of the dorsum of the male are bright-brown, brownish-gray, gray, olive-gray; olive-green, dirty green, or ivy green, often darker along the spine. The females are brownish-fawn blotches concentrated along the gray, being significantly darker along the middle of the back and on the sides. The pattern is quite varied. The central occipital stripe is formed of fairly large black or brownish-tawn blotches concentrated along the back and quite often barely separated into two nearly parallel rows. The broad temporal stripes begin immediately posterior of the head and usually consist of three contiguous rows of dark ocelli with or without distinct, bright centers. The characteristic bluish centers are usually not developed in the pectoral zone of males or females. A row of whitish spots often merged into continuous bright ciliary lines usually lies along the upper uneven edge of the temporal stripe. These spots are generally more distinct on the neck and anterior third of the body where the occipital and

temporal stripes are close to each other. The ventral edge of the temporal stripe is often bordered by a longitudinal row of comparatively large, whitish, black-rimmed blotches sometimes coalesced into a continuous supramaxillary stripe. Some specimens have a body pattern barely developed in some areas. During the breeding season the venter of males and females including usually the chest and underside of head, is a rusty brick-red, brownish-red or white; this coloration extends somewhat onto the underside of the thigh, ankle, and tails, and also onto the body wall bordering the abdomen and onto the temporal region of the head. An admixture of rusty-red tones occasionally occurs in the color of temporal stripes. In males, one of the external ventral scales bears a bright turquoise spot; round spots of the same color are also usually present along the sides of the body.

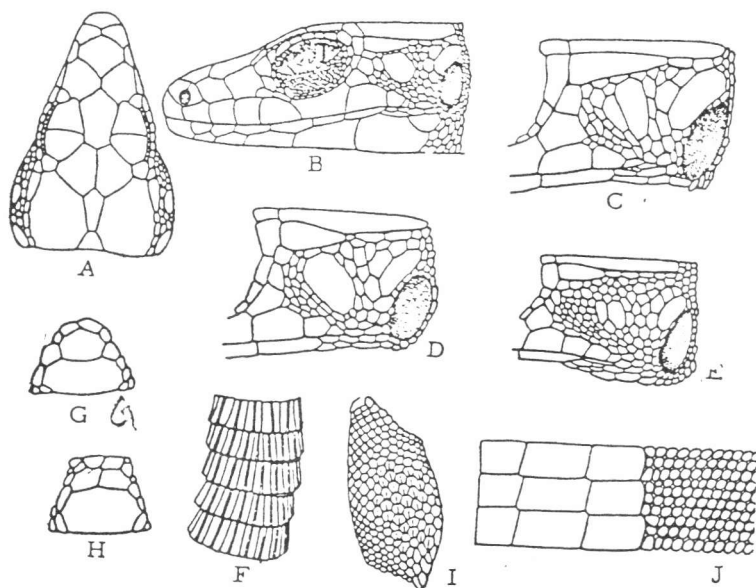


Fig. 28. Major scalation of *L. s. parvula*.

A - Head, dorsal view; B - head, lateral view; C, D, E - temporal region; F - dorsum of the anterior third of tail; G, H - anal region; I - scales on the upperside of ankle; J - contact zone between dorsal and ventral scales of male (E - around Artvin; rest - Adzharia).

Geographic distribution. The distribution encompasses the slopes of the Meskhet range and its spurs in Adzharia and the neighboring regions of Georgia from the Black Sea coast on the west to the gorge of the Kura River in the east, and also the valley of the lower course of the Chorokh River and its tributaries in north-eastern Turkey. The northern edge of the range extends along the southwestern and northern foothills of

Meskhet range where it has not been conclusively established (in the west, it is known in the valley of the Natanebi River). In southern Adzharia, it is widely distributed in the valley of the Adzharia-Tskhali River and its tributaries, originating from Meskhet, Shavshet, and northwestern limits of the Arsyian ranges. Farther to the east, it occurs in the valleys of innumerable left tributaries of the Kura on the southern slope of the Meshkat range to village Akhaldaba in the Borzhomi gorge in the east. Stray finds are also known from the right shore of Kura, particularly in the neighborhood of village Atskura. In northeastern Turkey, the distribution of this subspecies covers the valley of the Chorokh River and its right tributaries up to the neighborhood of Baiburt in the southwest. Still further to the south, it occurs around the village Zenzak in the basin of Araks, where, according to Nesterov (1911a) who found it here, it probably penetrated from the Chorokh basin through the low dividing ridges. L. s. parvula perhaps ascends the valley of Araks and its tributaries, at least, to Erzerum from which there are unconfirmed data from the same investigator who found Lacerta saxicola (f. typica) at several places here. Since both L. s. parvula and L. s. nairiensis figure in the Turkish collections of Nesterov from Araks valley under this name, it is difficult to establish which subspecies was observed by him around Erzerum (fig. 29, 1).

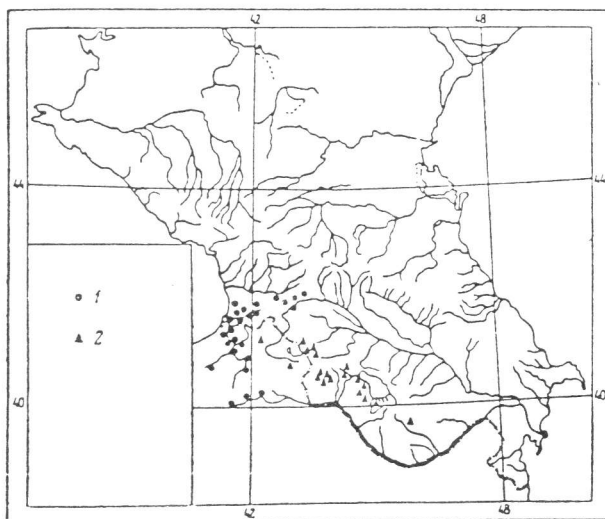


Fig. 29. Distribution in the Caucasus and northeastern Turkey.

1 - L. s. parvula; 2 - L. s. valentini.

In Adzharia and the valley of the lower course of the Chorokh River, the distribution of L. s. parvula is almost entirely sympatric with the

distribution of L.r. rudis and of L. rudis obscura on the Kura slopes of the Meshket range. At several places, for example around Abastumani and the gorge of Banis-Khevi close to Borzhomi, it occurs with L. mixta. In the upper reaches of Araks (around the village Zanzak) it occurs with L.s. nairensis.

Geographical variation. Samples were examined from several populations. These originated from northeastern Turkey (Chorokh valley), Adzharia (mainly the valley of Adzharis-Tskali River and the southern slopes of the Meshket range around Abastumani (Table 11). The maximum distance between the extreme samples was 110 km. In Fig. 30, attention is first drawn to the significant variations of the main features of pholidosis between the lizards from northeastern Turkey, on the one hand, and Adzharia and around Abastumani, on the other. Several characters reveal a fairly distinct variational cline increasing from the south to the northeast. The increased number of supralabial scales (character 8) present in the Turkish specimens is a very characteristic feature. The number of these scales is usually constant and varies little in the other forms of rock lizards.

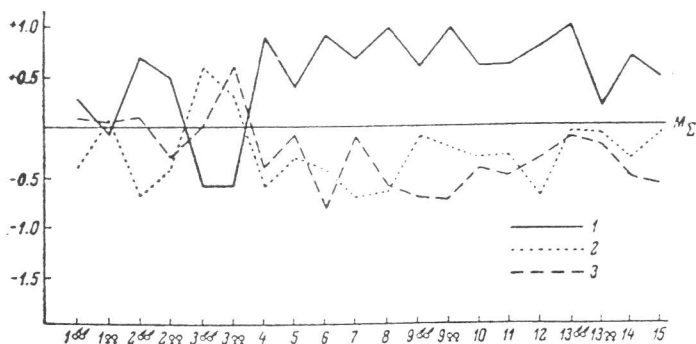


Fig. 30. Summary graph of the variation of L. s. parvula.

1 - Northeastern Turkey; 2 - Adzharia; 3 - Abastumani.

As indicated above, the distribution of this subspecies in Adzharia and Georgia is everywhere sympatric with L. rudis. Both of these forms are seldom encountered individually. The consequence of such a coexistence is the deflection of some character of L. s. parvula towards L. rudis, primarily in the increase of scale size on the upper side of the ankle and some thickening of scales in the temporal zone (fig. 28 E). The causes of this phenomenon are examined in detail later. In exactly the same manner, specimens from the upper courses of the Chorokh (Bajburt) occurring with L. s. lantziyreni differ noticeably in several features from the Adzharia lizards.

Table 11

Geographical variation of *Lacerta saxicola parvula*

Characters	Northeastern Turkey N = 35 (19 ♂♂, 16 ♀♀)		Azharia, N = 25 (11 ♂♂, 14 ♀♀)		Abantman, N = 30 (22 ♂♂, 8 ♀♀)		Subspecies as a whole, N = 90 (52 ♂♂, 38 ♀♀)	
	Range of variation	M ± m	Range of variation	M ± m	Range of variation	M ± m	Range of variation	M ± m
1 ♂♂	49-57	52.79 ± 0.58	48-55	52.36 ± 0.68	47-56	50.82 ± 0.53	47-57	51.86 ± 0.36
1 ♀♀	48-54	50.63 ± 0.50	46-56	51.07 ± 0.91	49-56	51.00 ± 0.78	46-56	50.87 ± 0.43
2 ♂♂	98-131	118.36 ± 3.04	101-120	111.0 ± 2.79	83-111	101.00 ± 1.50	83-131	109.40 ± 1.56
2 ♀♀	94-120	107.3 ± 2.97	71-105	96.43 ± 4.69	85-116	95.88 ± 3.38	71-120	100.89 ± 1.93
3 ♂♂	0.40-0.54	0.44 ± 0.006	0.44-0.55	0.47 ± 0.01	0.47-0.57	0.50 ± 0.005	0.40-0.57	0.47 ± 0.005
3 ♀♀	0.42-0.54	0.47 ± 0.013	0.47-0.65	0.54 ± 0.02	0.48-0.58	0.53 ± 0.01	0.42-0.65	0.51 ± 0.009
4	56-70	63.18 ± 0.59	52-61	56.68 ± 0.45	50-64	55.8 ± 0.62	50-70	58.94 ± 0.47
5	24-33	28.63 ± 0.40	23-31	27.08 ± 0.49	22-31	26.57 ± 0.42	22-33	27.54 ± 0.26
6	17-27	22.07 ± 0.36	14-20	16.96 ± 0.26	15-21	18.13 ± 0.25	14-27	19.34 ± 0.29
7	8-24	14.77 ± 0.55	10-16	12.22 ± 0.25	6-13	10.52 ± 0.29	6-24	12.64 ± 0.31
7a	11	—	0	—	10	—	—	—
8	4-6	4.84 ± 0.08	4-5	4.02 ± 0.02	4-5	4.01 ± 0.023	4-6	4.34 ± 0.05
9 ♂♂	21-26	24.47 ± 0.28	20-25	22.64 ± 0.50	24-25	23.45 ± 0.19	20-26	23.65 ± 0.19
9 ♀♀	25-28	26.56 ± 0.18	23-27	24.71 ± 0.29	24-27	25.25 ± 0.31	23-28	25.60 ± 0.20
10	1-2	1.91 ± 0.04	1-2	1.32 ± 0.09	1-3	1.36 ± 0.10	1-3	1.65 ± 0.056
11	2-4	3.19 ± 0.13	1-4	2.14 ± 0.13	1-5	2.31 ± 0.12	1-5	26.05 ± 0.092
11a	0	—	0	—	0	—	—	—
12	2-7	5.20 ± 0.18	2-5	3.60 ± 0.18	2-6	3.01 ± 0.16	2-7	4.02 ± 0.14
13 ♂♂	3-3	3.00 ± 0.00	2-3	2.91 ± 0.02	2-3	2.86 ± 0.07	2-3	2.92 ± 0.01
13 ♀♀	2-4	2.75 ± 0.13	2-3	2.57 ± 0.12	2-3	2.62 ± 0.03	2-4	2.66 ± 0.071
14	14-20	16.54 ± 0.22	13-17	15.04 ± 0.24	12-18	15.27 ± 0.29	12-20	15.70 ± 0.12
15	4-6	5.23 ± 0.09	4-5	4.56 ± 0.10	4-6	4.87 ± 0.10	4-6	4.92 ± 0.05

Comparative notes. Lantz and Cyren (1913) first demonstrated that the rock lizards of Adzharia and the adjacent regions of Turkey, which were regarded by several investigators as type subspecies of L. saxicola, did, in fact, form a well-developed and independent subspecies, L.s. parvula. We have established that the numerous specimens of Lacerta saxicola saxicola and also some specimens of Lacerta saxicola gracilis mentioned by Nesterov (1911a, 1912) from several regions of northeastern Turkey belong to this same subspecies.

Specimens examined. Adzharia: ZIL 17045 (3), Zelenyi cape near Batumi; 17524 (4), Keda, road to Oktomberi; 17525 (3), Keda, road to Merisi; 17526, Chvana, Khuloi region; 17527 (8), valley of the Chakvis-Tskali River Kobulet region; 17528 (3), Khinchaluri, Khuloi region; 17529 (16), Chvana, Khuloi region, 17530 (5), Baratauli, Khuloi region; 17532 (1), Shuakhevi Khuloi region; 17535 (1), Oktomberi Khuloi region. Georgia: ZIL 16001 (8), gorge of the Kurtskhan River close to Abastumani; 16314 (2), Meriya, Makharadzev region; 17433 (28), 17449 (1), gorge of Banis-Khevi, Borzhomi region; 17533 (2), Atskuri, Akhaltsikh region; 17440 (21), Abastumani, road to Zekari pass; ZIU (7), Akhaldaba, Borzhomi region. Turkey (northeastern): ZIL 9097 (3), Artvin; 9082, Borchka, Artvin vilayet; 9099 (10), around Artvin; 10692 (5), Ipkhrel-Su River Artvinskii Vilayet; 10695 (14), Lomasheny, Artvin vilayet; 10810 (12), Singot post, Artvin vilayet, 10813 (4), Gurzhany, Artvin vilayet 10817 (4), Olty, Erzerum vilayeti; 10821 (1), around Ardagan; 17890 (2), Zanzak Erzerum vilayet; BMUH 1961516 (1), 475 (1), Baiburt, vilayet Gyumyushane.

Lacerta saxicola portschinskii Kessler, 1878
(Table I, C; Fig. 5 A, 31 Photo 17)

L. portschinskii Kessler, 1878:160, Table I.-- muralis var. depressa, Boettger, 1899:281.-- muralis var. portschinskii, Boulenger, 1904:337, Table XXII, Fig.6; 1913:193, Table XXIII, Fig. 1, 1a, 1920:286.-- saxicola var. chalybdea, Mehely, 1909:513.-- saxicola var. portschinskii, Nikolsky, 1913:70.-- saxicola portschinskii, Nikolsky 1915:368; Lantz and Cyren, 1936:165; Terentiev and Chemov, 1949:188.-- saxicola defilippii, Rostombekov (non Camerano), 1930:6.

Holotype. Not designated. Described by Kessler (1878) from specimens from around Tiflisi(Tbilisi).

Description -- The width of the trontonasal scale is equal to or slightly greater than its length. The rostral is separated from the