

A NEW RECORD OF *Iranolacerta brandtii* (DE FILIPPI, 1863) (SAURIA: LACERTIDAE) IN EASTERN ANATOLIA, TURKEY

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The distribution of *Iranolacerta brandtii* previously was limited to the Iran. A new locality is reported here in eastern Turkey. Data based on meristic pholidosis characters, metric measurements and color-pattern features of the specimens from eastern Turkey were given in detail and compared with data given in the previous literature. In addition, the first record of *Iranolacerta brandtii* from outside of Iran is reported here.

Keywords: *Iranolacerta brandtii*; distribution; morphology; Turkey.

INTRODUCTION

According to morphological and molecular data, Lacertinae subfamily includes with 19 genera (Arnold et al., 2007) that is distributed in Europe, northwest Africa and southwest and east Asia. Among them is the new genus *Iranolacerta* Arnold, Arribas et Carranza, 2007 that is a small genus known only in Iran with a limited distribution (Anderson, 1999; Nilson et al., 2003; Arnold et al., 2007; Ahmadzadeh et al., 2008; Rastegar-Pouyani et al., 2008; Ahmadzadeh et al., 2013; Smid et al., 2014). It includes two species [*Iranolacerta brandtii* (De Filippi, 1863) and *Iranolacerta zagrosica* (Rastegar-Pouyani et Nilson, 1998)] (Arnold et al., 2007). *Iranolacerta brandtii* was first described in Basmanj, SE Tabriz, E Azerbaijan Province, NW Iran as *Lacerta brandtii* De Filippi, 1863. It includes two subspecies [*Iranolacerta brandtii brandtii* (De Filippi, 1863) — eastern and western Azerbaijan and Ardebil provinces and *I. b. esfahanica* (Nilson, Rastegar-Pouyani, Rastegar-Pouyani et Andrén, 2003) — 9.6 km NW Kuh Rang, in Esfahan province] (Anderson, 1999; Nilson et al., 2003; Rezazadeh et al., 2010; Arnold et al., 2007; Ahmadzadeh et al., 2008; Rajabizadeh et al., 2010; Hosseinian Yousefkhani et al., 2012; Ahmadzadeh et al., 2013). Related to distribution of this species, also doubtful records were given in the Caucasus (southeastern Azerbaijan) (Aleksperov, 1978;

Anderson, 1999; Nilson et al., 2003; Ananjeva et al., 2006; Rezazadeh et al., 2010).

According to the latest revision of Arnold et al. (2007) on Lacertidae family, there are twelve genera of lacertid lizards in Turkey [*Acanthodactylus* Wiegmann, 1834; *Anatololacerta* Arnold, Arribas et Carranza, 2007; *Apathya* Mehely, 1907; *Darevskia* Arribas, 1997; *Eremias* Fitzinger, 1834; *Lacerta* Linnaeus, 1758; *Mesalina* Gray 1838; *Ophisops* Ménétries, 1832; *Parvilacerta* Harris, Arnold et Thomas, 1998; *Phoenicolacerta* Arnold, Arribas et Carranza, 2007; *Podarcis* Wagler, 1830; *Timon* Tschudi, 1836] encompassing approximately 38 species (Baran and Atatür, 1998; Sindaco et al., 2000; Arnold et al., 2007; Baran et al., 2012).

A review of the literature did not reveal any previous reports for the occurrence of genus *Iranolacerta* in Turkey (Baran and Atatür, 1998; Sindaco et al., 2000; Baran et al., 2012). The present paper includes the description of pholidosis characters, morphometric measurements and the color-pattern features of lizard specimens collected from Van in eastern Anatolia neighboring to Turkish and Iranian border (Fig. 1).

MATERIAL AND METHODS

A scientific excursion was conducted in the eastern Anatolia, 6–15 July 2014. The specimens (10 males, 7 females) were collected from Yamanyurt Village, Saray, Van, Turkey at 2263 m a.s.l., on July 15, 2014 by K. Olgun, A. Avcı and E. Bozkurt (38°36'30.8" N

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44°12'24.0" E). The locality where specimens were collected is shown in Fig. 1. The exact locality of the specimens was determined using a GPS. All specimens were anesthetized with ether, fixed with a 96% ethanol injection, and deposited in 96% ethanol. They were deposited in the Zoology Lab. of the Department of Biology at Faculty of Science, Adnan Menderes University. Color and pattern characteristics were recorded while the specimens were still alive, and color slides were taken from alive animals and utilized in the study. Mensural, meristic, and qualitative data were recorded following the system of Nilson et al. (2013), Rezazadeh et al. (2010), Rajabizadeh et al. (2010), and Hosseinian Yousefkhani et al. (2012).

All measurements were determined under a stereo microscope. Metric measurements were recorded using a digital caliper. The following metric measurements were taken: SVL (snout-vent length), tip of snout to anal cleft; TL (tail length), anal cleft to the tip of tail; PW (pileus width), at widest point between parietal plates; PL (pileus length), tip of snout to the posterior margins of parietals; HW (head width), at widest point of head; HL (head length), tip of snout to posterior margin of ear opening; HD (head depth), greatest depth of head; FLLa – FLLb (left – right, forelimb length), outstretched limb from shoulder joint to tip of toe; HLLa – HLLb (left – right, hindlimb length), outstretched limb from hip joint to tip of toe; ELa – ELb (left – right, eye length), DEa – DEb (left – right, maximum diameter of ear opening), DOEa – DOEb (left – right, distance of orbit-ear), AG (axilla-groin), EYEaRa – EYEaRb (left – right, distance between eye and ear) and MDa – MDb (left – right, diameter of masseteric). Furthermore, some morphometric ratios were calculated: TL/SVL, PW/SVL, PL/SVL, HW/SVL, HL/SVL, HD/SVL, FLLa/SVL, FLLb/SVL, HLLa/SVL, HLLb/SVL, ELa/SVL, ELb/SVL, DEa/SVL, DEb/SVL, DOEa/SVL, DOEb/SVL, AG/SVL, EYEaRa/SVL, EYEaRb/SVL, MDa/SVL and MDb/SVL.

Meristic (pholidosis) characteristics are following: supraciliary granules (left – right, SCGa – SCGb), supraciliary plates (left – right, SCPa-SCPb), supraocular plates (left – right, SOa – Sob), supralabial plates (left – right, SRLa – SRLb — number of labials both anterior and posterior to center of eye), sublabial plates (left – right, SLa – SLb), submaxillary plates (left – right, SMa – SMb), postnasal plates (left – right, PNa – PNb), transversal series of gular scales between inframaxillary symphysis and collar (MG), collars (C), temporal scales (left – right, Ta – Tb), ventral plates (transversal and longitudinal, TVP and LVP), femoral pores (left – right, FPa – FPb), subdigital lamellae in the 4th toe (left – right,

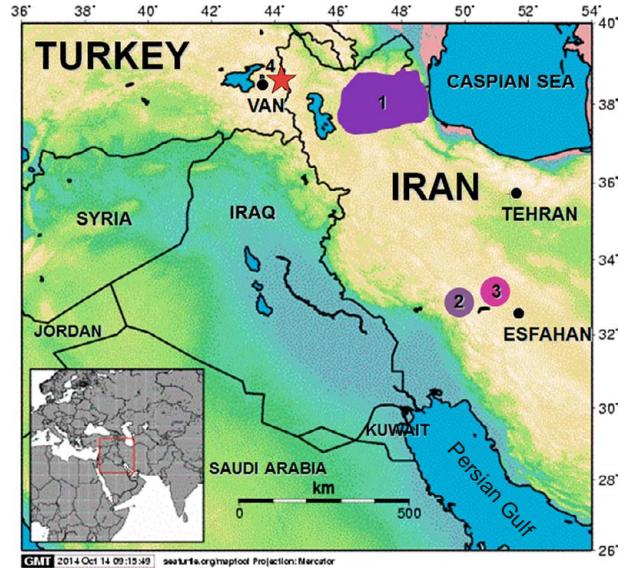


Fig. 1. The distribution of *Iranolacerta brandtii* with new locality record from Turkey: 1, *Iranolacerta brandtii brandtii*; 2, *Iranolacerta brandtii esfahanica*; 3, *Iranolacerta zagrosica*; 4, new locality of *Iranolacerta brandtii brandtii* in Van, Turkey.

SDLa-SDLb), transversal series of dorsal scales at the midtrunk (DS), number of preanal scales (PA) and number of scales between eye and ear (left – right, SBEEa – SBEEb).

In order to compare similarities and differences between sexes, an independent *t*-test was applied to the metric dimensions of the specimens. Morphometric ratios were used to test differences between sexes. Ratios were used due to an uncertainty regarding age groups and because it was unknown whether growth was isometric or not. Data were examined for conformation to assumption of normality (the Kolmogorov – Smirnov test) and homogeneity (F_{max}). According to the meristic pholidosis characters, the existence of sexual dimorphism between males and females was tested by the Mann – Whitney *U*-test. The significance level for all statistical tests was set at 0.05. Statistical analyses were carried out using the program SPSS 16.0 statistical packages.

RESULTS

In only one specimen, the rostral plate in contact with the internasal on left side, rostral separated from frontonasal. The row of supraciliary granules was complete in 12 (70.6%) specimens while as incomplete in the rest. Postnasal plate was single on left side in only one specimen while the others were having two postnasals on each side. Nostril was usually separated from first upper labial

(88.2%) and was bordered by internasal, two postnasals and first supralabial. In none of the specimens was the supranasal plate in contact with the anterior loreal plate above nostril. Two loreals were present. A medium sized and visible masseteric plate was in the temporal area in all specimens. SRL were usually 5 – 5 (64.7%), rarely 5 – 6 (17.6%), 7 – 7 (11.8%) and 6 – 5 (5.9%). SO were usually 4 – 4 (76.5%) and rarely 5 – 4 (17.6%) and 4 – 5 (5.9%), first and fourth SO were small and of equal size, second and third ones was large. SCP were usually 6 – 6 (35.3%) or 7 – 6 (29.4%) and rarely 6 – 7 (17.6%), 7 – 7 (5.9%), 7 – 8 (5.9%) and 8 – 7 (5.9%). SL were usually 5 – 5 (64.7%), rarely 7 – 7 (11.8%), 5 – 6 (11.8%) and 6 – 5 (5.9%). Lower eyelid including several scales forms a compact cover. First supratemporal was the largest and the longest in all specimens. Temporal region was covered by small smooth scales of the same size as dorsals. SM were 7 – 6 (5.9%) in only one specimens, except this specimens first three of them were in contact

while the last two pairs were completely separated. Collars were smooth-edged in all specimens. Dorsal scales were smooth, round and widest at the mid part of dorsum. The rows of dorsal scales were corresponds to each ventral plate. Rectangular shaped ventral plates were always 8 longitudinal rows with little overlap. Approximately half of the ventral plates were bordered laterally by a larger scale, giving an impression of ten longitudinal rows. Subdigital lamellae in the 4th toe were smooth. Anal surrounding by semicircular row of scales was single in all specimens and anal opening was surrounded by very small scales. Whorls of caudal scales were equal in length. Descriptive statistics of meristic pholidolial characteristics of our specimens are given in Table 1.

According to the Mann – Whitney *U*-test, there was a difference in TVP ($Z = -3.604$, $p = 0.000$) and FPa ($Z = -2.272$, $p = 0.027$) characters between males and females.

TABLE 1. Descriptive Statistics of Meristic Pholidolial Characters of *Iranolacerta brandtii* specimens

Char- acters	♂♂ + ♀♀						♂♂						♀♀					
	<i>N</i>	mean	min	max	S.D.	S.E.	<i>N</i>	mean	min	max	S.D.	S.E.	<i>N</i>	mean	min	max	S.D.	S.E.
SCGa	17	8.00	6	10	1.32	0.32	9	8.33	7	10	1.22	0.41	8	7.63	6	10	0.50	1.41
SCGb	17	7.53	5	10	1.66	0.40	9	7.89	5	10	1.90	0.63	8	7.13	5	9	0.48	1.36
SOa	17	4.18	4	5	0.39	0.10	9	4.33	4	5	0.50	0.17	8	4.00	4	4	0.00	0.00
Sob	17	4.06	4	5	0.24	0.06	9	4.11	4	5	0.33	0.11	8	4.00	4	4	0.00	0.00
SCPa	17	6.53	6	8	0.62	0.15	9	6.78	6	8	0.67	0.22	8	6.25	6	7	0.16	0.46
SCPb	17	6.41	6	8	0.62	0.15	9	6.56	6	8	0.73	0.24	8	6.25	6	7	0.16	0.46
PNa	17	1.94	1	2	0.24	0.06	9	1.89	1	2	0.33	0.11	8	2.00	2	2	0.00	0.00
PNb	17	2.06	2	3	0.24	0.06	9	2.00	2	2	0.00	0.00	8	2.13	2	3	0.13	0.35
SRLa	17	5.29	5	7	0.69	0.17	9	5.44	5	7	0.88	0.29	8	5.13	5	6	0.13	0.35
SRLb	17	5.41	5	7	0.71	0.17	9	5.67	5	7	0.87	0.29	8	5.13	5	6	0.13	0.35
Sla	17	7.76	7	9	0.66	0.16	9	7.67	7	9	0.71	0.24	8	7.88	7	9	0.23	0.64
SLb	17	7.59	6	9	0.80	0.19	9	7.56	6	9	0.88	0.29	8	7.63	7	9	0.26	0.74
SMa	17	5.12	5	7	0.49	0.12	9	5.22	5	7	0.67	0.22	8	5.00	5	5	0.00	0.00
SMb	17	5.06	5	6	0.24	0.06	9	5.11	5	6	0.33	0.11	8	5.00	5	5	0.00	0.00
Ta	17	62.41	48	76	6.68	1.62	9	61.00	48	76	7.53	2.51	8	64.00	56	72	1.99	5.63
Tb	17	62.41	44	72	7.55	1.83	9	60.56	44	72	7.99	2.66	8	64.50	55	72	2.45	6.93
SBEEa	17	8.47	7	9	0.62	0.15	9	8.56	7	9	0.73	0.24	8	8.38	8	9	0.18	0.52
SBEEb	17	8.35	7	10	0.70	0.17	9	8.22	7	9	0.67	0.22	8	8.50	8	10	0.27	0.76
C	17	10.71	9	12	0.92	0.22	9	10.56	9	12	1.01	0.34	8	10.88	10	12	0.30	0.83
MG	17	26.41	25	28	1.18	0.29	9	26.22	25	28	1.09	0.36	8	26.63	25	28	0.46	1.30
TVP	17	29.53	27	33	1.84	0.45	9	28.00	27	29	0.50	0.17	8	31.25	30	33	0.37	1.04
LVP	17	8.00	8	8	0.00	0.00	9	8.00	8	8	0.00	0.00	8	8.00	8	8	0.00	0.00
DS	17	53.35	50	56	1.66	0.40	9	53.89	52	55	1.05	0.35	8	52.75	50	56	0.73	2.05
PA	17	6.94	6	8	0.66	0.16	9	7.00	6	8	0.71	0.24	8	6.88	6	8	0.23	0.64
FPa	17	17.88	16	20	1.36	0.33	9	18.56	16	20	1.33	0.44	8	17.13	16	18	0.35	0.99
FPb	17	17.47	17	19	0.62	0.15	9	17.56	17	19	0.73	0.24	8	17.38	17	18	0.18	0.52
SDLa	16	27.50	24	30	1.41	0.35	9	27.75	26	30	1.28	0.45	7	27.25	24	29	0.56	1.58
SDLB	16	27.31	24	30	1.58	0.39	9	27.67	24	30	1.58	0.53	7	26.86	24	29	0.59	1.57

For abbreviations, see *Material and Methods*; *N*, number of specimens; S.D., standard deviation; S.E., standard error of the mean.

SVL ranged between 51.33 – 67.02 with a mean of 59.25 mm were found for sexually mature male specimens, while the mean value of this character in females was 60.94 mm (range: 48.57 – 69.96). The head was depressed, its length was much less than twice its width (range: 1.61 – 1.78; mean: 1.70), its width was much less than one and half its depth (mean: 1.25, range: 1.16 – 1.42). Descriptive statistics of metric measurements of the specimens are given in Table 2.

All of the ratios conformed to assumption of normality (the Kolmogorov – Smirnov test) and homogeneity (F_{max}). According to results of independent t -tests, sexual dimorphism were established between females and males in PL/SVL ($t = 5.051, df = 15, p = 0.000$), PW/SVL ($t = 5.567, df = 15, p = 0.000$), HW/SVL ($t = 7.433, df = 15, p = 0.000$), HL/SVL ($t = 5.824, df = 13.015, p = 0.000$), HD/SVL ($t = 4.615, df = 15, p = 0.000$), FLLa/SVL ($t = 4.615, df = 15, p = 0.000$), FLLb/SVL ($t = 3.295, df = 15, p = 0.005$), HLLa/SVL ($t = 2.401, df = 11.720, p = 0.034$), ELa/SVL ($t = 6.012, df = 15, p = 0.000$), ELb/SVL ($t = 5.416, df = 15, p = 0.000$), DEa /SVL ($t = 4.649, df = 15, p = 0.000$), DEb /SVL ($t = 3.643, df = 15, p = 0.002$), DOEa /SVL ($t = 4.649, df = 15, p = 0.000$), DOEb/SVL ($t = 3.643, df = 15, p = 0.002$),



Fig. 2. Dorsolateral view of male specimen of *Iranolacerta brandtii* (photograph by K. Olgun).

AG/SVL ($t = 3.509, df = 15, p = 0.003$), EYEARa/SVL ($t = 3.646, df = 15, p = 0.002$), EYEARb/SVL ($t = 5.404, df = 15, p = 0.000$), MDa/SVL ($t = 6.284, df = 15, p = 0.000$) and MDb/SVL ($t = -4.741, df = 11.277, p = 0.001$).

In living specimens, colors of back vary from pale brown to olive green with unicolor longitudinal zone

TABLE 2. Descriptive statistics of metric measurements characters of *Iranolacerta brandtii* specimens

Char- acters	♂♂ + ♀♀						♂♂						♀♀					
	N	mean	min	max	S.D.	S.E.	N	mean	min	max	S.D.	S.E.	N	mean	min	max	S.D.	S.E.
PL	17	13.70	11.01	16.26	1.47	0.36	9	14.21	12.23	16.26	1.52	0.51	8	13.13	11.01	14.58	0.45	1.27
PW	17	6.86	5.55	8.26	0.77	0.19	9	7.17	6.29	8.26	0.72	0.24	8	6.52	5.55	7.37	0.25	0.69
HL	17	14.54	11.86	17.60	1.73	0.42	9	15.25	12.89	17.60	1.70	0.57	8	13.74	11.86	15.76	0.52	1.47
HW	17	8.55	6.76	10.69	1.23	0.30	9	9.09	7.41	10.69	1.29	0.43	8	7.95	6.76	9.20	0.31	0.89
HD	17	6.86	4.96	8.84	1.03	0.25	9	7.19	5.78	8.84	1.11	0.37	8	6.48	4.96	7.62	0.30	0.86
ELa	17	2.65	2.14	3.48	0.38	0.09	9	2.79	2.20	3.48	0.45	0.15	8	2.49	2.14	2.69	0.06	0.18
ELa	17	2.73	2.14	3.28	0.35	0.08	9	2.87	2.33	3.28	0.37	0.12	8	2.57	2.14	2.85	0.09	0.25
DEa	17	2.20	1.68	2.76	0.25	0.06	9	2.25	1.92	2.76	0.24	0.08	8	2.14	1.68	2.48	0.09	0.25
DEb	17	2.22	1.93	2.56	0.19	0.05	9	2.28	2.00	2.56	0.21	0.07	8	2.16	1.93	2.36	0.05	0.15
EYEARa	17	5.46	4.09	6.68	0.81	0.20	9	5.90	4.83	6.68	0.70	0.23	8	4.95	4.09	5.91	0.22	0.62
EYEARb	17	5.40	4.31	6.73	0.73	0.18	9	5.74	4.52	6.73	0.73	0.24	8	5.02	4.31	5.69	0.19	0.54
DOEa	17	4.25	3.21	5.38	0.62	0.15	9	4.56	3.71	5.38	0.62	0.21	8	3.90	3.21	4.61	0.16	0.44
DOEb	17	4.34	3.31	5.72	0.65	0.16	9	4.62	3.69	5.72	0.70	0.23	8	4.03	3.31	4.62	0.16	0.47
MDa	17	1.61	1.24	2.15	0.32	0.08	9	1.65	1.25	2.15	0.35	0.12	8	1.57	1.24	2.10	0.11	0.30
MDb	17	1.59	1.11	2.23	0.34	0.08	9	1.67	1.20	2.23	0.38	0.13	8	1.51	1.11	1.87	0.10	0.28
FLLa	17	18.03	13.82	21.29	1.94	0.47	9	18.39	16.01	21.29	1.68	0.56	8	17.63	13.82	20.17	0.79	2.24
FLLb	17	18.06	13.68	21.00	1.89	0.46	9	18.55	16.49	21.00	1.58	0.53	8	17.51	13.68	19.67	0.77	2.17
HLLa	17	27.81	20.85	33.97	3.61	0.88	9	29.44	25.24	33.97	3.51	1.17	8	25.96	20.85	29.39	1.03	2.90
HLLb	17	28.16	21.00	33.72	3.44	0.83	9	29.80	25.51	33.72	2.86	0.95	8	26.32	21.00	30.56	1.14	3.22
AG	17	30.76	24.21	39.34	4.63	1.12	9	29.01	24.21	32.11	3.06	1.02	8	32.72	25.01	39.34	1.94	5.48
SVL	10	60.05	48.57	69.96	6.95	1.69	9	59.25	51.33	67.02	5.97	1.99	8	60.94	48.57	69.96	2.92	8.25
TL	10	104.13	85.20	123.60	11.66	3.69	5	100.14	85.20	118.84	12.25	5.48	5	108.11	97.38	123.60	4.82	10.79

Note. For abbreviations, see *Material and Methods*; N, number of specimens; S.D., standard deviation; S.E., standard error of the mean.

along the back, and surrounded by black and white small dots. Two or three large bright blue ocelli are present on the side of each shoulder. Dorsal part of tail is uniformly greenish or pale brown. The sides of the head are pale brown or olive green. The throat and ventral side are light bluish, sides of body covers numerous weakly developed white ocelli, outer abdominal plates are greenish with small black and blue dots. Fore and hind limb pale brown

with some black and white spots; anal region, thighs and lower base of tail are orange (Figs. 2 – 4).

The samples were captured between 10:00 and 12:30. The environmental temperature was 24.5 °C. The specimens were collected on grassland under small stones or active at the field (Fig. 5). The syntopic amphibians and reptiles where samples were collected at the new locality were *Rana macrocnemis* Boulenger, 1885, *Bufo variabilis* (Pallas, 1769), *Ablepharus bivittatus*



Fig. 3. Dorsolateral view of female specimen of *Iranolacerta brandtii* (photograph by K. Olgun).



Fig. 4. Ventral view of male (left) and female (right) specimens of *Iranolacerta brandtii* (photograph by K. Olgun).



Fig. 5. Habitat of *Iranolacerta brandtii*, Yamanyurt Village, Saray, Van, Turkey (photograph by K. Olgun).

(Ménétries, 1832), *Parvilacerta parva* (Boulenger, 1887).

DISCUSSION

Arnold et al. (2007), conducted comprehensive molecular and morphological analysis on Lacertinae subfamily and described seven new genera. Two species formerly considered a part of the genus *Lacerta* were elevated to a distinct genus by Arnold et al. (2007) as *Iranolacerta* including two species (*I. zagrosica* is the sister species of *I. brandtii*). According to results of modern molecular studies (Harris et al., 1998; Pyron et al., 2013), *Iranolacerta* was confirmed to be as a sister lineage of *Darevskia*.

I. brandtii morphologically differs from other related taxa in having two superposed postnasals, eight ventral scales across belly and typical color-pattern features such as having ocellated bluish spot on the side of each shoulder (Nilson et al., 2003; Arnold et al., 2007). Up to 2003, *I. brandtii* was monotypic species; Nilson et al. (2003) described the Esfahan populations in the central Zagros

as a distinct subspecies, *I. b. esfahanica*. Morphologically *I. b. esfahanica* is distinguished from the nominal subspecies by the masseteric shield small or absent, a higher number of temporal scales, more longitudinal ventral plate rows, more gular scales, and a higher number of collar scales (Nilson et al., 2003; Rajabizadeh et al., 2010).

Comparison of pholidosis characteristics and metric measurements of specimens we studied with those given in previous studies is presented in Table 3. Turkish *Iranolacerta* specimens show differences in terms of some morphological data (Table 3). Our specimens differs from nominate form in having lower numbers of supracular granules, gulars, subdigital lamellae and higher numbers of temporalia. On the other hand, our specimens are distinguished from *I. b. esfahanica* in having lower numbers of ventral plates transversally, submaxillar pairs, supracular granules, gulars, collars and preanals. *I. b. esfahanica* was described as a morphologically distinct subspecies (Nilson et al., 2003). However, molecular study based on mitochondrial DNA segment (covering cytochrome b, 16S and 12S ribosomal RNA) on genus *Irano-*

TABLE 3. Comparison of Meristic Pholidosis Characters and Metric Measurements of our Specimens with Those Given by Nilson et al. (2003), Rezazadeh et al. (2010), Rajabizadeh et al. (2010), and Hosseinian Yousefkhani et al. (2012)

Characters	Nilson et al. (2003)		Rezazadeh et al. (2010)	Rajabizadeh et al. (2010)	Hosseinian Yousefkhani et al. (2012)	This study
	<i>I. b. brandtii</i>	<i>I. b. esfahanica</i>	<i>I. b. brandtii</i>	<i>I. b. brandtii</i>	<i>I. b. brandtii</i>	
DS	54.33	53.60	55.65	50.50	53.00	53.35
TVP	8.00	9.20	8.00	8.00	9.00	8.00
LVP	29.00	29.20	25.83	29.50	28.00	29.53
SM	5.09	5.60	—	5.00	—	5.12
SRL	9.00	9.40	9.35	9.00	—	9.35 – 9.47
SCP	6.67	6.80	—	5.50	—	6.53
SCG	9.92	9.60	—	11.00	—	8.00
MG	27.16	28.20	—	27.00	31.00	26.41
C	9.75	11.40	10.13	10.00	—	10.71
FP	17.92	17.00	17.83	17.50	16.50	17.88
T	40.33	63.20	—	54.00	—	62.41
Postnasals	2.0	2.20	—	2.00	—	1.94
SDL	28.58	27.60	26.61	27.50	—	27.50
PA	6.83	6.00	—	7.00	—	6.94
SVL, mm	52 – 67	50 – 68	56.78 – 68.50	55.44 – 63.92	61.94 – 68.83	48.57 – 69.96
TL, mm	83 – 135	78 – 106	76 – 136.90	90.79 – 118.85	—	85.20 – 123.60
HW	—	—	9.20	—	—	8.55
HL	—	—	15.43	—	—	14.54
HD	—	—	7.85	—	—	6.86
EL	—	—	2.15	—	—	2.65
DE	—	—	2.75	—	—	2.20
DOE	—	—	5.35	—	—	4.25
AG	—	—	34.21	—	—	30.76
EYEAR	—	—	4.33	—	—	5.46

lacerta showed that *I. b. esfahanica* is not different from nominal form (Ahmadzadeh et al., 2013). Rajabizadeh et al. (2010) stated that two specimens captured from 130 km S of its formerly known range in Iran show an intermediate state. The taxonomic position of several taxa of subfamily Lacertinae are still controversial. In order to solve this complicated situation, in addition to morphological study, modern phylogenetic and phylogeographic information should be added producing a more accurate taxonomy for the studied species.

Iranolacerta was considered to be endemic to Iran (Anderson, 1999; Nilson et al., 2003; Arnold et al., 2007; Smid et al., 2014). According to the previous studies on the Turkish herpetofauna (Baran and Atatür, 1998; Sindaco et al., 2000; Baran et al., 2012), *Iranolacerta* has not been recorded from Turkey. During field trips to eastern Turkey in 2014, seventeen specimens from a population belonging to the genus *Iranolacerta* were collected. Considering this observation, the specimens collected from Van were compared with data presented in the previous literature related to *Iranolacerta* (Anderson, 1999; Nilson et al., 2003; Rezazadeh et al., 2010; Rajabizadeh et al., 2010). Morphological comparisons revealed that the Turkish specimens of *Iranolacerta* were in the agreement with the values given in the previous studies for the *I. brandtii*. Consequently, this paper represents the first record of *I. brandtii* in the Turkey near to Iranian border. The newly found locality for *I. brandtii* extends its distribution up to 200 km W of its formerly known range [Basmanj, SE Tabriz, East Azerbaijan Province, Iran (Rajabizadeh et al., 2010)].

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REFERENCES

- Ahmadzadeh F., Kiabi B. H., Kami H. G., and Hojjati V. (2008), "A preliminary study of the lizard fauna and their habitats in Northwestern Iran," *Asiatic Herpetol. Res.*, **11**, 1 – 9.
- Ahmadzadeh F., Carretero M. A., Rödder D., Harris D. J., Nunes Freitas S., Perera A., and Böhme W. (2013), "Inferring the effects of past climate fluctuations on the distribution pattern of *Iranolacerta* (Reptilia, Lacertidae): Evidence from mitochondrial DNA and species distribution models," *Zool. Anz.*, **252**, 141 – 148.
- Alekperov A. M. (1978), *Zemnovodnye i Presmykayushchiesya Azerbajdžana [Amphibians and Reptiles of Azerbaijan]*, Elm, Baku [in Russian].
- Ananjeva N. B., Orlov N. L., Khalikov R. G., Darevsky I. S., Ryabov I. S., and Barabanov A. V. (2006), *An Atlas of the Reptiles of North Eurasia. Taxonomic, Diversity, Distribution, Conservation Status, Pensoft Series Faunistica 47*, Pensoft, Sofia.
- Anderson S. C. (1999), *The Lizards of Iran*, Society for the Study of Amphibians and Reptiles, Oxford (Ohio).
- Arnold E. N., Arribas O., and Carranza A. S. (2007), "Systematics of the palaearctic and oriental lizard tribe Lacertini (Squamata: Lacertidae: Lacertinae), with description of eight new genera," *Zootaxa*, **1430**, 1 – 86.
- Baran İ. and Atatür M. K. (1998), *Turkish Herpetofauna (Amphibians and Reptiles)*, T. C. Çevre Bakanlığı, Ankara.
- Baran İ., Ilgaz Ç., Avcı A., Kumlutaş Y., and Olgun K. (2012), *Türkiye Amfibi ve Sürüngenleri [The amphibian and reptiles of Turkey]*, TÜBİTAK Popüler Bilim Kitapları, Ankara.
- Harris D. J., Arnold E. N., and Thomas R. T. (1998), "Relationships of lacertid lizards (Reptilia: Lacertidae) estimated from mitochondrial DNA sequences and morphology," *Proc. Roy. Soc. London*, **265**, 1939 – 1948.
- Hosseinian Yousefkhani S. S., Mohammadpour A., and Eskandarzadeh N. (2012), *Remarks on the Iranolacerta brandtii brandtii (de Filippi, 1863) (Sauria: Lacertidae) habitat from the Varzeghan area, East Azerbaijan province*, available from: <http://lacerta.de/AS/Artikel.php?Article=151> (accessed 8 July 2014).
- Nilson G., Rastegar-Pouyani N., Rastegar-Pouyani E., and Andrén C. (2003), "Lacertas of the south and central Zagros Mountains, Iran, with description of two new taxa," *Russ. J. Herpetol.*, **10**, 11 – 24.
- Pyron R., Burbrink F., and Wiens J. (2013), "A phylogeny and revised classification of Squamata, including 4161 species of lizards and snakes," *BMC Evol. Biol.*, **13**, 93.
- Rajabizadeh M., Rastegar-Pouyani N., Khosravani A., Barani-Beiranvand H., Faizi H., and Oraei H. (2010), "New records of lacertid genera, *Iranolacerta* and *Apathya* (Sauria: Lacertidae) in Iran," *Iranian J. Animal Biosyst.*, **6**, 21 – 32.
- Rastegar-Pouyani N., Kami H. G., Rajabizadeh M., Shafiei S., and Anderson S. C. (2008), "Annotated checklist of Amphibians and Reptiles of Iran," *Iranian J. Animal Biosyst.*, **4**, 43 – 66.
- Rezazadeh E., Kiabi B. H., and Ahmadzadeh F. (2010), "Contribution to the knowledge of *Iranolacerta brandtii* de Filippi 1863 (Sauria: Lacertidae) from the northwest of Iran," *Russ. J. Herpetol.*, **17**, 223 – 230.
- Sindaco R., Venchi A., Carpaneto G., and Bologna M. (2000), "The reptiles of Anatolia. A checklist and zoogeographical analysis," *Biogeographia*, **21**, 441 – 554.
- Smid J., Moravec J., Kodym P., Kratochvil L., Hosseinian Yousefkhani S. S., Rastegar-Pouyani E., and Frytna D. (2014), "Annotated checklist and distribution of the lizards of Iran," *Zootaxa*, **3855**, 1 – 97.