SHORT COMMUNICATIONS

DOI: 10.30906/1026-2296-2022-29-4-250-254

NEW LOCALITY RECORDS OF THE ENDEMIC LIZARD SPECIES, *Lacerta pamphylica* SCHMIDTLER, 1975 (SQUAMATA: LACERTIDAE) IN TURKEY

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Submitted July 19, 2019.

The Pamphylian green lizard, *Lacerta pamphylica*, whose distribution is only known from Antalya and Mersin provinces of Turkey, is recorded in the Isparta Province for the first time in the present study. The present note reports the new locality records of *L. pamphylica*, which constitutes the species' the northernmost known Turkish locality. With the record of the present study, the known distribution area of the species has been extended about 100 km to the northward. The pholidolial and morphometric characters and color-pattern features of the specimens were found similar to the specimens of *L. pamphylica* reported in the literature.

Keywords: distribution; Isparta; Pamphylian green lizard; pholidolial characters.

The Pamphylian green lizard, *Lacerta pamphylica* is an endemic lizard species of Turkey and distributed in the central south coast of Turkey in the provinces of Antalya and Mersin from Olympos (Antalya) in the west, north to Cevizli (Antalya), and east to Göksu Delta (Mersin) (Schmidtler, 1986a; Winden and Boagerts, 1992; Geniez et al., 2004).

The records on the distribution of the species in the province of Antalya is limited to the studies of Schmidtler (1975) (Alanya, type locality of specimens, Cevizli, Irmasan, and Taşağıl), Schmidtler (1986a) (Beşkonak, Alanya, Irmasan, Cevizli, and Taşağıl), Schmidtler (1986b) (Irmasan and Taşağıl), Mulder (1995) (Taşağıl), Geniez et al. (2004) (Olympos), Kumlutaş et al. (2004) (Taşavur-Gündoğmuş, Alıcı-Alanya), Üçüncü et al. (2004) (Beşkonak and Cevizli), Peek (2013) (Side and Manavgat) and Kucharzewski (2015) (Hamaxia ancient city in Alanya and between Karakaya and Alara).

In the province of Mersin, the species was reported in the studies of Schmidtler (1975; 1986a; 1986b) (20 km N Anamur and Azıtepe, 14 km E), Winden and Boagerts (1992) and Winden et al. (1997) (Göksu Delta), and Arıkan and Çiçek (2010) (Mut).

The present study provides the new locality records from the Sütçüler Distict of Isparta Province in the Mediterranean region of Turkey (Fig. 1) and pholidolial and morphometric characters and color-pattern features of the *L. pamphylica* specimens.

During our field surveys in the summer of 2019, the individuals (4 ♂♂, 2 ♀♀, 1 subadult ♀) of *L. pamphylica* were collected from four localites; Aşağı Kırıntı, Sütçüler-Isparta (on 26 June 2019, GPS data, 37°31.729′ N 31°15.008′ E, 841 m a.s.l.), Yukarı Kırıntı, Sütçüler-Isparta, (on 28 June 2019, GPS data, 37°33.155′ N 31°15.049′ E, 891 m a.s.l.), Kasımlar, Sütçüler-Isparta (on 28 June 2019, GPS data, 37°30.948′ N 31°11.3869′ E, 723 m a.s.l.) and Belence, Sütçüler-Isparta (on 30 June 2019, GPS data, 37°39.834′ N 31°3.689′ E, 1078 m a.s.l.). The localities are shown in Fig. 1. The lizards were caught in forests and small wooded areas along the creeks or in the thorns and tomato greenhouses (Fig. 2). Other reptiles shared their living areas with *Lacerta pamphylica* are *Anatololacerta danfordi* Günther, 1876, *Stellagama stellio* L., 1758, *Mediodactylus kotschyi* Steindachner, 1870,

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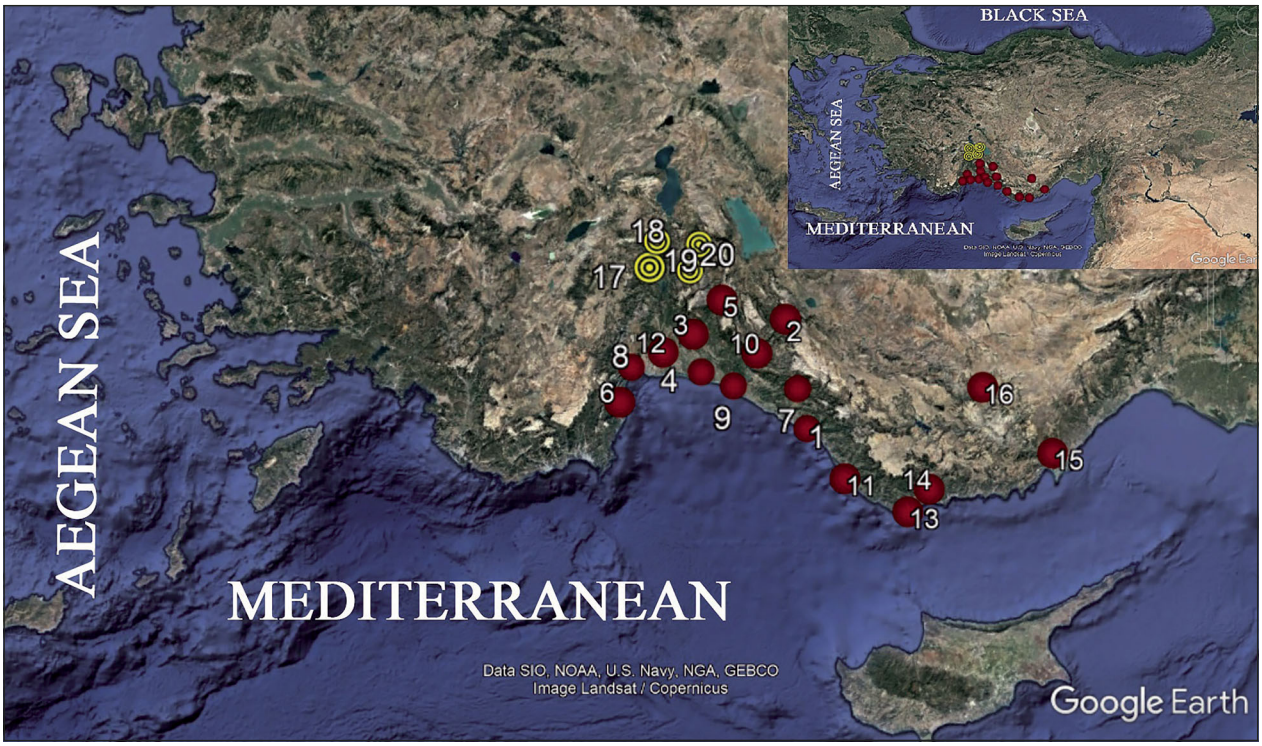

Fig. 1. Map showing the localities of *Lacerta pamphylica* in Turkey: 1, Alanya, Antalya; 2, Cevizli, Antalya; 3, Irmasan, Antalya; 4, Taşağıl, Antalya; 5, Beşkonak, Antalya; 6, Olympos, Antalya; 7, Taşavur-Gündoğmuş, Antalya; 8, Alıcı, Antalya; 9, Side, Antalya; 10, Manavgat, Antalya; 11, Hamaxia ancient city; 12, between Karakaya and Alara; 13, Anamur, Mersin; 14, Azıtepe, Mersin; 15, Göksu Delta, Mersin; 16, Mut, Mersin. The yellow colored circles show the new localities: 17, Aşağı Kırıntı, Isparta; 18, Yukarı Kırıntı, Isparta; 19, Kasımlar, Isparta; 20, Belence, Isparta.

and *Testudo graeca* L., 1758. All specimens were anesthetized with ether, fixed with a 10% formaldehyde injection, and deposited in 70% ethanol. They were deposited in the Zoology Research Laboratory of Karadeniz Technical University (Collection number: KZL-353 for Aşağı Kırıntı, KZL-354 for Yukarı Kırıntı, KZL-355 for Kasımlar, and KZL-356 for Belence) of the Department of Biology at the Faculty of Science, Karadeniz Technical University.

Mensural and meristic data were recorded by modifying the systems of Schmidtler (1986a) and Kumlutaş et al. (2004). All pholidolial characters were examined under the stereo microscope and all specimens' morphometric features are measured to the nearest 0.1 mm using a digital caliper. The following pholidolial characteristics were evaluated: supralabial plates (right – left, SRLa – SRLb, number of labials both anterior and posterior to center of eye), supraciliar plates (right – left, SCPa – SCPb), supratemporal plates (right – left, STa – STb), supraciliar granules (right – left, SCGa – SCGb), temporal plates (right – left, Ta – Tb), sublabial plates (right – left, SLa – SLb), preocular plates (right – left, POa – POb), postnasal plates (right – left, PNa – PNb), postventralia (right – left, PVa – PVb), transversal series of gular scales between inframaxillar symphysis and collar (MG), transversal series of dorsal scales at the midbody (DS), collaria (C), longitudinal ventral plates (LVP), femoral pores (right – left, FPa – FPb), subdigital lamellae in the 4th toe (right – left, SDLa – SDLb), number of preanal scales surrounding anals (PA1), and all plates surrounding anals (PA2).

The morphometric measurements in this study following: snout-vent length (SVL), tip of snout to anal cleft; tail length (TL), anal cleft to tip of tail; pileus width (PW), at the widest point between parietal plates; pileus length (PL), tip of snout to the posterior margins of parietals; head width (HW), at widest point of head; head length (HL), tip of snout to posterior margin of the ear opening.

Material. KZL-353/2019, 1 ♂, 1 ♀, 06.26.2019, Aşağı Kırıntı, Sütçüler-Isparta leg. U. Bülbül; KZL-354/2019, 1 ♂, 1 ♀, 06.28.2019 Yukarı Kırıntı, Sütçüler-Isparta leg. U. Bülbül; KZL-355/2019, 1 ♂, 1 subadult ♀, 06.28.2019, Kasımlar, Sütçüler-Isparta leg. U. Bülbül;

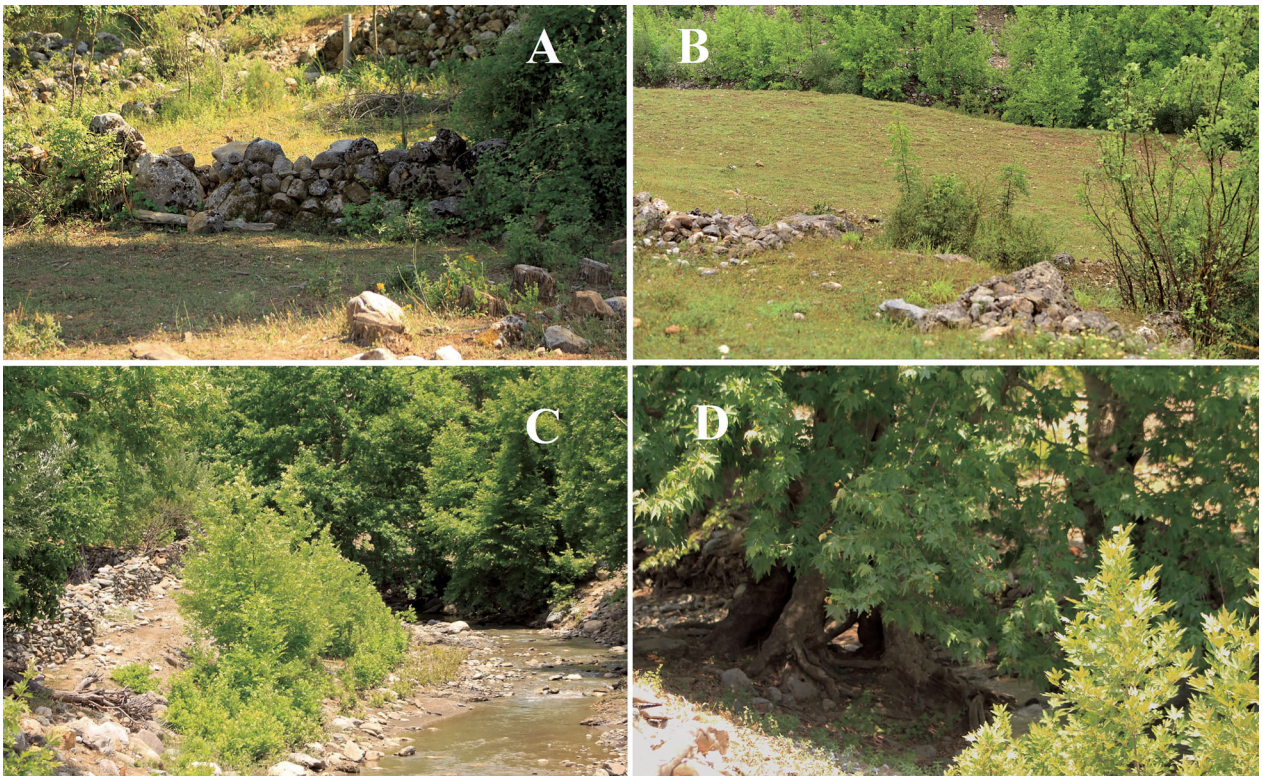

Fig. 2. The habitats of *Lacerta pamphylica* populations: A, Aşağı Kırıntı, photo by Halime Koç on June 26, 2019; B, Yukarı Kırıntı, photo by Ufuk Bülbül on 28 June 2019; C, Kasımlar, photo by Halime Koç on 28 June 2019; D, Belence photo by Ufuk Bülbül on 30 June 2019.

KZL-356/2019, 1 ♂, 06.30.2019, Belence, Sütçüler-Isparta leg U. Bülbül.

Pholidolial characteristics. The number of preocular and supratemporal plates was 2 – 2 (right – left) in all specimens. There were 2 – 2 (right – left) postnasal plates in all adult specimens while the number of these plates was 3 – 2 in the subdult specimen. The number of supraciliar plates was 6 – 6 (right – left) in all specimens, except 1 adult male specimen having 5 – 6 supraciliar plates. The mean numbers of dorsal scales, median gulars and longitudinal ventral plates were 61, 22.1, and 30.6, respectively in the adult specimens. The number of collaria was 9 in five adult specimens and one subadult specimen while it was 8 in the adult male specimen. SRLPa was 7 in all specimens while SRLPb was 7 (85.7%) in 6 specimens and 8 (14.3%) in one specimen. The numbers of subdigital lamellae under the 4th toe were 32 in the male specimens, 31 in the female specimens and 29 in the subadult specimen.

Morphometric measurements. Maximum SVL's for male and female specimens were 115.5 and 115.5 mm, respectively. The maximum TL for male and female were 257.7 and 244.4 mm, respectively. The means of HW were 17.4 and 15.0 mm in males and females, respectively. The mean HL for male and female were 24.7 mm and 22.6 mm, respectively.

Pholidolial characteristics and morphometric measurements of specimens are given in Table 1.

Color pattern. In the specimens of *L. pamphylica*, the color of the back side was usually green. This green color ends at the level of the hind limbs in the females, while it continues to the beginning of the tail in the males. The males had numerous black and brown small spots on the dorsal part, while the females had larger black spots which form patterns on the dorsal. The dorsal part of the head was green and black spotted on the brown background in all specimens. The lateral of the head was blue and the lateral of the body was green and brown in the males, while the lateral of the head whitish brown and the laterals of the body were brown in the males. The longitudinal whitish lines on the sides of the body were very obvious in the females, whereas they were thin and discontinuous in the males. In males, the sides of the neck were clearly greenish blue, while they were turquoise blue and green in the females. The ventral of the body was yellow in all specimens. The ventral part of the head

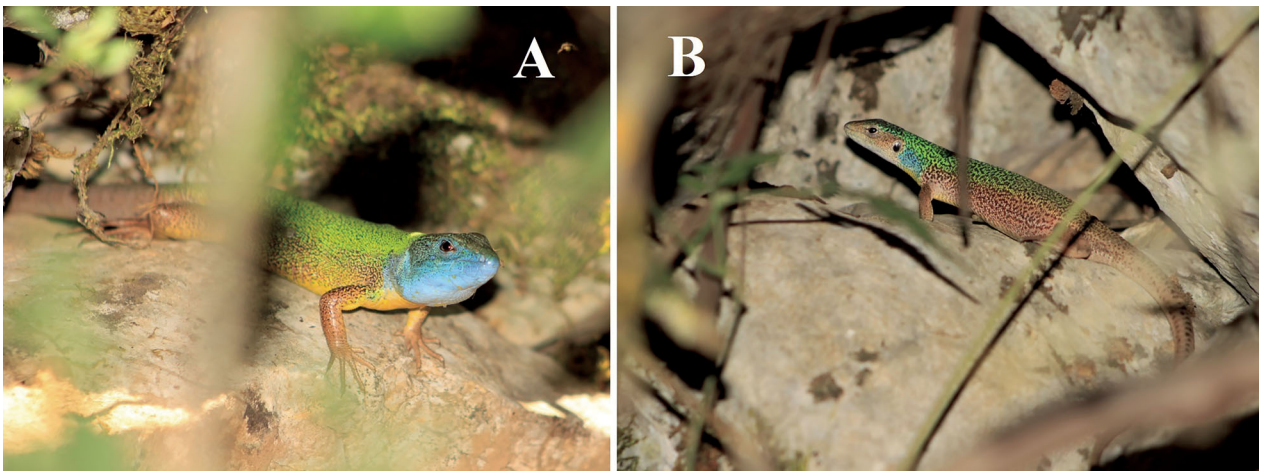

Fig. 3. Two specimens of *Lacerta pamphylica* in the studied populations: A, the male specimen from Aşağı Kırıntı population, photo by Halime Koç on 26 June 2019; B, the female specimen from Yukarı Kırıntı population, photo by Halime Koç on 28 June 2019.

TABLE 1. Comparison of Some Pholidolial Characteristics and Morphometric Measurements of Our Specimens with Those Given by Kumlutaş et al. (2004) and Schmidtler (1968a)

Character	This study							Kumlutaş et al., 2004		Schmidtler, 1986a
	Aşağı Kırıntı		Yukarı Kırıntı		Kasımlar		Belence			Mean values of 11 adult specimens
	1 ♂	1 ♀	1 ♂	1 ♀	1 ♂	1 subadult ♀	1 ♂	1 ♂	1 juvenile	
SRLa – SRLb	7 – 7	7 – 7	7 – 8	7 – 7	7 – 7	7 – 7	7 – 7	—	—	—
SLa – SLb	7 – 6	6 – 6	7 – 7	6 – 6	6 – 6	7 – 7	6 – 6	—	—	—
SCPa – SCPb	6 – 6	6 – 6	5 – 6	6 – 6	6 – 6	6 – 6	6 – 6	—	—	6.2
SCGa – SCGb	10 – 10	10 – 10	10 – 10	10 – 10	10 – 10	10 – 10	10 – 10	7	11	8.7
STa – STb	2 – 2	2 – 2	2 – 2	2 – 2	2 – 2	2 – 2	2 – 2	2 – 2	2 – 2	—
Ta – Tb	36 – 37	30 – 29	39 – 38	39 – 39	34 – 36	33 – 32	35 – 36	37	32	28
POa – POb	2 – 2	2 – 2	2 – 2	2 – 2	2 – 2	2 – 2	2 – 2	2 – 2	2 – 2	1.9
PNa – PNb	2 – 2	2 – 2	2 – 2	2 – 2	2 – 2	3 – 2	2 – 2	2 – 2	2 – 2	—
FPa – FPb	18 – 18	17 – 17	20 – 21	18 – 17	19 – 20	17 – 17	19 – 18	18 – 18	18 – 18	17.5
LVP	31	29	34	30	29	31	31	28	28	—
PA1	1	1	1	1	1	1	1	—	—	—
PA2	6	6	6	6	6	6	6	—	—	8.7
MG	23	22	22	21	23	22	22	24	21	19.8
DS	62	60	62	61	61	60	61	57	57	60.4
C	9	9	9	9	8	9	9	—	—	8.4
SDLa – SDLb	32	31	32	31	32	29	32	33	30	32.9
SVL	109.5	115.5	105.4	115.1	115.5	80.7	112.1	89.5	—	—
TL	89.1	244.4	—	192.5	257.7	179.9	—	236.4	—	—
HL	24.4	22.7	24.4	22.5	25.1	17.9	24.8	—	—	—
HW	16.4	15.0	17.1	15.1	18.1	12.3	17.9	—	—	—
PL	26.1	24.4	25.8	23.9	28.0	18.9	27.0	21.5	—	—
PW	13.1	12.2	13.8	12.1	13.8	10.0	13.3	10.0	—	—

Note. SLa – SLb, Ta – Tb, and POa – POb were used as in the study of Ilgaz et al. (2016). The remain abbreviations were obtained from the study of Ilgaz et al. (2013). For other abbreviations see text.

was blue in the males, while it was white in the females. There were dark brown spots on the tails of all specimens. These spots were bigger in the females (Fig. 3).

In the present study, we reported the first locality records of *L. pamphylica* for Isparta Province. This finding indicates that the species may also be found in other

provinces located around the new localities and away from the Mediterranean coast. The number of field studies related to the species is quite low. More observations are needed in the areas (especially in the Aksu and Eğirdir districts which are close to Sütçüler), where the species may distribute. Pholidolial characteristics and morphometric measurements of our specimens were found similar to the specimens used in the studies of Schmidtler (1986a) and Kumlutaş et al. (2004).

Acknowledgments. The authors wish to thank Engin Zaman and Ebru Dolunay for their helpings in the field.

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