

New records of the Anatolian Worm Lizard, *Blanus strauchi* (BEDRIAGA, 1884), from Turkey (Squamata: Amphisbaenia: Blanidae)

Neue Nachweise der Anatolischen Ringelwühle
Blanus strauchi (BEDRIAGA, 1884) aus der Türkei
(Squamata: Amphisbaenia: Blanidae)

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KURZFASSUNG

Acht Exemplare von *Blanus strauchi* (BEDRIAGA, 1884) von zwei neuen Fundstellen in der Türkei (Dutluca, Kemaliye, Erzincan und Burdur) wurden hinsichtlich äußerer morphologischer Merkmale untersucht und der Unterart *B. s. aporus* (WERNER, 1898) zugeordnet. Mit dem Nachweis von Dutluca erweitert sich das bekannte Verbreitungsgebiet um etwa 120 km nach Norden, während der Fund bei Burdur einen neuen Punkt innerhalb des Verbreitungsgebietes markiert. Eine aktualisierte Karte der Verbreitung von *B. strauchi* in der Türkei wird vorgelegt.

ABSTRACT

In this study, eight specimens of *Blanus strauchi* (BEDRIAGA, 1884) from two new localities in Turkey (Dutluca Village, Kemaliye, Erzincan and Burdur) were examined in terms of morphological characters and included in the subspecies *B. s. aporus* (WERNER, 1898). With the record of Dutluca Village, the distribution of the species was extended about 120 km northwards, whereas the record of Burdur is a new locality within its distributional range. An updated distribution map of *B. strauchi* in Turkey was provided.

KEYWORDS

Reptilia: Squamata: Amphisbaenia: Blanidae; *Blanus strauchi aporus*, Anatolian Worm Lizard, distribution, new record localities, Turkey

INTRODUCTION

The Anatolian Worm Lizard, *Blanus strauchi*, was originally described by BEDRIAGA (1884) from "Smyrna" (İzmir, Turkey). BOULENGER (1884) recognized a second Turkish form, *Blanus bedriagae*, from Xanthus (Kinik Village, Fethiye, Muğla), and WERNER (1898) a third one, *Blanus aporus*, from Mersin. In his comprehensive morphological analysis of 167 specimens, ALEXANDER (1966) classified these two latter taxa as subspecies of *B. strauchi* and ZALOĞLU (1968) agreed on this concept. Accordingly, the nominate form occurs in western Turkey and on the adjacent islands, *B. s. bedriagae* in southwestern Turkey and *B. s. aporus* from southern central Turkey eastwards. BARAN (1977) provided the east-

ernmost distributional record of the species (Çukurca, Hakkari, Turkey) and suggested treating *B. s. bedriagae* as a synonym of *B. s. strauchi*, specimens of Finike and Kaş (Antalya, Turkey) included (BARAN 1983). In his study on the herpetofauna of the islands between Marmaris and İskenderun, the same researcher stressed that the taxonomic status of *B. s. bedriagae* should be revised (BARAN 1990) and later (BARAN & ATATÜR 1998) recognized three subspecies again (*B. s. strauchi*, *B. s. bedriagae* and *B. s. aporus*). The systematic status and classification of these forms is still debatable.

In the present study, the distribution of *B. strauchi* in Anatolia was mapped and two new locality records were provided.

MATERIALS AND METHODS

Using the GIS software package Arc-Info 9.3.1, the authors mapped the localities of *B. strauchi* specimens collected in previous studies (ALEXANDER 1966; ZALOĞLU 1968; BAŞOĞLU & BARAN 1977; BARAN 1977; ÖZDEMİR & BARAN 2002; YILDIZ et al. 2009) and registered in the museum of the Zoology Department of the Ege University, Bornova/Izmir, Turkey (ZDEÜ), as well as specimens stored in the Natural History Museum in Vienna, Austria.

In addition, eight *B. strauchi* specimens collected from the Village of Dutluca Kemaliye, Erzincan ($n = 6$, ÇOMÜ-ZDEÜ 117/2007, 39.199266 N, 38.635866 E, 1,150 m a.s.l.) and Burdur ($n = 2$, ÇOMÜ-ZDEÜ 55/2003 37.581740 N, 30.064175 E, 934 m a.s.l.) during the fieldwork between

2003 and 2007 were examined for their external morphology. The following measurements and counts were made: snout-vent length, length and width of prefrontal plate, number of infralabials; number of preloacal pores, position of the pores relative to the ventromedian line; length of the contact line of the second supralabial plate with the prefrontal plate (along a short or longer line) and of the postmental with the lateral segments of the postgenials (punctual or along a short line); number of annuli on body and tail; and number of scales per annulus.

The terminology used in describing the specimens conforms to ALEXANDER (1966) who did not report any external sexual dimorphism for *B. strauchi*. Thus, the statistics refer to the merged sample.

RESULTS AND DISCUSSION

The descriptive statistics of the morphological data obtained from eight specimens studied are presented in Table 1. Based on their external characters, the specimens of Erzincan and Burdur were included in the subspecies *B. s. aporus*.

In a study of 52 specimens of *B. s. aporus*, ALEXANDER (1966) reported values ranging from 98 to 116 for the number of body annuli and from 34 to 42 for the number of scales per ring, and stated that the preloacal pores numbering from 4 to 8 were arranged in two portions, separated from the medio-ventral line. BARAN (1977) found for 45 specimens of *B. s. aporus*, that the number of scales per annulus in the middle of the body ranged from 33 to 43; the number of preloacal pores was 4 to 8 in 44 specimens and 10 in one specimen, the pores being arranged in two portions separated from the medio-ventral line in 44 specimens, and in a more regular, continuous manner in only one specimen. The findings obtained from the eight specimens that were analyzed morphologically in our study are in agreement with the data of *B. s. aporus* in the literature concerned.

Blanus strauchi is distributed on the southeast Aegean islands (Rhodes, Kastellorizo, Kos, Symi, Fourni, Samos, Leros,

Nisyros) (VALAKOS et al. 2008), in west, south and east Anatolia, and in some Near East countries (Iraq, Syria, and Lebanon) (ALEXANDER 1966; CLARK & CLARK 1973; BAŞOĞLU & BARAN 1977; HRAOUI-BLOUQUET et al. 2002; MARTENS 1997). The distribution of the species in Turkey was previously depicted by ALEXANDER (1966), BARAN (1977), SINDACO et al. (2000) and YILDIZ et al. (2009). Based on the specimens they had captured from Siirt, YILDIZ et al. (2009) erroneously reported an extension of the known range of the species about 150 km east of the Tigris River and stated that the eastern distributional border of the species was Siirt. However, YILDIZ et al. (2009) had not considered the paper by BARAN (1977) who reported that the species lived in Çukurca (Province of Hakkari) which is about 150 km east of Siirt.

In the present study, the distribution map of *B. strauchi* in Anatolia (Fig. 1) was updated with two new records (Dutluca Village, Kemaliye/Erzincan and Burdur). With the record of Erzincan, the known distribution of the species (in particular its subspecies *B. s. aporus*) was extended about 120 km northwards, whereas the record of Burdur fills a gap in the west of its range.

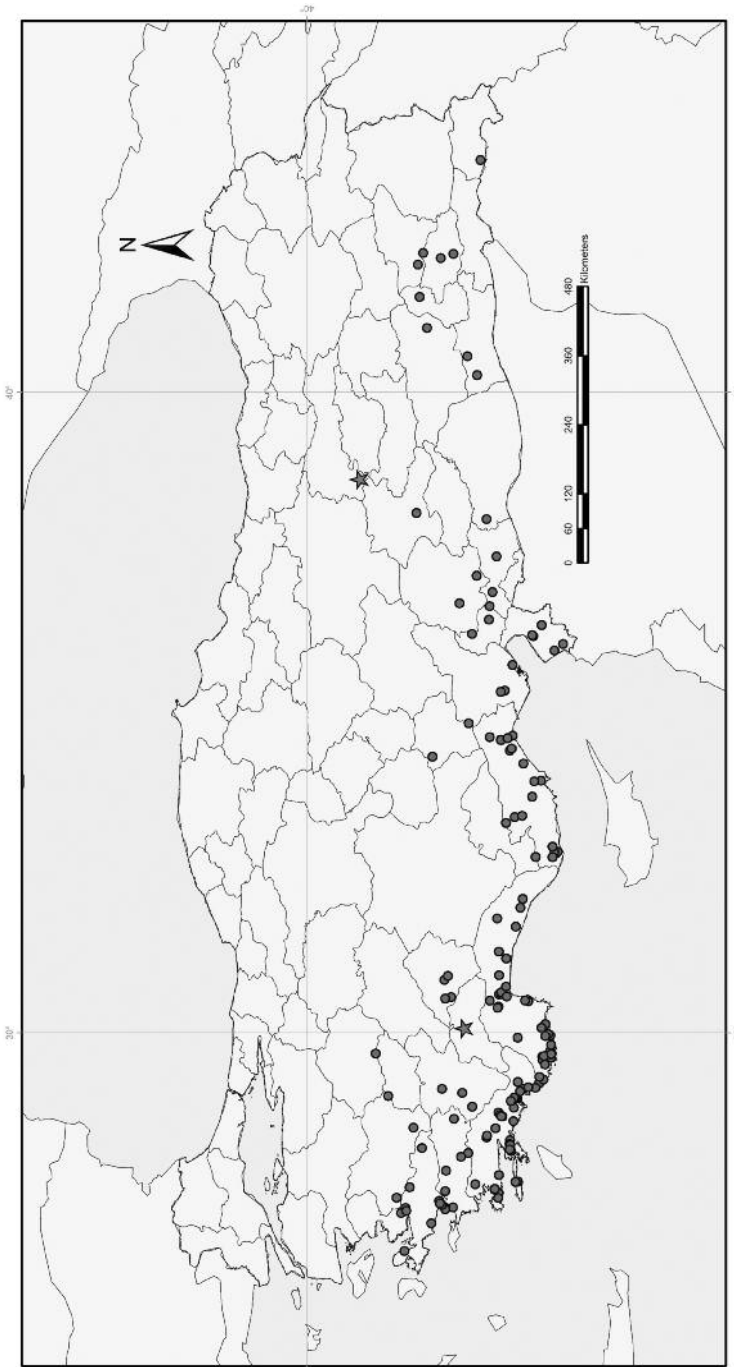


Fig. 1. Updated distribution map of *Blanus strauchi* (BEDRIAGA, 1884) from Turkey, based on specimens collected in previous studies (ALEXANDER 1966; ZALOGLU 1968; BAŞOĞLU & BARAN 1977; BARAN 1977; ÖZDEMİR & BARAN 2002; YILDIZ et al. 2009) and registered in the museum of the Zoology Department of the Ege University, Bornova/Izmir, Turkey, as well as specimens stored in the Natural History Museum in Vienna, Austria (blue dots). Stars refer to the new records reported here.

Abb. 1. Aktualisierte Verbreitungskarte von *Blanus strauchi* (BEDRIAGA, 1884) in der Türkei auf Grundlage früherer Studien (ALEXANDER 1966; ZALOGLU 1968; BAŞOĞLU & BARAN 1977; BARAN 1977; ÖZDEMİR & BARAN 2002; YILDIZ et al. 2009) und von Exemplaren im Museum der Zoologischen Abteilung der Ege Universität in Bornova/Izmir, Türkei sowie des Naturhistorischen Museums in Wien, Österreich (blaue Punkte). Sterne verweisen auf die Fundorte der beiden neuen Nachweise.

Table 1: Morphometric measurements including descriptive statistics and pholidosis counts of eight specimens of *Blanus strauchi* (BEDRIAGA, 1884). ToL - Total Length, SVL - Snout-Vent-Length, TaL - Tail Length, Pref L - Prefrontal Length, Pref W - Prefrontal Width, *n* - number of specimens, SD - Standard Deviation, SE - Standard Error.

Tab. 1: Morphometrische Daten und deskriptive Statistiken sowie Pholidose-Zählwerte von acht *Blanus strauchi* (BEDRIAGA, 1884). ToL - Gesamtlänge, SVL - Kopf-Rumpf-Länge, TaL - Schwanzlänge, Pref L - Präfrontale-Länge, Pref W - Präfrontale-Breite, *n* - Anzahl Exemplare, SD - Standardabweichung, SE - Standardfehler, Mean - arithmetisches Mittel, Range - Spannweite.

Character / Merkmal	<i>n</i>	Mean - SD	Range	SE
ToL	7	187.71 - 25.08	149 - 222	9.48
SVL	8	168.13 - 21.29	135 - 203	7.53
TaL	7	18.71 - 2.98	14 - 23	1.13
Pref L	8	2.71 - 0.24	2.37 - 3.23	0.09
Pref W	8	2.86 - 0.15	2.70 - 3.10	0.05
	<i>n</i>	Median - SD	Range	SE
Number of body annuli / Anzahl Körperringel	8	105.5 - 1.82	104 - 109	0.65
Number of tail annuli / Anzahl Schwanzringel	7	16 - 0.98	15 - 18	0.37
Number of scales on a midbody annulus / Anzahl der Schuppen auf einem Ringel in Rumpfmittle	8	35 - 3.14	33 - 41	1.11
in <i>n</i> out of 8 individuals / bei <i>n</i> von 8 Individuen				
Contact between second supralabial and prefrontal shields Kontakt zwischen dem 2. Supralabiale und dem Präfrontale		narrow / schmal board / breit	3 5	
Contact between postmental and lateral parts of postgenial Kontakt zwischen Postmentale und den Seiten des Postgeniale		punctual / punktförmig broad / breit	1 7	
Visibility of preloacal pores / Sichtbarkeit der Präloakalporen		distinct / deutlich	8	
Number of infralabials / Anzahl der Infralabialia		3	8	
Number of preloacal pores / Anzahl der Präloakalporen		5 6 7	3 4 1	

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