

More data on the distribution and morphology of *Mediodactylus kotschyi bolkarensis* (RÖSLER, 1994), from Central Anatolia, Turkey (Squamata: Sauria: Gekkonidae)

Weitere Daten zur Verbreitung und Morphologie von *Mediodactylus kotschyi bolkarensis* (RÖSLER, 1994) aus Zentralanatolien, Türkei
(Squamata: Sauria: Gekkonidae)

MURAT AFSAR & KERIM ÇİÇEK & CEMAL VAROL TOK

KURZFASSUNG

Vier Exemplare des Geckos *Mediodactylus kotschyi bolkarensis* (RÖSLER, 1994) wurden in Karapınar (Provinz Konya, Türkei), etwa 50 km nordwestlich des bekannten Vorkommens der Unterart gefunden. Die beiden adulten Männchen und Weibchen des neuen Fundortes wurden hinsichtlich der Merkmale ihrer Pholidose, Färbung und Zeichnung untersucht und mit 26 adulten Exemplaren (11 Männchen, 15 Weibchen) aus Ereğli (Provinz Konya, TR), der Typuslokalität der Unterart *bolkarensis*, verglichen. Das gesamte neue Material von *M. k. bolkarensis* wird hinsichtlich seiner metrischen, meristischen, Färbungs- und Zeichnungsmerkmale charakterisiert, welche publizierten Daten von sechs benachbarten Unterarten von *M. kotschyi* gegenübergestellt werden.

ABSTRACT

Four specimens of the gecko, *Mediodactylus kotschyi bolkarensis* (RÖSLER, 1994), were found in Karapınar (Province of Konya, Turkey), about 50 km north west of the known range. Two male and two female adult specimens collected from this new locality were examined in detail for their pholidosis and color pattern features, and compared with 26 adult (11 male, 15 female) specimens recently collected from Ereğli (Province of Konya, TR), the type locality of the subspecies *bolkarensis*. The comprehensive new materials of *M. k. bolkarensis* are characterized with regard to metric, meristic and color-pattern traits which are presented in comparison to published data of six neighboring subspecies of *M. kotschyi*.

KEYWORDS

Reptilia: Sauria: Squamata: Gekkonidae; *Mediodactylus kotschyi bolkarensis*; morphology, new records, distribution, Konya, Turkey, central Anatolia

INTRODUCTION

The Mediterranean Thin-toed Gecko, *Mediodactylus kotschyi* (STEINDACHNER, 1870), faunal element of the Palearctic ecozone, is distributed in southeastern Italy, the Balkans, south Crimea, northwestern Iran, Syria, Lebanon, northern Israel, Cyprus, the Aegean Islands and Anatolia (BEUTLER 1981; KASAPIDIS et al. 2005; SINDACO & JEREMCENKO 2008). According to the lists provided by RÖSLER (2000), DE LISLE et al. (2013) and UETZ et al. (2016), *Mediodactylus kotschyi* is represented by 27-30 nominal

subspecies, nine of them occurring on the islands and the mainland of Turkey.

VENZMER (1919, 1922) and BIRD (1936) recorded a few samples of *M. kotschyi* from the Bolkar Mountains and southern Anatolia in Turkey, without providing information about their subspecific status. BODENHEIMER (1944) classified all records obtained from west, south and central Anatolia as *M. k. steindachneri* (STEPÁNEK, 1937). Also, he pointed out that specimens from Cilicia (around Seyhan and

Table 1 (this and opposite page): Descriptive statistics of the pholidosis counts of *Mediodactylus kotschy bolharensis* (RÖSLER, 1994) from Ereğli and Karapınar.

C – Character, DTR – longitudinal series of dorsal tubercles, IN – internasals, IO – interorbitals, LZ4 – subdigital lamellae under the 4th toe, Max – Maximum, Me – Median, Min – Minimum, Mo – Mode, N – sample size, PKT – postcloacal tubercles, PM – postmentals, PP – precloacal pores, SBL – sublabials, SD – Standard Deviation, SDL – scales between dorsal tubercles, counted in longitudinal direction at midbody, SDQ – scales between dorsal tubercles, counted in transversal direction at midbody, SE – Standard Error of the mean, SPL – supralabials, T3W – tubercles on the third tail whorl, V – ventral longitudinal scale rows counted at midbody.

C	Ereğli ♂♂							Ereğli ♀♀							Ereğli ♂♂+♀♀		
	N	Mean	Min	Max	SD	SE	Me-Mo	N	Mean	Min	Max	SD	SE	Me-Mo	N	Mean	Min
SPL	11	7.91	7	8	0.30	0.09	8-8	15	7.67	7	8	0.48	0.12	8-8	26	7.77	7
SBL	11	7.18	7	8	0.40	0.12	7-7	15	6.93	6	7	0.25	0.06	7-7	26	7.04	6
IN	11	4.27	4	5	0.46	0.14	4-4	15	3.93	3	5	0.59	0.15	4-4	26	4.08	3
IO	11	16.27	15	17	0.64	0.19	16-16	15	16.27	14	18	1.10	0.28	16-16	26	16.27	14
PM	11	2.27	2	3	0.46	0.14	2-2	15	2.13	2	3	0.35	0.09	2-2	26	2.19	2
DTR	11	10.91	10	12	0.70	0.21	11-11	15	10.80	9	12	1.01	0.26	11-11	26	10.85	9
SDL	11	1.73	1	2	0.46	0.14	2-2	15	2.00	2	2	0.00	0.00	2-2	26	1.88	1
SDQ	11	2.00	2	2	0.00	0.00	2-2	15	2.00	2	2	0.00	0.00	2-2	26	2.00	2
V	11	21.27	20	23	1.00	0.30	21-21	15	21.73	21	23	0.88	0.22	21-21	26	21.54	20
LZ4	11	17.36	15	19	1.12	0.33	18-18	15	17.33	15	19	1.04	0.27	17-17	26	17.35	15
T3W	7	4.00	4	4	0.00	0.00	4-4	9	4.00	4	4	0.00	0.00	4-4	16	4.00	4
PKT	11	1.00	1	1	0.00	0.00	1-1	15	1.00	1	1	0.00	0.00	1-1	26	1.00	1
PP	11	2.18	1	4	0.87	0.26	2-2	-	-	-	-	-	-	11	2.18	1	

(*) – 16,17-16,17; (**) – 16,18-18

Mersin) could be related with the subspecies *syriacus* (STEPÁNEK, 1937). According to MERTENS (1952) *M. kotschy* is represented by more than two subspecies in Turkey. He reported *M. k. steindachneri* to occur in Adana, *M. k. orientalis* (STEPÁNEK, 1937) in Gaziantep, *M. k. syriacus* (STEPÁNEK, 1937) in Narlıca (Diyarbakır) and *M. k. bureschi* (STEPÁNEK, 1937) [synonym of *danilewskii* (STRAUCH, 1887)] in İstanbul and described the subspecies *lycaonicus* (MERTENS, 1952) from Konya on the basis of a single specimen. BEUTLER & GRUBER (1977) assigned the subspecific epithet *danilewskii* (not *bureschi*) to the specimens of Turkish Thrace and reported that the taxonomic status of the subspecies *steindachneri*, *syriacus* and *orientalis*, and specimens collected from the heights of Cilicia in Anatolia (Bolkar Mountains and Gülek Pass) could not be clarified definitely.

Due to the many referenced diverging opinions, BARAN & GRUBER (1982) did a comparative examination of *M. kotschy* populations in various regions in Turkey. In that study, the taxonomic status of the populations in western, central and southern Anatolia was re-evaluated and the subspecies *steindachneri* and *lycaonicus* were perceived as synonyma of *M. k. danilewskii*.

In the above paper, the new subspecies *ciliensis* was described from the coastal area of the Turkish Mediterranean region (between Manavgat and Silifke). Later, the population of *M. kotschy* in and around the Bolkar Mountains, the systematic status of which was considered unclear by BEUTLER & GRUBER (1977), was attributed the status of a distinct subspecies, *M. k. bolharensis*, by RÖSLER (1994). In recent years, a few specimens collected from Çiftelhan (Niğde) by RÖSLER et al. (2012) were included in the little known subspecies *bolharensis*, thereby expanding southward the subspecies' distribution, which was previously thought to be limited to the northern slopes of the Bolkar Mountains.

In the present study, the taxonomic status of four *M. kotschy* specimens collected at Karapınar (Province of Konya, TR) in the west of Ereğli (Province of Konya, TR) is evaluated by morphological comparison with specimens of the geographically closest subspecies *M. k. bolharensis*. Since the number of individuals from Ereğli available for comparison was limited, additional specimens of *M. k. bolharensis* were collected from that locality and their morphology and colorpattern features examined in detail.

Tab. 1 (diese und gegenüberliegende Seite): Deskriptive Statistiken der Pholidosezählwerte von *Mediodactylus kotschyi bolkarensis* (RÖSLER, 1994) aus Ereğli und Karapınar, Konya, TR.

C – Merkmal, DTR – Rückentuberkel-Längsreihen, IN – Internasalia, IO – Interorbitalia, LZ4 – Subdigital-lamellen unter der vierten Zehe, Max – Maximum, Me – Median, Min – Minimum, Mo – Modalwert, N – Stichprobengröße, PKT – Postkloakaltuberkel, PM – Postmentalia, PP – Präkloakalporen, SBL – Sublabialia, SD – Standardabweichung, SDL – Schuppen zwischen Tuberkeln der Rumpfmittle, in Körperlängsrichtung gezählt, SDQ – Schuppen zwischen Tuberkeln der Rumpfmittle, quer zur Körperlängsrichtung gezählt, SE – Standardfehler, SPL – Supralabialia, T3W – Tuberkel auf dem dritten Schwanzwirtel, V – Ventralia-Längsreihen in Körpermittle gezählt.

	Ereğli ♂♂+♀♀				Karapınar ♂♂			Karapınar ♀♀			Karapınar ♂♂+♀♀						
C	Max	SD	SE	Me-Mo	N	Min	Max	N	Min	Max	N	Mean	Min	Max	SD	SE	Me-Mo
SPL	8	0.43	0.08	7-7	2	8	8	2	8	8	4	8.00	8	8	0.00	0.00	8-8
SBL	8	0.34	0.06	7-7	2	7	8	2	7	7	4	7.25	7	8	0.50	0.25	7-7
IN	5	0.56	0.11	4-4	2	4	4	2	4	4	4	4.00	4	4	0.00	0.00	4-4
IO	18	0.91	0.18	16-16	2	16	17	2	15	17	4	16.25	15	17	0.95	0.47	(*)
PM	3	0.40	0.07	2-2	2	2	2	2	2	3	4	2.25	2	3	0.50	0.25	2-2
DTR	11	0.88	0.17	11-11	2	11	11	2	10	11	4	10.00	10	11	0.50	0.25	11-11
SDL	2	0.32	0.06	2-2	2	2	2	2	2	2	4	2.00	2	2	0.00	0.00	2-2
SDQ	2	0.00	0.00	2-2	2	2	2	2	2	2	4	2.00	2	2	0.00	0.00	2-2
V	23	0.94	0.18	21-21	2	21	22	2	22	23	4	22.00	21	23	0.81	0.40	22-22
LZ4	19	1.05	0.20	17-17	2	15	18	2	16	18	4	16.75	15	18	0.50	0.25	(**)
T3W	4	0.00	0.00	4-4	2	4	4	2	4	4	4	4.00	4	4	0.00	0.00	4-4
PKT	1	0.00	0.00	1-1	2	1	1	2	1	1	4	1.00	1	1	0.00	0.00	1-1
PP	4	0.87	0.26	2-2	2	1	4	-	-	-	2	-	1	4	-	-	-

(*) – 16,17-16,17; (**) – 16,18-18

MATERIALS AND METHODS

All 30 specimens examined in the study were collected during field studies conducted in August 2010 and 2011. The materials are stored in the Zoology Museum of Celal Bayar University, Manisa, TR (CBZM).

Four *M. kotschyi* specimens of initially unclear taxonomic allocation were collected from stone walls in the evening hours in Karapınar, 98 km southeast of Konya (CBZM 46/2011, 1-2 ♂♂, 3-4 ♀♀, Karapınar, Konya, 10.08.2011, leg. M. AFSAR, 37.71783 N, 33.48923 E, 1.026 m a.s.l.). Twenty-six vouchers of *M. k. bolkarensis* (CBZM 45/2011, 1-6 ♂♂, 7-12 ♀♀, 13 ♂, 14-20 ♀♀, 21 ♂, 22-23 ♀♀, 24-26 ♂♂, Ereğli, Konya, 10.08.2010, leg. M. AFSAR, 37.55080 N, 34.05157 E, 1.085 m a.s.l.) were collected from the type locality.

The following 13 meristic characters were taken in accordance with BEUTLER & GRUBER (1977), BARAN (1980), BARAN & GRUBER (1982) and RÖSLER et al. (2012): SPL – number of supralabials, SBL – sublabials (= infralabials), IN – internasals, counted according to BARAN (1980), IO – interorbitals, PM – postmentals, DTR – longitudinal series of dorsal tubercles, SDL – scales between dorsal tubercles, counted in

longitudinal direction at midbody, SDQ – scales between dorsal tubercles, counted in transversal direction at midbody, V – longitudinal ventral scale rows at midbody, LZ4 – subdigital lamellae of the fourth toe, T3W – tubercle rows in the third caudal whorl, PKT – postcloacal tubercles, PP – precloacal pores. Bilateral features were counted on the left body side. Metric body measurements (TL – tail length, SVL – snout-vent length, HL – head length, HW – head width, DTL – length of a dorsal tubercle, DTW – width of dorsal tubercle, NA – distance from posterior edge of nare to anterior edge of eye, AO – distance of posterior edge of eye to anterior edge of ear), were taken with a digital caliper (accuracy 0.01 mm).

Mean values were calculated from meristic counts for comparison to results of earlier publications (Tables 1-3). Kolmogorov-Smirnov tests were applied to check for normality of the data, and intraspecific sexual differences in the pholidosis features analyzed. No differences were found between sexes (K-S test, $P > 0.05$) except for the presence of precloacal pores in males. Thus, apart from this latter trait, male and female specimens were evaluated together.

Table 2: Descriptive statistics (minimum – maximum, arithmetic mean in parentheses) of pholidosis characters of the studied specimens of *Mediodactylus kotschyi bolkarensis* (RÖSLER, 1994) from Karapınar and Ereğli in comparison with corresponding literature data for six *M. kotschyi* subspecies of the region. HS – Head scales, DOR – dorsal scales (sm – most are smooth, ke – most are keeled), ST – scales on ventral side of tibia (sm – most are smooth, ke – most are keeled). For other abbreviations in column one, see legend of Table 1. m – mostly, r – rarely.

Tab. 2: Deskriptive Statistiken (Minimum – Maximum, arithmetisches Mittel in Klammern) von Pholidosemerkmalen der untersuchten Exemplare von *Mediodactylus kotschyi bolkarensis* (RÖSLER, 1994) aus Karapınar und Ereğli im Vergleich zu entsprechenden Literaturdaten für sechs *M. kotschyi* Unterarten aus dem Gebiet. HS – Kopfschuppen, DOR – Rückenschuppen (sm – mehrheitlich glatt, ke – mehrheitlich gekielt), ST – Schuppen auf der Ventralseite der Tibia (sm – mehrheitlich glatt, ke – mehrheitlich gekielt). Die übrigen Abkürzungen in Spalte eins sind in der Legende zu Tabelle 1 erklärt. m – meist, r – selten.

Character	This study / Diese Studie		RÖSLER et al. (2012)						BARAN & GRUBER (1981*, 1982*)					
	<i>M. k. bolkarensis</i> Karapınar N = 4	Ereğli N = 26	<i>M. k. bolkarensis</i> N = 5	<i>M. k. ciliciensis</i> N = 13	<i>M. k. danilewskii</i> N = 2	<i>M. k. syriacus</i> N = 38	<i>M. k. danilewskii</i> ⁺ N = 23	<i>M. k. ciliciensis</i> ⁺ N = 12	<i>M. k. ponticus</i> ⁺ N = 25	<i>M. k. beutleri</i> [*] N = 282				
SPL	8-8 (8.0)	7-8 (7.77)	6-9 (7.44)	6-9 (8.12)	8-9	6-10 (8.07)	7-10	8-9	m 8-9	m 9				
SBL	7-8 (7.25)	6-8 (7.04)	6-8 (6.33)	6-8 (6.92)	7	5-8 (6.51)	-	7-8	m 7-8, r 6	8				
IN	4	3-5 (4.08)	1-3 (1.80)	0-3 (1.23)	1-3	0-2 (1.18)	m 3-4, r 2-5	m 3, r 5	m 3, r 4-5	m 4, r 3-5				
IO	15-17 (16.25)	14-18 (16.27)	14-17 (15.5)	14-18 (15.77)	15-17	11-20 (16.21)	-	-	-	-				
HS	sm	sm	sm	ke	sm	ke	sm	ke	sm	sm				
PM	2-3 (2.25)	2-3 (2.19)	2	2-4 (2.31)	2	2-4 (2.18)	-	-	-	-				
DTR	10-11 (10.75)	9-12 (10.85)	8-14 (11.20)	11-14 (13.0)	10-11	10-15 (11.76)	12	12	12 (10-14)	12				
SDL	m 2	m 2	m 2	m 1-2	m 1-2	m 1-2	m 3, r 1-3	M 1, r 2	m 2, r 1-3	m 3, r 1-3				
SDQ	m 2	m 2	m 2	m 1-2	m 2-3	m 2	m 3, r 2-4	m 1, r 2	m 3, r 2-4	m 3, r 2-4				
DOR	sm	sm	sm	ke	sm	sm	-	-	-	-				
V	21-23 (22.00)	20-23 (21.54)	19-22 (20.67)	20-29 (23.33)	25-26	19-28 (22.71)	24-30 (26.48)	23-26 (23.83)	26-31 (29.24)	26-33 (30.09)				
ST	sm	sm	sm	ke	sm	sm	sm	ke	sm	sm				
LZ4	15-18 (16.75)	15-19 (17.35)	14-19 (16.75)	13-19 (15.50)	20-23	15-20 (17.63)	19-24 (21.61)	14-18 (15.5)	17-21 (19.19)	17-23 (20.6)				
PP	1-4 (N = 2)	1-4 (2.18)	4	3 (N = 1)	7-9	2-5 (3.10)	6-12 (8.46)	2 (N = 5)	2-5 (3.5)	1-6 (3.8)				
PKT	1-1	1-1	1-2 (1.11)	1-2 (1.08)	1	1-2 (1.04)	m 1-1	1-1	m 1-1	m 2-2				
T3W	4	4	4-6	6	-	6	-	-	-	-				

Table 3: Descriptive statistics (minimum – maximum arithmetic mean in parentheses) of metric measurements and ratios of the studied specimens of *Mediodactylus kotschy bolkarensis* (ROSLER, 1994) from Karapınar and Ereğli in comparison with corresponding literature data for six *M. kotschy* subspecies present in the region. SVL – snout-vent-length, TL – tail length, HL – head length, HW – head width, DTL – length of a dorsal tubercle, DTW – width of dorsal tubercle, NA – distance of posterior edge of nare to anterior edge of eye, AO – distance of posterior edge of eye to anterior edge of ear opening.

Tab. 3: Deskriptive Statistiken (Minimum – Maximum, arithmetisches Mittel in Klammern) von metrischen Merkmalen der untersuchten Exemplare von *Mediodactylus kotschy bolkarensis* (ROSLER, 1994) aus Karapınar und Ereğli im Vergleich zu entsprechenden Literaturdaten für sechs *M. kotschy* Unterarten aus dem Gebiet. SVL – Kopf-Rumpf-Länge, TL – Schwanzlänge, HL – Kopfgröße, HW – Kopfbreite, DTL – Länge der Dorsaltuberkel, DTW – Breite der Dorsaltuberkel, NA – Entfernung vom Nasenlochlitterand bis zum Augenvorderrand, AO – Entfernung vom Augenhinterrand bis zum Vorderrand der Ohröffnung.

Character Merkmal	This study / Diese Studie		ROSLER et al. (2012)			BARAN & GRUBER (1981*, 1982 ¹⁾)				
	Karapınar N = 4	<i>M. k. bolharensis</i> Ereğli N = 26	<i>M. k. bolharensis</i> N = 5	<i>M. k. cilicciensis</i> N = 13	<i>M. k. danilewskii</i> N = 2	<i>M. k. syriacus</i> N = 38	<i>M. k. danilewskii</i> N = 23	<i>M. k. cilicciensis</i> N = 12	<i>M. k. ponticus</i> N = 25	<i>M. k. beutleri</i> N = 282
SVL	30.6-39.8 (35.74)	30.5-43.4 (37.50)	22.7-35.1 (31.18)	18.0-38.7	36.3-37.0	24.9-42.4 (35.24)	35-46	31-36	37-43	45.0
TL	31.4-42.1 (37.82)	36.0-44.4 (40.21)	34.4	18.7-39.2 (27.71)	-	27.2-45.6 (35.75)	37-54	37-38	42-49	51.0
HL	7.9-10.4 (9.20)	7.8-10.6 (9.58)	6.2-10.0 (8.76)	4.1- 9.7 (7.96)	9.7	7.2-11.4 (9.44)	-	-	-	-
HW	6.1-7.7 (6.66)	5.8-7.8 (6.81)	4.4-8.2 (6.80)	3.6-7.9 (6.22)	7.6- 7.8	5.8-8.9 (7.45)	-	-	-	-
DTL	0.4-0.6 (0.51)	0.5-0.7 (0.54)	0.4-0.6	0.4-0.7 (0.53)	0.6	0.5-1.0 (0.74)	-	-	-	-
DTW	0.4-0.6 (0.47)	0.3-0.6 (0.48)	0.3-0.6	0.3-0.7 (0.50)	0.6-0.7	0.4-0.9 (0.63)	-	-	-	-
SVL/TL	0.9-1.0 (0.94)	0.9-1.0 (0.94)	0.9	0.9-1.2 (1.01)	-	0.9-1.9 (0.95)	-	0.9 - 1.0	0.8-0.93	0.81-1.00
SVL/HL	3.8-4.0 (3.88)	3.8-4.1 (3.91)	3.2-3.4 (3.58)	3.2-4.1 (3.58)	3.7-3.8	3.5-4.0 (3.73)	-	-	-	-
HL/HW	1.3-1.4 (1.38)	1.3-1.5 (1.39)	1.2-1.4 (1.30)	1.2-1.6 (1.34)	1.2-1.3	1.0-1.5 (1.27)	-	-	-	-
NAA/O	0.7-1.0 (0.86)	0.7-1.0 (0.78)	0.9-1.1 (1.00)	1.9-1.2 (1.02)	1.1-1.1	1.0-1.3 (1.07)	-	-	-	-
SVL/DTL	65.2-79.6 (69.98)	56.4-83.9 (69.30)	61.1-64.9	50.6-69.4 (55.94)	60.5-61.7	40.7-58.5 (47.76)	-	-	-	-



Fig. 2: Ventral view of *M. kotschy bolkarensis* (RÖSLER, 1994), female from Ereğli, Konya, TR (CBZM 45/2011-7).

Abb. 2: Ventralansicht von *Mediodactylus kotschy bolkarensis* (RÖSLER, 1994), Weibchen aus Ereğli, Konya, TR (CBZM 45/2011-7)



Fig. 3: Dorsal view of *M. kotschy bolkarensis* (RÖSLER, 1994), female from Karapınar, Konya, TR (CBZM 46/2011-3).

Abb. 3: Dorsalansicht von *Mediodactylus kotschy bolkarensis* (RÖSLER, 1994), Weibchen aus Karapınar, Konya, TR (CBZM 46/2011-3).

Karapınar (Konya) specimens (New locality)

Materials: CBZM 46/2011, 1-2 ♂♂, 3-4 ♀♀, Karapınar, Konya, 10.08.2011, leg. M. AFSAR.

Morphological characters: The authors analyzed the character states of four (2 male, 2 female) adult specimens of *M. kotschy* from the new locality Karapınar. For metric measurements, pholidosis counts and subspecific comparisons see Tables 1 - 3. IN – 4 in all specimens. SPL – 8 in all specimens. SBL – 7,7,7,8. First pair of submaxillary shields adjoining each other in three specimens, separated in one. Dorsal

tubercles oval-shaped, relatively small and feebly keeled. DTR – 10,11,11,11. Most dorsal tubercles are separated by two scales, few by one. SDL – mostly two. V – 21,22, 22,23 ($\bar{x}$ = 22). PP – 1, 4. PKT – 1 on either side. T3W – 4 in all specimens. LZ4 – 15, 16,18,18. The subcaudals are arranged in a series of large, smooth scales alternating with smaller paired scales.

All specimens are of light or dark greenish-gray dorsal color. In two individuals dark transversal zig-zag stripes, arranged just like the specimens from Ereğli, are well visible on the anterior back, becoming irregular in the middle and posterior portion. In one specimen, the lines on

the back are irregular and broken with blurred borders reticularly contacting each other in an unusual manner (Fig. 3). In one specimen, stripes are rare on the trunk but distinctly present on the tail from its base.

In all specimens, these stripes are noticeably indistinct. The ventral side of all specimens is dirty white with sparse black spots (Fig. 2).

DISCUSSION

Twenty-six *M. kotschy* specimens collected from Ereğli, the type locality of *M. k. bolharensis* and analyzed as to their pholidosis features in comparison with previous studies (BARAN & GRUBER 1981, 1982; RÖSLER 1994; RÖSLER et al. 2012) did not differ substantially from the diagnosis in RÖSLER's (1994) original description. This author reported this sub-species to differ from other continental subspecies and transition forms by the reduced number of 4 (instead of 6) tubercles per caudal whirl, at least in the proximal third of the tail. In the present sample, their number was four in all specimens as was found for Ereğli specimens by RÖSLER et al. (2012). They furthermore reported that *M. k. bolharensis* is distinguished from the east Aegean – southwest Anatolian *M. k. beutleri* (BARAN & GRUBER, 1981) and the northeast Anatolian *M. k. colchicus* (NIKOLSKY, 1902) by the reduced number of longitudinal rows of ventral scales. In the present sample, the variation was 20-23 ($\bar{x} = 21.54$) in Ereğli and 21-23 ($\bar{x} = 22$) in Karapınar individuals, which is within the limits of the subspecies *bolharensis* (19-22, $\bar{x} = 20.67$) given by RÖSLER et al. (2012). The number of precloacal pores, which distinguishes subspecies, varied between 1-4 ($\bar{x} = 2.18$) in 11 male specimens in the current study, which on the average is less than in *M. k. ponticus* (BARAN & GRUBER, 1982) (2-5, $\bar{x} = 3.5$) distributed in central north Anatolia east of the subspecies *M. k. danilewskii* (STRAUCH, 1887) (6-12 in BARAN & GRUBER 2012). Regarding the average number of precloacal pores, *M. k. bolharensis* is closest to *M. k. fitzingeri* (STEPÁNEK, 1937) (2-3, $\bar{x} = 2.50$) from Cyprus island.

The maximum snout-vent-length reported for the subspecies *bolharensis* was 35.10 mm (RÖSLER et al. 2012). Specimens of the current study clearly exceeded this

value (Ereğli: 43.41 mm, $\bar{x} = 37.50$ mm; Karapınar: 39.81 mm, $\bar{x} = 35.74$ mm).

BARAN & GRUBER (1981, 1982) reported that the number of internasalia is 2-5 (most frequently 3-4) in *M. k. danilewskii* (STRAUCH, 1887), 3-5 (most frequently 3) in *M. k. ciliciensis* (BARAN & GRUBER 1982), 4-5 (most frequently 3) in *M. k. ponticus* (BARAN & GRUBER 1982), and 3-5 (most frequently 4) in *M. k. beutleri*, whereas, RÖSLER et al. (2012) reported 1-3 in *M. k. danilewskii*, 0-3 ($\bar{x} = 1.23$) in *M. k. ciliciensis*, 0-2 ($\bar{x} = 1.18$) in *M. k. syriacus*, and 1-3 ($\bar{x} = 1.80$) in *M. k. bolharensis* (Table 2). In the present specimens from Ereğli and Karapınar, the number of internasals, counted according to BARAN (1980), varied between 3-5 ($\bar{x} = 4.08$) and by that did not differ from other subspecies examined by BARAN & GRUBER (1981, 1982) in Turkey (Table 2). The authors think that different internasal shield value ranges given in the literature for one and the same subspecies are due to different counting methods rather than morphological differences. Comparative morphometric data of six neighboring subspecies of *M. kotschy* are summarized in Tables 2 and 3.

Diverging opinions were presented by BARAN & GRUBER (1982) and BARAN & ATATÜRK (1998) as to which subspecies of *M. kotschy* is represented in the area of Konya, in the south of central Anatolia. Subsequent, researchers followed BARAN & GRUBER (1982) who classified MERTENS's (1952) type of *lycaonicus* as a specimen introduced to Konya from southern Anatolia, and *M. k. lycaonicus* as a synonym of *M. k. danilewskii* (ŠČERBAK & GULUBEV 1996; RÖSLER 2000; SINDACO et al. 2000; SINDACO & JEREMČENKO 2008). In fact, BARAN & GRUBER (1982) and ŠČERBAK & GULUBEV (1996) reported the range area of *M. k. danilewskii* to be not only Thrace and northwestern Anatolia but also (names of the provinces in

parentheses) more central Anatolian localities such as Afyon, Şuhut (Afyonkarahisar), Ankara (Ankara) Eğridir (Isparta), Konya (Konya) and Akseki (Antalya). The authors' present findings on the morphology of the Karapınar specimens' color-pattern, counts of dorsal tubercles, precloacal pores, subdigital lamellae on the fourth toe and tubercles in the whirls of the proximal third of the tail are in concordance with the specimens collected from Ereğli, the type locality of *M. k. bolharensis*, casting doubt on the synonymy of *lycaonicus* and *danilewskii*.

In conclusion, four specimens of *M. kotschyi* were collected from a distributional knowledge gap in the southeastern Konya region in central Anatolia, extending the known range area of *M. k. bolharensis* 50 km northwest towards Karapınar. Another 26 individuals were collected from the type locality of *M. k. bolharensis*, to describe their color-pattern features, metric and meristic characters based on a sample of adequate size providing detailed morphological information.

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AUTHORS: Murat AFSAR (Corresponding author < muratafsar6@hotmail.com >) ¹⁾, Kerim ÇİÇEK ²⁾ & Cemal Varol Tok ³⁾

¹⁾ Department of Biology, Faculty of Arts and Sciences, Celal Bayar University, Manisa, Turkey.

²⁾ Zoology Section, Department of Biology, Faculty of Science, Ege University, 35100, Izmir, Turkey.

³⁾ Department of Biology, Faculty of Arts and Sciences, Çanakkale Onsekiz Mart University, 17100, Çanakkale, Turkey.

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