

# Morphology, taxonomic status and distribution of *Trachylepis aurata* (LINNAEUS, 1758) in southeast Anatolia (Squamata: Sauria: Scincidae)

Morphologie, taxonomischer Status und Verbreitung  
von *Trachylepis aurata* (LINNAEUS, 1758) in Südostanatolien  
(Squamata: Sauria: Scincidae)

SALIH HAKAN DURMUŞ & YUSUF KUMLUTAŞ & ADEM ÖZDEMİR  
& AZİZ AVCI & ÇETİN ILGAZ

## KURZFASSUNG

Die vorliegende Untersuchung präsentiert Angaben über Pholidosezählwerte, morphometrische Messungen und Längenverhältnisse sowie Färbungs- und Zeichnungsmerkmale südostanatolischer Individuen von *Trachylepis aurata* (LINNAEUS, 1758). Die Befunde werden mit Literaturdaten von Exemplaren aus anderen Teilen der Türkei verglichen. Das aus der Türkei berichtete Vorkommen von *Trachylepis septemtaeniata* (REUSS, 1834) wird diskutiert.

## ABSTRACT

The present morphological study details meristic (pholidosis), morphometric (measurements, ratios) and color-pattern features of *Trachylepis aurata* (LINNAEUS, 1758) collected from southeast Anatolia, Turkey. The results are compared with literature data obtained from specimens of other Anatolian regions. The occurrence of *Trachylepis septemtaeniata* (REUSS, 1834) reported from Turkey, is discussed.

## KEY WORDS

Reptilia: Squamata: Sauria: Scincidae *Trachylepis aurata*, *Trachylepis septemtaeniata*, pholidosis, morphology, color-pattern; southeast Anatolia, Turkey

## INTRODUCTION

The lizard family Scincidae (skinks), one of the largest families of squamate reptiles, is thought to have originated in Africa and then diversified and spread through Asia and Australia to its current worldwide distribution (GREER 1970; WHITING et al. 2006). The family Scincidae currently contains more than 1,300 species grouped in over 85 genera. About 100 species of these were assigned to the genus *Mabuya* (sensu GREER 1970) (BAUER 1992; MAUSFELD et al. 2002; RASTEGAR-POUYANI 2006). MAUSFELD et al. (2002) partitioned the collective genus *Mabuya* FITZINGER, 1826, into four genera: Asian species were placed in *Eutropis* FITZINGER, 1843, African and Malagasy species in *Euprepis* WAGLER, 1830 [and subsequently *Trachylepis* FITZINGER, 1843 (BAUER 2003)], species from the Cape Verde Islands became *Chioninia* GRAY, 1845, again, where-

as, the South American species retained the name *Mabuya*. According to MAUSFELD & SCHMITZ (2003), the Turkish species and all Near East species of the former collective genus *Mabuya* belong to the Afro-Malagasy clade [viz. *Trachylepis*].

Three species of the genus *Trachylepis* are found in the south and east of Turkey, *Trachylepis aurata* (LINNAEUS, 1758), *T. septemtaeniata* (REUSS, 1834) and *T. vittata* (OLIVIER, 1804). *Trachylepis aurata*, the Golden Grass Skink, was first described from "Jersea Anglorum, Cypro" [British Island of Jersey and Cyprus] (LINNAEUS 1758). Later, the type locality of *T. aurata* was emended to Asia Minor (MORAVEC et al. 2006). Western, central, southern and southeastern Anatolia, and adjacent Greek islands (Kastellorizo, Kos, Rhodos, Samos, Simi), constitute the northwestern range area of this

skink (MERTENS 1924; BIRD 1936; MERTENS 1952; CLARK & CLARK 1973; BARAN 1977; YILMAZ 1977; BAŞOĞLU & BARAN 1977; CHONDROPOULOS 1986; BARAN & ATATÜR 1998; TOK 1999; SINDACO et al. 2000; KUM-LUTAŞ et al. 2004; MORAVEC et al. 2006).

However, various researchers (WERNER 1902; BIRD 1936; MERTENS 1924, 1952; BODENHEIMER 1944; BARAN 1977; YILMAZ 1977; MORAVEC et al. 2006) expressed different opinions about the taxomic status of the Turkish specimens. MERTENS (1924) assigned a specimen from Mardin to the nominate form. BIRD (1936) examined specimens captured from İzmir, Alaşehir, the Bulgar Mountains and Mardin (MERTENS's specimen). According to his opinion, western Anatolian specimens represented what he named *T. septemtaeniata fellowsi*, and the Mardin specimen *T. aurata aurata*. MERTENS (1952) however, declared

that no other subspecies than the nominate form inhabited Turkey, and BARAN (1977), YILMAZ (1977), TOK (1999) and KUMLUTAŞ et al. (2004) agreed on this opinion. Recently, the subspecies *septemtaeniata* was elevated to species level, which, along with the changing of its generic assignment, resulted in the name *Euprepis septemtaeniata* (MAUSFELD & SCHMITZ 2003). In the same year, BAUER (2003) found the name *Euprepis* to be invalid and replaced it by *Trachylepis*. Finally MORAVEC et al. (2006) observed that *T. aurata* and *T. septemtaeniata* shared the same biotope (sympatric occurrence) in the surroundings of Birecik, Şanlıurfa, southeastern Anatolia.

The present paper presents and discusses meristic (pholidosis), and metric (body proportions) characters and color-pattern features of *T. aurata* from southeastern Anatolia.

## MATERIALS AND METHODS

This study is based on a total of 53 specimens of *T. aurata* (18 males, 22 females and 13 juveniles, for details see Appendix), collected from different localities in southeast Anatolia (Fig. 1) in the period 2001-2006. Color and pattern characteristics were recorded and color slides were taken while the animals were alive. Pattern terminology is in accordance to SCHREIBER (1912: 334). The specimens were anaesthetized with ether, fixed with a 1:1 mixture 5% formalin and 70% ethanol, and later kept in 70% ethanol according to the method described by BAŞOĞLU & BARAN (1977). The specimens were incorporated into the collection of ZDEU (Zoology Department of Ege University, Buca-İzmir, Turkey) and stored in the Zoology Lab of the Department of Biology at Buca Education Faculty.

**Metric data.** - The following morphometric measurements were taken using dial calipers with an accuracy of 0.02 mm: Snout-vent Length (SVL), tip of snout to anal cleft; Tail Length (TL), anal cleft to the tip of tail; Head Length<sub>a</sub> (HL<sub>a</sub>), from rostrum to end of interparietal shield; Head Length<sub>b</sub> (HL<sub>b</sub>), from rostrum to anterior margin of ear opening; Head Width (HW), at widest point of head; Distance between

Nostrils (DN); Hindlimb Length (HLL), outstretched limb from hip joint to tip of toe; Forelimb Length (FLL), outstretched limb from shoulder joint to tip of toe; Distance between the insertions of Fore and Hindlimb (DFH). From these measurements, the following ratios were calculated: TL/SVL; SVL/FLL; SVL/HLL; SVL/HL<sub>a</sub>; SVL/HL<sub>b</sub>; SVL/HW; HL/HW.

**Meristic and dichotomous data.** - Pholidosis characteristics considered here comprised the following counts: nuchal plates, upper labials (left-right), supraciliar plates (left-right), number of longitudinal dorsal scale rows around midbody (ventral side included) (DS), gular scales plus ventral scales along ventromedian line (GS), subdigital lamellae (SDL<sub>a</sub>, SDL<sub>b</sub>) underneath fourth toe of hind leg (left-right), contact between third supraocular plate and frontal plate absent or present.

In order to compare similarities and differences between sexes, an independent t-test was applied to the counts and measurements of the examined specimens ( $\alpha = 0.05$  significance). Statistical analyses were carried out using the program SPSS 11.0. (SPSS Inc., 1989-2001).

## RESULTS

**Morphometric measurements.-** The descriptive statistics of the morphometric measurements are summarized in Table 1. Maximum SVL and TL of a specimen with intact tail were 102.8 and 244.5 mm, respectively (a male). According to independent t-tests, no significant differences between male and female specimens were found in metric measurements except DFH. The means of DFH were 44.0 and 47.6 mm for male and female specimens, respectively (Table 1).

**Meristics (pholidosis counts).-** Two nuchals (100%); four upper labials anterior and two posterior to subocular (100%); fifth and sixth lower labials under the subocular (in 52 out of 53 specimens; 98.2%); supraciliaria (left/right side): 5/5 (32 of 53; 60.4%), 4/4 (10 of 53; 18.9%), 4/5 (6 of 53; 11.3%), 5/4 (2 of 53; 3.8%), 5/3 (1 of 53; 1.9%), 5/6 (1 of 53; 1.9%) and 6/5 (1 of 53;

1.9%); third supraocular in contact with the frontal shield in 14 (26.4%) specimens (both on left and right side) and in 10 (18.9%) specimens (only one side). Third supraocular separated from the frontal in 29 (54.7%) specimens (Fig. 2). The contact situation between third supraocular and frontal of the specimens is presented in Table 2. The number of lamellae underneath the fourth hind leg toe (SDL<sub>a</sub> and SDL<sub>b</sub>) varied between 16 and 21 with a mean value of 18.6 in both sides ( $n$ : 53, 1st quartile: 18, median: 19, mode: 19 and 3rd quartile: 19). The number of gular plus ventral scales along the ventromedian line from mental shield to vent (GS) ranged from 57 to 71 with a mean of 64.4 ( $n$ : 53, 1st quartile: 62.5, median: 64, mode: 63 and 3rd quartile: 67). The number of longitudinal scale rows around mid-body (ventral side included) (DS) was from 34 to 38 with a mean value

Table 1: Descriptive statistics of meristic pholidosis characters, morphometric measurements and ratios of *Trachylepis aurata* (LINNAEUS, 1758) specimens. For abbreviations, see 'Materials and Methods'.  $n$  - number of specimens; SD - standard deviation;  $P$  (t-test) - Probability. For the meristic data (DS, GS, SDL<sub>a</sub> and SDL<sub>b</sub>) median, mode, 1st (Q1) and 3rd (Q3) quartiles are shown.

Tab: 1. Beschreibende Statistiken meristischer Pholidosemerkmale, morphometrischer Messungen und Längenverhältnisse bei den untersuchten Exemplaren von *Trachylepis aurata* (LINNAEUS, 1758).  $n$  - Anzahl Exemplare; SD - Standardabweichung;  $P$  (t-test) - Wahrscheinlichkeit. Abkürzungserklärungen siehe Tabelle 3. Bei meristischen Daten (DS, GS, SDL<sub>a</sub> and SDL<sub>b</sub>) sind auch Median- (Med.) und Modalwert (Mod.) sowie erstes (Q1) und drittes (Q3) Quartil angegeben.

Parameter	$n$	Minimum	Maximum	Mean / Med. / Mode Mittel / Med. / Mod.	Q1	Q3	SD	$P$ (t-test)
DS	53	34	38	35.60 / 36 / 36	35	36	0.93	$P > 0.05$
GS	53	57	71	64.43 / 64 / 63	62.5	67	3.03	$P > 0.05$
SDL <sub>a</sub>	53	16	21	18.57 / 19 / 18	18	19	1.15	$P > 0.05$
SDL <sub>b</sub>	53	16	21	18.57 / 19 / 18	18	19	1.15	$P > 0.05$
HL <sub>a</sub>	40	11.78	15.54	14.41			0.89	$P > 0.05$
HL <sub>b</sub>	40	12.48	17.52	15.92			1.07	$P > 0.05$
HW	40	9.64	14.02	12.09			0.97	$P > 0.05$
DN	40	2.40	3.86	3.12			0.32	$P > 0.05$
SVL	40	67.68	102.78	87.03			7.56	$P > 0.05$
TL	21	80.78	141.74	111.10			15.07	$P > 0.05$
FLL	40	17.90	26.68	23.36			1.64	$P > 0.05$
HLL	40	24.94	35.98	32.26			2.22	$P > 0.05$
DFH	18 ♂♂	37.30	53.10	44.03			4.71	$P < 0.05$
DFH	22 ♀♀	35.12	56.78	47.59			5.53	$P < 0.05$
TL / SVL	21	0.97	1.50	1.27			0.16	$P > 0.05$
SVL / FLL	40	3.46	4.24	3.72			0.17	$P > 0.05$
SVL / HLL	40	2.52	3.00	2.70			0.12	$P > 0.05$
SVL / HL <sub>a</sub>	40	5.35	6.61	6.03			0.27	$P > 0.05$
SVL / HL <sub>b</sub>	40	5.01	5.95	5.46			0.23	$P > 0.05$
HL <sub>a</sub> / HW	40	1.09	1.39	1.19			0.55	$P > 0.05$
HL <sub>b</sub> / HW	40	1.20	1.49	1.32			0.54	$P > 0.05$

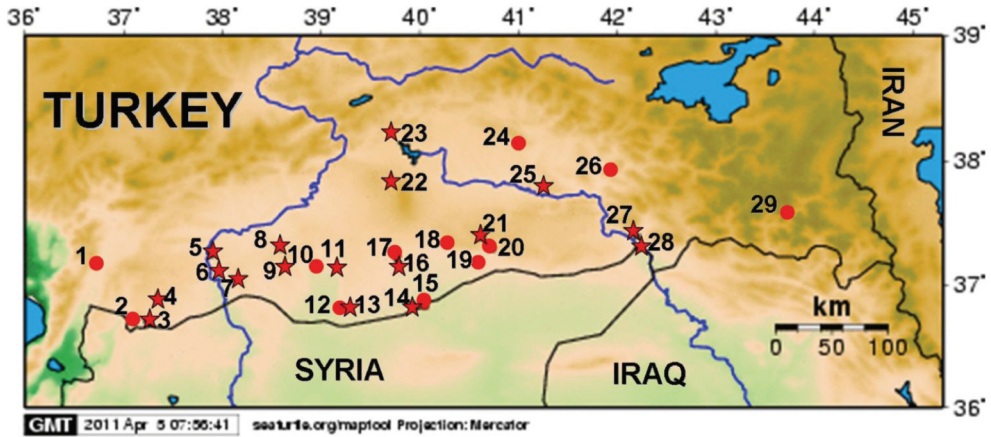


Fig. 1: The distribution of *Trachylepis aurata* (LINNEAUS, 1758) in southeast Anatolia. Record localities known from the literature are shown; stars highlight localities from where specimens were examined in this study. Data from MERTENS (1924, 1952), BIRD (1936), BARAN (1977) and YILMAZ (1977).

Abb 1: Die Verbreitung von *Trachylepis aurata* (LINNEAUS, 1758) in Südostanatolien. Nachweise aus der Literatur sind angegeben, Sterne markieren Fundorte, von denen Untersuchungsmaterial für diese Studie vorlag. Nach Daten von MERTENS (1924, 1952), BIRD (1936), BARAN (1977) und YILMAZ (1977).

- 1 - 17 km W of Gaziantep; 2 - Kilis; 3 - Acar Village, Kilis; 4 - Dokurcun Village, Gaziantep; 5 - Halfeti, Şanlıurfa; 6 - 16 km from Birecik towards Halfeti, Şanlıurfa; 7 - 65 km from Şanlıurfa towards Birecik, Şanlıurfa; 8 - 33 km from Şanlıurfa towards Bozova, Şanlıurfa; 9 - Küçükalanlı Village, Şanlıurfa; 10 - 17 km E of Şanlıurfa; 11 - 32 km from Şanlıurfa towards Viranşehir, Şanlıurfa; 12 - Karahisar, Tekttek Mountains, Şanlıurfa; 13 - Tekttek Mountains, Şanlıurfa; 14 - Güzelyurt, Ceylanpınar, Şanlıurfa; 15 - Ceylanpınar, Şanlıurfa; 16 - Karataş, Ceylanpınar, Şanlıurfa; 17 - Viranşehir, Şanlıurfa; 18 - Derik, Mardin; 19 - Kızıltepe, Mardin; 20 - 5 km N of Mardin, Mardin; 21 - 17 km from Mardin towards Diyarbakır, Mardin; 22 - 48 km from Diyarbakır towards Siverek, Diyarbakır; 23 - 6 km from Ergani towards Çermik, Diyarbakır; 24 - 2 km N of Silvan, Şanlıurfa; 25 - 13 km from Batman towards Hasankeyf, Batman; 26 - Siirt; 27 - 13 km from Cizre towards Şırnak, Şırnak; 28 - 5 km from Cizre towards Silopi, Şırnak; 29 - Hakkari.

of 35.6 ( $n$ : 53, 1st quartile: 35, median: 36, mode: 36 and 3rd quartile: 36). Descriptive statistics of the pholidosis characters are

given in Table 1. Independent t-tests did not reveal significant differences between male and female pholidosis characters (Table 1).

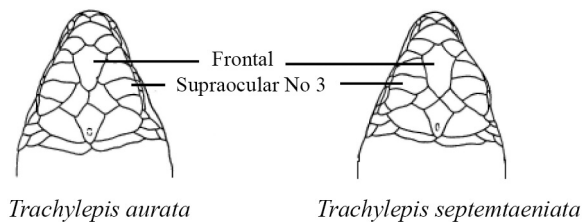


Fig. 2: Pileus pholidosis of *Trachylepis aurata* (LINNEAUS, 1758) and *T. septemtaeniata* (REUSS, 1834). The third supraocular is separated from the frontal in *aurata* and in contact with the frontal shield in *septemtaeniata* (see MORAVEC et al. 2006).

Abb. 2: Pileuspholidose bei *Trachylepis aurata* (LINNEAUS, 1758) und *T. septemtaeniata* (REUSS, 1834). Das dritte Supraoculare ist bei *aurata* vom Frontale getrennt, bei *septemtaeniata* mit diesem in Kontakt (siehe MORAVEC et al. 2006).

Table 2: The contact situation between third supratemporal shields and the frontal shield as found in the specimens of *Trachylepis aurata* (LINNAEUS, 1758) examined in the present study (see Fig. 2).

Tab. 2: Die Kontaktsituation zwischen den dritten Supratemporal Schilden und dem Frontalschild bei den untersuchten Exemplaren von *Trachylepis aurata* (LINNAEUS, 1758).

Locality Fundort	Contact on / Kontakt			Locality Fundort			Contact on / Kontakt		
	both sides beidseitig	one side einseitig	none keiner	both sides beidseitig	one side einseitig	none keiner	both sides beidseitig	one side einseitig	none keiner
Küçükalanlı Village, Şanlıurfa	+			Dokurcun Village, Gaziantep					+
Küçükalanlı Village, Şanlıurfa		+		Dokurcun Village, Gaziantep					+
Küçükalanlı Village, Şanlıurfa		+		Dokurcun Village, Gaziantep					+
Ceylanpınar, Şanlıurfa			+	Dokurcun Village, Gaziantep				+	
Ceylanpınar, Şanlıurfa		+		Dokurcun Village, Gaziantep					+
Güzelyurt, Ceylanpınar, Şanlıurfa		+		48 km from Diyarbakır towards Siverek			+		
Güzelyurt, Ceylanpınar, Şanlıurfa		+		48 km from Diyarbakır towards Siverek			+		
Güzelyurt, Ceylanpınar, Şanlıurfa			+	6 km from Ergani towards Çermik					+
Güzelyurt, Ceylanpınar, Şanlıurfa		+		17 km from Mardin towards Diyarbakır			+		
Karataş, Ceylanpınar, Şanlıurfa		+		13 km from Cizre towards Şırnak, Şırnak					+
16 km from Birecik towards Halfeti, Şanlıurfa			+	5 km from Cizre towards Silopi, Şırnak					+
16 km from Birecik towards Halfeti, Şanlıurfa			+	5 km from Cizre towards Silopi, Şırnak					+
16 km from Birecik towards Halfeti, Şanlıurfa			+	5 km from Cizre towards Silopi, Şırnak					+
16 km from Birecik towards Halfeti, Şanlıurfa			+	13 km from Batman towards Hasankeyf					+
65 km from Şanlıurfa towards Birecik, Şanlıurfa			+	13 km from Batman towards Hasankeyf				+	
Halfeti, Şanlıurfa		+		13 km from Batman towards Hasankeyf					+
33 km from Şanlıurfa towards Bozova, Şanlıurfa		+		13 km from Batman towards Hasankeyf					+
Tek Tek Mountains, Şanlıurfa		+		13 km from Batman towards Hasankeyf					+
Tek Tek Mountains, Şanlıurfa		+		13 km from Batman towards Hasankeyf					+
32 km from Şanlıurfa towards Viranşehir, Şanlıurfa			+	13 km from Batman towards Hasankeyf					+
Acar Village, Kilis		+		13 km from Batman towards Hasankeyf					+
Acar Village, Kilis		+		13 km from Batman towards Hasankeyf					+
Acar Village, Kilis			+	13 km from Batman towards Hasankeyf					+
Yavuzlu, Kilis		+		13 km from Batman towards Hasankeyf					+
Yavuzlu, Kilis			+	13 km from Batman towards Hasankeyf					+
				13 km from Batman towards Hasankeyf			+		

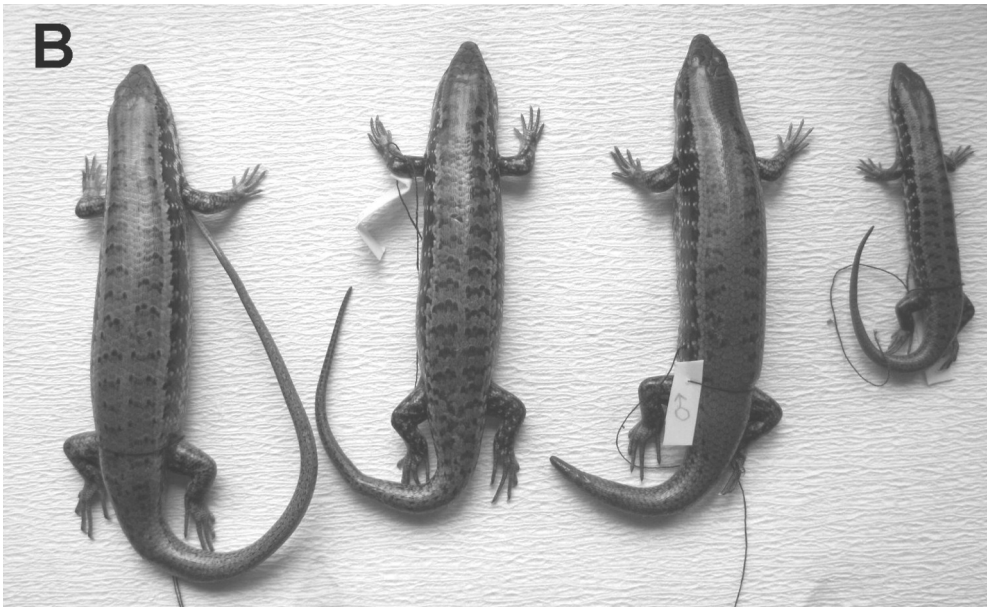
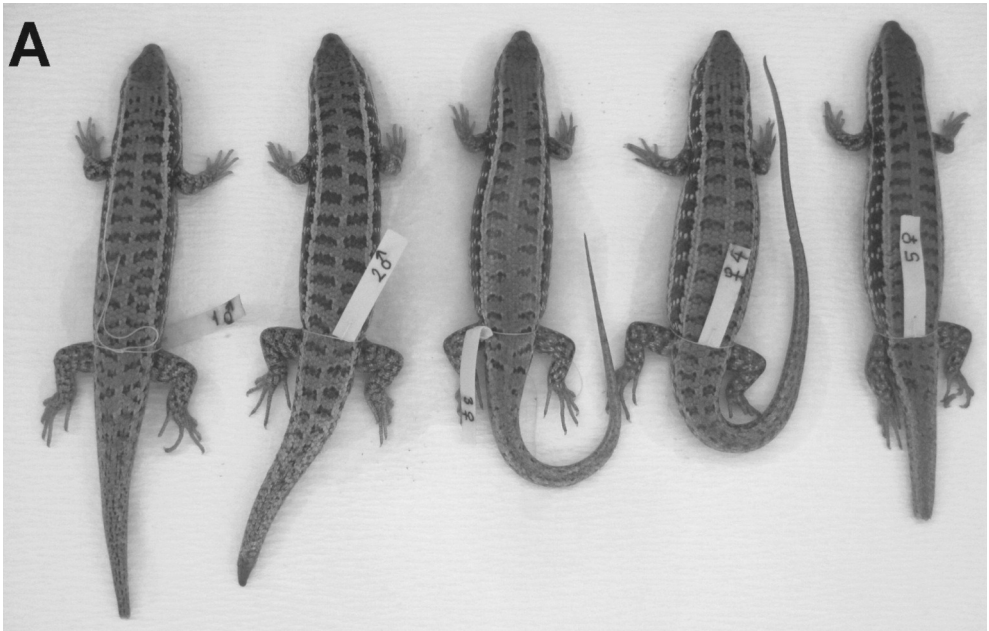


Fig. 3: Dorsolateral views of *Trachylepis aurata* (LINNAEUS, 1758).  
 A - specimens from Güzelyurt, Ceylanpınar, Şanlıurfa (ZDEU 81/2001);  
 B - specimens from 16 km from Birecik towards Halfeti, Şanlıurfa (ZDEU 55/2005).

Abb. 3: Dorsolateralansichten von *Trachylepis aurata* (LINNAEUS, 1758).  
 A - Exemplare von Güzelyurt, Ceylanpınar, Şanlıurfa (ZDEU 81/2001);  
 B - Exemplare von 16 km von Birecik in Richtung Halfeti, Şanlıurfa (ZDEU 55/2005).

Table 3: Five ratios of metric measurements in *Trachylepis aurata* (LINNAEUS, 1758) from various Anatolian regions, according to different authors. For abbreviations see Materials and Methods. Data is presented in the order number of specimens studied / mean / minimum-maximum. Values rounded.

Tab. 3: Fünf Quotienten aus Längenmessungen an Stichproben von *Trachylepis aurata* (LINNAEUS, 1758) aus verschiedenen Regionen Anatoliens, nach mehreren Autoren sowie Erklärung der Abkürzungen in den Tabellen 1 und 3. Angegeben sind jeweils Stichprobenumfang / Mittelwert / Minimum-Maximum. Werte gerundet.

DS - Rückenschuppenlängensreihen, GS - Gularia und Ventralia entlang der Bauchmitte, SDL - Subdigitallamellen unter der vierten Zehe (links/rechts), HL<sub>a</sub> - Kopflänge (Schwanzspitze-Hinterrand des Interparietale), HL<sub>b</sub> - Kopflänge (Schwanzspitze-Vorderrand Ohröffnung), HW - maximale Kopfbreite, DN - Nasenlochabstand, SVL - Kopf-Rumpf-Länge, TL - Schwanzlänge, FLL - Vorderbeinlänge, HLL - Hinterbeinlänge, DFH - kürzeste Entfernung von Vorder- und Hinterbeinansatz.

	This study / diese Arbeit SE-Anatolia	YILMAZ (1977) W Anatolia	YILMAZ (1977) Central Anatolia	YILMAZ (1977) SE Anatolia	TOK (1999) SW Anatolia	KUMLUTAS et al. (2004) S Anatolia
TL / SVL	21 / 1.27 / 1.0-1.5	6 / 1.44 / 1.3-1.5	—	10 / 1.31 / 1.0-1.5	3 / 1.34 / 1.2-1.5	4 / 1.20 / 1.1-1.3
SVL / FLL	40 / 3.72 / 3.5-4.2	8 / 3.80 / 3.7-3.9	4 / 3.60 / 3.3-3.9	17 / 3.91 / 3.5-4.3	7 / 3.69 / 3.3-4.3	4 / 3.40 / 3.2-3.6
SVL / HLL	40 / 2.70 / 2.5-3.0	8 / 2.70 / 2.6-2.8	4 / 2.78 / 2.5-3.1	17 / 2.88 / 2.6-3.2	7 / 2.65 / 2.4-2.8	4 / 2.50 / 2.4-2.7
SVL / HL <sub>b</sub>	40 / 5.46 / 5.0-6.0	8 / 5.10 / 4.8-5.5	4 / 5.10 / 4.9-5.5	17 / 5.15 / 4.7-5.6	7 / 5.20 / 5.0-5.6	4 / 6.00 / 5.4-6.7
HL <sub>b</sub> / HW	40 / 1.32 / 1.2-1.5	8 / 1.30 / 1.2-1.4	4 / 1.22 / 1.2-1.3	17 / 1.26 / 1.2-1.4	7 / 1.40 / 1.3-1.5	—

**Color-pattern.** - The ventral side of the body is whitish, without maculation, the dorsal ground color is brownish or olive drab. Sparse spots on the lower part of the head are present in one out of 53 specimens only. There is an unpatterned middorsal (= occipital) zone which is one, rarely two scales wide. The dorsal pattern consists of two longitudinal rows (= parietal bands) of large, more or less rectangular dark spots (Figs. 3A-3B). There is one specimen that lacks the dorsal pattern. The parietal bands start right after the nuchal scales in nine specimens, and five to ten scales behind the nuchals in the rest. Each parietal band is formed by a row of 8-17 ( $n$ : 51, mean: 14.5, 1st quartile: 13, median: 15, mode: 15 and 3rd quartile: 16) spots from its beginning to the level of the hindlimbs. The row continues to the tip of the tail where the spots decrease in size, become indistinct and form a dashed-line. The parietal bands are as wide as 2-3 ( $n$ : 51, mean: 2.9, 1st quartile: 3, median: 3, mode: 3 and 3rd quartile: 3) scales. Dark stains along each flank (= temporal band) are distinctive back to the level of the hindlimbs. The temporal band is generally as wide as 3-4 ( $n$ : 53, mean: 3.2, 1st quartile: 3, median: 3, mode: 3 and 3rd quartile: 4) scales. The supraciliary stripes (separating the parietal and temporal bands) are whitish and generally as wide as 1 scale. The light colored subocular stripe (ventrally bordering the temporal band) is as wide as 1-2 ( $n$ : 53, mean: 1.6, 1st quartile: 1, median: 2, mode: 2 and 3rd quartile: 2) scales. The maxillar band (ventrally bordering the subocular stripe) has irregular stains and its color gets lighter towards the ventral part.

**Habitat.** - *Trachylepis aurata* specimens were collected during day excursions between 08:00 and 18:30 h at temperatures of 21-33°C. The lizards were found under stones and piles of stones situated near cultivated zones but also in rocky areas with dense vegetation. The altitude of the sampling sites ranged from 380 to 1058 m a.s.l. The following amphibians and reptiles were found in sympatry with *T. aurata*: *Ommatotriton vittatus* (GRAY, 1835), *Bufo viridis* (LAURENTI 1768), *Hyla savignyi* AUDOUIN, 1827, *Pelophylax ridibundus* PALLAS, 1771, *Testudo graeca* LINNAEUS, 1758, *Ophisops elegans* MÉNÉTRIÉS, 1832,

*Apathya cappadocica* (WERNER, 1902), *Trachylepis vittata* (OLIVIER, 1804), *Chalcides ocellatus* FORSSKÅL, 1775, *Eumeces schneideri* DAUDIN, 1802, *Hemidactylus turcicus* (LINNEAUS, 1758), *Mediodactylus heterocercum* (BLANFORD, 1874), *Laudakia stellio* (LINNEAUS, 1758), *Trapelus lessonae* (DE FILIPPI, 1865), *Lacerta media* LANTZ & CYRÉN, 1920, *Blanus strauchi* (BEDRIAGA, 1884), *Eirenis modestus* (MARTIN, 1838), *Eirenis rothi* JAN, 1863, *Pseudocyclophis persicus* (ANDERSON, 1872), *Eirenis collaris*

(MÉNÉTRIÉS, 1832), *Eirenis decemlineatus* (DUMÉRIL, BIBRON & DUMÉRIL, 1854), *Typhlops vermicularis* MERREM, 1820, *Leptotyphlops macrorhynchus* (JAN, 1860), *Platyceps najadum* (EICHWALD, 1831), *Eryx jaculus* LINNEAUS, 1758, *Malpolon monspessulanus* (HERMANN, 1804), *Dolichophis jugularis* (LINNEAUS, 1758), *Natrix tessellata* (LAURENTI, 1768), *Hemorrhoids ravergeri* (MÉNÉTRIÉS, 1832) and *Macrovipera lebetina* (LINNEAUS, 1758).

## DISCUSSION

*Trachylepis aurata* differs from *T. vittata* in having smooth nuchals; parietals not in contact, separated by interparietal; postnuchals smooth or weakly keeled; no light vertebral stripe (BAŞOĞLU & BARAN 1977; LEVITON et al. 1992; ANDERSON 1999). Formerly, three subspecies of *M. aurata* were recognized on the basis of color-pattern, contact between third supraocular and frontal and numbers of DS and GS: (i) *M. a. aurata* – two longitudinal rows of large more or less rectangular dark spots on dorsum, third supraocular separated from frontal, 34-38 DS, 56-71 GS; (ii) *M. a. septemtaeniata* (REUSS, 1834) – four more or less complete longitudinal rows of small dark spots on dorsum, third supraocular in contact with frontal, 32-38 DS, 60-62 GS; and (iii) *M. a. transcaucasica* ČERNOV, 1926 (syn. *M. a. affinis* [DE FILIPPI, 1863]) – characterized by the *septemtaeniata* pattern combined with a higher number of gular and abdominal scales along the midventral line 32-40 DS, 65-72 GS (see BAŞOĞLU & BARAN 1977; LEVITON et al. 1992; ANDERSON 1999; MORAVEC et al. 2006; RASTEGAR-POUYANI 2006). Recently the former subspecies *septemtaeniata* was elevated to species level according to a molecular phylogenetic (MAUSFELD & SCHMITZ 2003).

According to YILMAZ (1977), the DS count is one of the diagnostic key features discriminating between *T. aurata* subspecies. DS counts in our specimens ( $n$ : 53, mean: 35.6, range: 34-38, 1st quartile: 35, median: 36, mode: 36 and 3rd quartile: 36) were similar to those given by BARAN

(1977) ( $n$ : 30, mean: 35.7, range: 34-38, 1st quartile: 35.7, median: 36, mode: 36 and 3rd quartile: 36), YILMAZ (1977) ( $n$ : 31, mean: 35.7, range: 34-38, 1st quartile: 36, median: 36, mode: 36 and 3rd quartile: 36), TOK (1999) ( $n$ : 7, mean: 35.4, range: 34-37, 1st quartile: 35, median: 35, mode: 35 and 3rd quartile: 36) and KUMLUTAŞ et al. (2004) ( $n$ : 4, mean: 34.8, range: 34-35, 1st quartile: 34.3, median: 35, mode: 35 and 3rd quartile: 35) for *T. aurata* specimens captured from different localities of Anatolia.

MORAVEC et al. (2006) found *septemtaeniata* to occur in sympatry with *aurata* in southern Turkey (surroundings of Birecik, Şanlıurfa), which supported the specific status of both these taxa. The third supraocular was separated from the parietal in 54.7% of 53 studied specimens of *T. aurata* originating from various localities in southeast Anatolia. Among these, 21 specimens from Şanlıurfa (including the surroundings of Birecik where *T. septemtaeniata* and *T. aurata* share the same biotope) showed the third supratemporal separated from the frontal in five specimens (23.8%) only (Table 2). None of the specimens examined in the present study had four longitudinal rows of more or less rectangular small dark spots on the dorsum, characteristic of *T. septemtaeniata*. Comparison of the specimens' key diagnostic ratios with those given in previous studies is presented in Table 3.

In conclusion, regarding meristic pholidosis characters, metric measurements and color-pattern features, the specimens of



*T. aurata* from southeast Anatolia examined in this study are within the variation limits mentioned for the taxon in the literature (MERTENS 1924, 1952; BARAN 1977; YILMAZ 1977; BARAN & ATATÜR 1998; TOK 1999; KUMLUTAŞ et al. 2004). The occurrence of *T. septemtaeniata* in Turkey reported by MORAVEC et al. (2006) based on a single individual captured from the surroundings of Birecik, Şanlıurfa, could not be supported by additional materials and is considered doubtful.

Recently, molecular studies on *Mabuya* were conducted in order to understand the systematics of this genus (MAUSFELD et al. 2002; MAUSFELD & SCHMIDT 2003; CARRANZA & ARNOLD 2003; JESUS et al. 2005; WHITING et al. 2006; MIRALLES & CARRANZA 2010). MAUSFELD et al. (2002) rec-

ommended partitioning of the old collective genus *Mabuya* into four genera. MAUSFELD & SCHMIDT (2003) assigned the Turkish, and all Middle East species of the former genus *Mabuya*, to what they called the Afro-Malagasy clade. This taxonomic splitting was, however, seen controversially. JESUS et al. (2005), WHITING et al. (2006) and MIRALLES & CARRANZA (2010) considered the subdivision of *Mabuya* into four genera a premature act, since a fifth and still unnamed distinct genetic lineage was identified. According to JESUS et al. (2005), the Turkish species of *Mabuya* do not belong to any of the four aforementioned genera. There is no doubt that more studies at the molecular and morphological level are needed to clarify the systematic status of the Near East skinks of the old collective genus *Mabuya*.

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## APPENDIX

Materials: 53 specimens (18 ♂♂, 22 ♀♀, 13 juveniles)  
of *Trachylepis aurata* (LINNAEUS, 1758) studied.  
(ZDEU - Zoology Department of Ege University, Buca-İzmir, Turkey)

- |     |   |      |  |
|-----|---|------|--|
| 1 - | ZDEU 16/2005. 1-4 (♀♀), 5-6 (juv.), Dokurcun Village, Gaziantep, 23.04.2005, leg. İ. Baran, Y. Kumlutaş, Ç. Ilgaz, A. Avcı;     | 6 -  | ZDEU 31/2002. 1-2 (♀♀), Ceylanpınar, Şanlıurfa, 08.05.2002, leg. İ. Baran, Y. Kumlutaş, Ç. Ilgaz, A. Avcı;   |
| 2 - | ZDEU 74/2001. 1 (♀), Karataş, Ceylanpınar, Şanlıurfa, 03.05.2001, leg. İ. Baran, Y. Kumlutaş, Ç. Ilgaz, A. Avcı;                | 7 -  | ZDEU 55/2005. 1 (♂), 2-3 (♀♀), 4 (juv.), 16 km from Birecik towards Halfeti, Şanlıurfa, 25.04.2005, leg. İ. Baran, Y. Kumlutaş, Ç. Ilgaz, A. Avcı; |
| 3 - | ZDEU 81/2001. 1-2 (♂♂), 3-5 (♀♀), Güzelyurt, Ceylanpınar, Şanlıurfa, 03.05.2001, leg. İ. Baran, Y. Kumlutaş, Ç. Ilgaz, A. Avcı; | 8 -  | ZDEU 88/2005. 1 (♂), 2-3 (♀♀), Küçükalanlı Village, Şanlıurfa, 27.04.2005, leg. İ. Baran, Y. Kumlutaş, Ç. Ilgaz, A. Avcı;                          |
| 4 - | ZDEU 98/2001. 1 (juv.), 65 km from Şanlıurfa towards Birecik, Şanlıurfa, leg. İ. Baran, Y. Kumlutaş, Ç. Ilgaz, A. Avcı;         | 9 -  | ZDEU 98/2005. 1 (♂), 32 km from Şanlıurfa towards Viranşehir, Şanlıurfa, 28.04.2005, leg. İ. Baran, Y. Kumlutaş, Ç. Ilgaz, A. Avcı;                |
| 5 - | ZDEU 21/2002. 1 (♀), 2 (juv.), Tektik Mountains, Şanlıurfa, 05.05.2002, leg. İ. Baran, Y. Kumlutaş, Ç. Ilgaz, A. Avcı;          | 10 - | ZDEU 122/2005. 1 (♂), 17 km from Mardin towards Diyarbakır, Mardin, 30.04.2005, leg. İ. Baran, Y. Kumlutaş, Ç. Ilgaz, A. Avcı;                     |

- 11 - ZDEU 127/2005. 1 (juv.), 6 km from Ergani towards Çermik, Diyarbakır, 30.04.2005, leg. İ. Baran, Y. Kumlutaş, Ç. Ilgaz, A. Avcı;
- 12 - ZDEU 138/2005. 1 (♀), 2 (juv.), 48 km from Diyarbakır towards Siverek, Diyarbakır, 31.04.2005; leg. İ. Baran, Y. Kumlutaş, Ç. Ilgaz, A. Avcı;
- 13 - ZDEU 194/2005. 1-8 (♂♂), 9-10 (♀♀); 11-13 (juv.), 13 km from Batman towards Hasankeyf, Batman, 13.06.2005, leg. İ. Baran, Y. Kumlutaş, Ç. Ilgaz, A. Avcı, A. H. Uçar;
- 14 - ZDEU 6/2006. 1 (♀), 13 km from Cizre towards Şırnak, Şırnak, 08.04.2006, leg. İ. Baran, Y. Kumlutaş, Ç. Ilgaz, A. Avcı;
- 15 - ZDEU 19/2006. 1 (♂); 2-3 (♀♀), 5 km from Cizre towards Silopi, Şırnak, 10.04.2006, leg. İ. Baran, Y. Kumlutaş, Ç. Ilgaz, A. Avcı;
- 16 - ZDEU 40/2006. 1 (♂), Halfeti, Şanlıurfa, 12.04.2006, leg. İ. Baran, Y. Kumlutaş, Ç. Ilgaz, A. Avcı;
- 17 - ZDEU 59/2006. 1 (♂), 2-3 (juv.), Acar Village, Kilis, 13.04.2006, leg. İ. Baran, Y. Kumlutaş, Ç. Ilgaz, A. Avcı;
- 18 - ZDEU 61/2006. 1 (♂), 2 (♀), Yavuzlu, Kilis, 13.04.2006, leg. İ. Baran, Y. Kumlutaş, Ç. Ilgaz, A. Avcı;
- 19 - ZDEU 95/2006. 1 (juv.), 33 km from Şanlıurfa towards Bozova, Şanlıurfa, 22.05.2006, leg. İ. Baran, Y. Kumlutaş, Ç. Ilgaz, A. Avcı.

DATE OF SUBMISSION: April 29, 2011

Corresponding editor: Heinz Grillitsch

AUTHORS: Salih Hakan DURMUŞ, PhD, Dokuz Eylül University, Faculty of Education, Department of Biology, Buca-İzmir-Turkey <hakan.durmus@deu.edu.tr>; Yusuf KUMLUTAŞ, PhD (corresponding author), Dokuz Eylül University, Faculty of Education, Department of Biology, Buca-İzmir-Turkey <yusuf.kumlutas@deu.edu.tr>; Adem ÖZDEMİR, PhD, Adnan Menderes University, Faculty of Education, Department of Science Education, Aydın-Turkey <ademozdemir@adu.edu.tr>; Aziz AVCI, PhD, Adnan Menderes University, Faculty of Science and Arts, Department of Biology, Aydın-Turkey <aavci@adu.edu.tr>; Çetin İLGAZ, PhD, Dokuz Eylül University, Fauna and Flora Research and Application Center, Buca-İzmir-Turkey <cetin.ilgaz@deu.edu.tr>.