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## On Some Lizard Species of the Western Taurus Range

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## On Some Lizard Species of the Western Taurus Range

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**Abstract:** A total of 282 specimens belonging to 13 lizard species from the Western Taurus Range were investigated. Morphological and biological data as well as missing pieces of information about the species were sought to be completed with the addition of a large number of new localities. Moreover, the data obtained were compared with those in the relevant literature in an attempt to shed light on the taxonomical status of the species.

**Key Words:** Western Taurus, lizard, new locality

### Batı Torosların Bazı Kertenkele Türleri Hakkında

**Özet:** Bu çalışmada Batı Toros Dağları civarından toplanan 13 kertenkele türüne ait 282 numune incelenmiştir. Türlerin morfolojik ve biyolojik bilgileri ile dağılımlarına ait eksik bilgiler birçok yeni lokalitelerin de eklenmesiyle tamamlanmaya çalışılmıştır. Ayrıca elde edilen veriler literatür bilgisiyle de karşılaştırılarak türlerin taksonomik durumları aydınlatılmaya çalışılmıştır.

**Anahtar Sözcükler:** Batı Toros, kertenkele, yeni lokalite

### Introduction

As can be seen from a number of studies carried out on various lizards from Turkey (Budak, 1976; Schmidtler, 1986a; Kumlutaş, 1993; Tok, 1993; Kumlutaş, 1996; Franzen, 1998), specimens collected from various localities in Turkey were examined either as individual species or by comparing them with one another. In recent years, however, herpetofauna studies covering a certain region (Kasperek, 1990; Baran et al., 1992; Baran et al., 1994; Tok, 1995; Baran et al., 1997; Kumlutaş et al., 1998) have gained ever increasing importance. This is due to the fact that such studies enable researchers to determine the number and

distribution of the lizard species within a certain area of investigation in a more detailed manner, and also to observe their variations better.

The Taurus Mountains, which extend in south-central Turkey parallel to the Mediterranean coastline, are quite a long mountain range made up of western, middle and eastern sections. The Western Taurus Range has a particular significance in that it separates the southern Turkish coastline, which has a typical Mediterranean climate, from the dry and steppe-like central Anatolia. Because the western Mediterranean coastline reaches high elevations in a relatively small area and displays significant climatic variations, the range is responsible for

certain morphological changes in many lizard species. Therefore, some new species and subspecies have been described from south-western Anatolia (Başoğlu, 1967; Eiselt and Baran, 1970; Başoğlu and Atatür, 1975; Başoğlu and Baran, 1976; Baran and Budak, 1978; Baran and Atatür, 1980; Schmidtler, 1986b; Eiselt and Schmidtler, 1987; Franzen and Klewen, 1987; Schmidtler, 1997).

This study was intended to determine in detail the lizard fauna of the Western Taurus Range, which is of a particular significance with respect to both geographical characteristics and vegetation, but has not yet been fully investigated. An extensive study on the lizard species in this region will help complete the missing pieces of information related to the vertical distribution and biotope of the species, and will add new localities. Moreover, the morphological characteristics of the lizard species that were determined are compared with the

literature in an attempt to shed light on their taxonomical status.

### Materials and Methods

A number of scientific excursions were made to south-western Anatolia, where the Western Taurus Range is located, and 282 specimens belonging to 13 lizard species were caught in the region. The region where the specimens were collected is shown in the Figure. The specimens, that were given collection numbers at ZDEU (Zoology Department Ege University), are now kept at the Faculty of Science and Literature, Akdeniz University. Body ratio indices of the specimens that were examined with regard to pholidosis, body measurements and colour-pattern characteristics were obtained using a pair of dial callipers with an accuracy of 0.02 mm. The Mann-Whitney U test was utilised to compare the non-parametric characteristics of the subspecies.

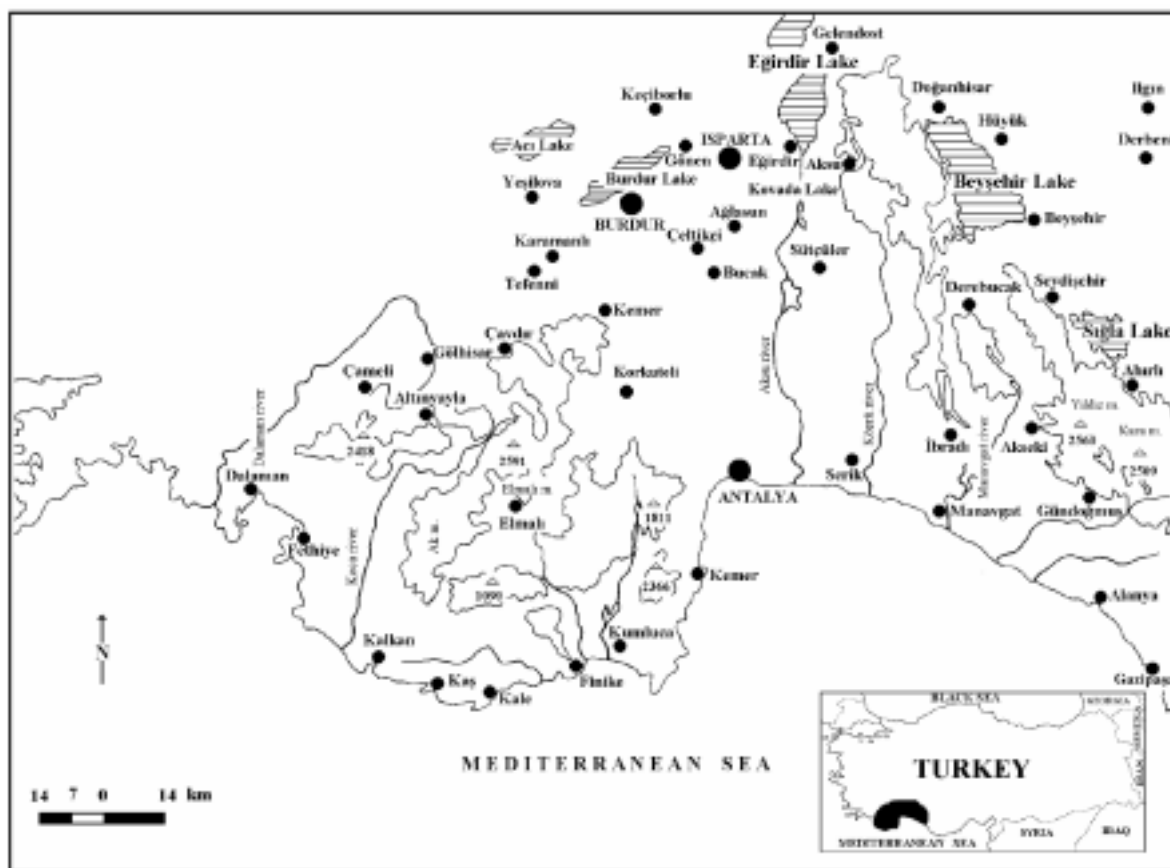


Figure. The area where the specimens were collected.

## Results

### *Cyrtopodion kotschyi* (STEINDACHNER, 1870)

Material: 39 (17 ♂♂, 13 ♀♀, 9 juv.): 352/1996, 1 ♀, Saklıkent-Antalya, 24.02.1996, Leg. S. Düşen; 353/1996, 1-3 Juv., Oba village-Alanya, 13.04.1996, Leg. M. Öz; 354/1996, 1-2 Juv., Karaisalı village-Gündoğmuş, 12.05.1996, Leg. M. Öz; 355/1996, 1 ♀, Pamuklu village-Gündoğmuş, 12.05.1996, Leg. M. Öz; 356/1996, 1 Juv., Ulupınar-Kemer, 15.06.1996, Leg. Y. Kumlutaş, H. Durmuş; 357/1996, 1-5 ♂♂, 6-7 ♀♀, 8 Juv., Elmalı, 16.06.1996, Leg. Y. Kumlutaş, H. Durmuş; 358/1996, 1-3 ♂♂, 4-5 ♀♀, Çiğlikara-Elmalı, 17.06.1996, Leg. M. Öz, Y. Kumlutaş; 359/1996, 1-3 ♂♂, 4-8 ♀♀, 9 Juv., Kuyucak village-Akseki, 08.08.1996, Leg. M. Öz; 291/1997, 1-6 ♂♂, 7-8 ♀♀, 9 Juv., Beyobası-Gazipaşa, 24.06.1997, Leg. Y. Kumlutaş, H. Durmuş.

The number of postnasal tubercles in the specimens is 1, rarely 2. There are 1-4 granules between the longitudinal rows of dorsal tubercles. In the specimens, supralabials range between 7 (7.82) and 9, and sublabials between 6 (6.87) and 9. The other pholidotic characteristics and body ratio indices are shown in Table 1.

The dorsum is grey-brown or brown and there are dark and faded transverse stripes on the dorsal surface continuing on the tail. The venter is dirty yellow or white.

The specimens were caught in stony places and especially around dense *Cedrus libani* trees at elevations of 150-1950 m during the day and on stone walls of buildings during evening hours.

The morphological data related to the specimens were consistent with those given for the *C. k. ciliciensis* subspecies by Baran and Gruber (1982). Consequently, it

can be stated that the specimens in the area of investigation can be included in the *C. k. ciliciensis* subspecies. All the localities except for Akseki are new localities for this subspecies.

### *Hemidactylus turcicus* (LINNAEUS, 1758)

Material: 14 (4 ♂♂, 8 ♀♀, 2 juv.): 179/1994, 1 ♂, Denizyaka village-Manavgat, 04.05.1994, Leg. M. Öz; 180/1994, 1 ♀, Erenköy-Antalya, 29.05.1994, Leg. Ö. F. Aktaş; 181/1994, 1 ♀, Topçular-Antalya, 08.06.1994, Leg. M. R. Tunç; 151/1995, 1 ♀, Kızılot-Manavgat, 08.04.1995, Leg. N. Turan; 152/1995, 1 ♂, Kızılot-Manavgat, 16.04.1995, Leg. N. Turan; 346/1996, 1 Juv., Finike, 07.03.1996, Leg. M. Öz; 347/1996, 1-2 ♂♂, 3-5 ♀♀, 6 Juv., Denizyaka village-Manavgat, 18.08.1996, Leg. Y. Kumlutaş, H. Durmuş; 348/1996, 1 ♀, Topçular-Antalya, 25.08.1996, Leg. S. Düşen; 349/1996, 1 ♀, Kızılot-Manavgat, 25.08.1996, Leg. M. Öz.

The number of longitudinal tubercles on the dorsum of the specimens is 14. The supralabials are 7-7 in 1 of the specimens (7%), and 8-8 in the others (93%). The number of infralabials is 5 in all the specimens, postnasal plates are 2-2 and the number of preanal pores in 4 male specimens is 7. Longitudinal ventral scales range between 36 (37.21) and 40. Some body ratio indices related to adult specimens are given in Table 2.

The background colour of the dorsum is greyish or light brown with dark blotches. There are transverse brownish stripes on the tail. The venter is a dirty white colour.

The specimens were often caught at night from the stone walls and balconies of buildings. The only specimen from Finike was caught under a stone in a clearing covered with scrub.

Table 1. The results of descriptive statistics regarding some of the characteristics of *Cyrtopodion kotschyi* (N = Number of the specimens, Min. = Minimum, M = Mean, Max. = Maximum, SD = Standard deviation, SE = Standard error).

Character	N	Min.	M	Max.	SD	SE
4 <sup>th</sup> subdigital lamellae	39	15	17.79	23	2.00	0.32
Longitudinal rows of dorsal tubercles	39	8	10.20	12	1.03	0.16
Preanal pores	17	4	5.41	9	1.80	0.43
Snout + vent length	30	30.76	36.72	43.22	2.99	0.54
Tail length	6	31.02	38.73	43.46	5.04	2.05

Table 2. The results of descriptive statistics regarding some of the characteristics of *Hemidactylus turcicus*.

Character	N	Min.	M	Max.	SD	SE
Head length	12	12.26	15.78	18.78	1.70	0.49
Head width	12	9.26	10.67	12.36	0.94	0.27
Snout + vent length	12	41.64	51.30	57.06	4.56	1.31
Tail length	9	32.96	48.72	60.72	8.65	2.88
Snout + vent length/Head length	12	2.82	3.25	3.69	0.24	0.07

The morphological characteristics given for the material of the present study resemble those of the *Hemidactylus turcicus* species described by previous researchers and reported to be distributed along the Turkish coastline (Baran and Gruber, 1982; Baran and Atatür, 1998).

***Laudakia stellio* (LINNAEUS, 1758)**

Material: 67 (22 ♂♂, 29 ♀♀, 16 Juv.): 176/1994, 1 ♂, 2 ♀, 3-4 Juv., Kısalar village-Manavgat, 05.02.1994, Leg. M. Öz; 177/1994, 1 ♀, Denizyaka village-Manavgat, 20.03.1994, Leg. M. Öz; 178/1994, 1 ♂, 2-3 ♀♀, Denizyaka village-Manavgat, 10.04.1994, Leg. M. Öz; 147/1995, 1-2 ♀♀, Kızılot-Manavgat, 16.04.1995, Leg. N. Turan; 148/1995, 1 ♂, 2 ♀, Manavgat, 12.06.1995, Leg. M. Öz, R. Tunç; 149/1995, 1 ♂, Sertavul pass-Mut, 21.09.1995, Leg. S. Düşen; 328/1996, 1 Juv., Oba village-Alanya, 13.04.1996, Leg. M. Öz; 325/1996, 1 ♂, 2 ♀, 3 Juv., between Antalya and Korkuteli, 06.05.1996, Leg. M. R. Tunç; 326/1996, 1 ♂, 2 Juv., Altınyaka-Kumluca, 08.05.1996, Leg. M. Öz; 327/1996, 1 ♂, 2 ♀, between Akseki and Gündoğmuş, 11.05.1996, Leg. M. Öz; 329/1996, 1 ♀, Çamkuyu-Elmalı, 06.06.1996, Leg. M. R. Tunç; 330/1996, 1-2 ♀♀, Dağbağ village-Kaş, 15.06.1996, Leg. Y. Kumlutaş, H. Durmuş; 331/1996, 1 ♂, Köybaşı village-Kalkan, 16.06.1996, Leg. Y. Kumlutaş, H. Durmuş; 332/1996, 1-2 ♀♀, Çiğlikara-Elmalı, 17.06.1996, Leg. Y. Kumlutaş; 333/1996, 1 Juv., Örcü village-Gazipaşa, 22.08.1996, Leg. M. Öz, Y. Kumlutaş; 334/1996, 1 ♂, 2 ♀, Sugözü-Gazipaşa, 22.08.1996, Leg. M. R. Tunç, H. Durmuş; 335/1996, 1 ♂, Demirtaş-Alanya, 24.08.1996, Leg. H. Durmuş; 336/1996, 1-2 Juv., Sapar-Alanya, 24.08.1996, Leg. Y. Kumlutaş, H. Durmuş; 337/1996, 1 ♂, 2-6 Juv., Kızılot-Manavgat, 25.08.1996, Leg. O. Türkozan; 276/1997, 1 ♂, 2 ♀, Beşkonak village-Bucak, 25.04.1997, Leg. Y. Kumlutaş,

S. Düşen; 277/1997, 1 Juv., between Üzümdere Village and İbradı, 15.05.1997, Leg. S. Düşen; 278/1997, 1 ♂, Çobanpınar village-Bucak, 24.05.1997, Leg. S. Düşen; 279/1997, 1 ♀, Ürkütlü village-Bucak, 24.05.1997, Leg. M. R. Tunç; 280/1997, 1 ♂, 2-4 ♀♀, between Yuva and Seki, 26.05.1997, Leg. Y. Kumlutaş, H. Durmuş; 281/1997, 1-2 ♂♂, 3 ♀, Xanthos ruins-Antalya, 27.05.1997, Leg. Y. Kumlutaş; 282/1997, 1-3 ♂♂, 4 ♀, Kızılot-Manavgat, 16.06.1997, Leg. O. Türkozan; 283/1997, 1-2 ♀♀, Belbaşı-Gazipaşa, 24.06.1997, Leg. M. Öz; 284/1997, 1-3 ♂♂, 4 ♀, Beren Plateau-Gazipaşa, 25.06.1997, Leg. Y. Kumlutaş; 285/1997, 1-4 ♀♀, Çamkuyu-Elmalı, 01.07.1997, Leg. M. Öz; 286/1997, 1 Juv., Korkuteli Dam, 24.08.1997, Leg. Y. Kumlutaş; 124/1998, 1 ♂, İrmasan pass-Akseki, 26.06.1998, Leg. M. Öz.

The mean value of the number of 3<sup>rd</sup> toe lamellae on the forelimb was calculated as 16.52 (min: 14, max: 20), and the mean value of the 4<sup>th</sup> toe lamellae on the hindlimb was 21.11 (min: 19, max: 24). Some body ratio indices are given in Table 3.

In the specimens, the dorsum is blackish brown. Males have more distinct bright blue dorsal scales compared to females. The number of specimens with a mosaic pattern under the head is 22 (33%), the number with longitudinal blackish broken stripes is 13 (20%), and the number with both a mosaic pattern and stripes is 31 (47%).

The specimens were collected at elevations varying between 100 and 1950 m. Most of the localities where the specimens were collected are new.

The *Laudakia stellio* species has a very wide area of distribution in Turkey except for the north (Baran et al., 1989). The subspecific condition of the species was

Table 3. The results of descriptive statistics regarding some of the characteristics of *Laudakia stellio*.

Character	N	Min.	M	Max.	SD	SE
Head width	51	14.88	23.01	30.72	3.37	0.47
Head length	51	17.94	28.70	36.96	4.43	0.62
Snout + vent length	51	62.94	104.07	133.18	15.59	2.18
Tail length	32	92.68	140.56	174.72	20.47	3.62
(Head width/Head length) X100	51	22.67	27.63	31.72	1.78	0.24
Tail length/Snout + vent length	32	1.11	1.38	1.62	0.12	0.02

examined by Beutler and Frör (1980) and Baran and Öz (1985), as a result of which they reported that the *L. stellio daani* subspecies was distributed in the area where this study was conducted. Although the data related to the specimens examined in this study are consistent with those for the *L. s. daani* subspecies in general, they display certain differences. The mean values of the 3<sup>rd</sup> toe and 4<sup>th</sup> toe lamellae of the forelimb (15.9 and 19.1) were lower in Baran and Öz (1985) than in the present study. Of the 18 specimens mentioned in that study, the percentage of those with a mosaic pattern under the head is quite high (78%) compared to the present study. This difference can be attributed to the limited number of specimens (n: 18).

#### *Chamaeleo chamaeleon* (LINNAEUS, 1758)

Material: 5 (1 ♂, 4 ♀♀): 173/1994, 1 ♀, Karadayı village-Manavgat, 29.04.1994, Leg. M. Öz; 145/1995, 1 ♀, Arapsuyu-Antalya, 27.04.1995, Leg. A. Yanıkoğlu; 318/1996 1 ♂, Demirtaş-Alanya, 24.08.1996, Leg. M. R. Tunç; 319/1996, 1 ♀, Topçular-Antalya, 21.11.1996, Leg. M. Öz; 204/1999, 1 ♀, Arapsuyu-Antalya, 05.10.1999, Leg. M. R. Tunç.

In the specimens, the head length varied between 27.72 (36.22) and 43.02 mm, head width between 10.66 (13.24) and 14.54 mm, ocular diameter between 7.42 (9.81) and 10.94 mm, snout-vent length between 82.86 (113.72) and 150 mm, tail length between 81.96 (114.16) and 155 mm, and head length/head width between 2.44 (2.72) and 2.98 mm. The longest specimen was 305 mm and the shortest was 169.12 mm, the average being 227.78 mm. The specimens caught among the scrub had a yellowish stripe on the ventral side extending to the anus. A female specimen was found to have deposited 39 eggs.

Due to their being greater in size, the Eastern Mediterranean specimens were differentiated from the Western Mediterranean ones and were included in the *C. chamaeleon recticrista* subspecies (Böhme and Wiedl, 1994; Göçmen et al., 1996). Data related to our specimens also resembled those of *C. c. recticrista*.

#### *Ophisaurus apodus* (PALLAS, 1775)

Material: 3 (1 ♂, 2 Juv.): 172/1994, 1 ♂, Belek-Serik, 28.05.1994, Leg. M. R. Tunç; 315/1996, 1 Juv., Tünektepe-Antalya, 16.03.1996, Leg. M. Öz; 273/1997, 1 Juv., Tünektepe-Antalya, 08.03.1997, Leg. M. R. Tunç.

Both dorsal and ventral scales are keeled in the juvenile specimens, but the adult individual has smooth ventral scales. The number of dorsal scales in the transverse of the specimens is 99 (101.66)-106, and the number of ventral scales in the transverse is 118 (119.66)-121. There are 12 rows of longitudinal dorsal scales and 10 rows of longitudinal ventral scales.

The head length of the single adult specimen is 45.36 mm, the head width is 31.58 mm, the snout-vent length is 395 mm, and the tail length is 600 mm.

The ground colour of the dorsum is grey with zigzagging blackish brown stripes in the juvenile specimens. In the adult specimen, however, the head is light yellowish brown and the other parts are dark brown.

The adult specimen was collected among *Pinus pinea* trees and the juveniles in stony biotopes among scrub and *Pinus brutia* trees.

The *O. a. apodus* subspecies is distributed in East and North Anatolia, and *O. a. thracicus* in West Anatolia and Turkish Thrace (Obst, 1978; Öz, 1982; Baran and

Atatür, 1998). The specimens we have obtained resemble the *O. a. thracius* subspecies which were previously reported by some researchers and whose specifications were described in detail.

***Lacerta trilineata* BEDRIAGA, 1886**

Material: 25 (11 ♂♂, 8 ♀♀, 6 Juv.): 185/1994, 1 ♂, 2 ♀, Kurşunlu Waterfall-Antalya, 29.05.1994, Leg. Ö. F. Aktaş; 360/1996, 1 ♂, Karacaören Dam-Bucak, 15.04.1996, Leg. M. Öz; 361/1996, 1 Juv., Korkuteli, 06.05.1996, Leg. S. Düşen; 363/1996, 1 ♂, 1 ♀, Çatallar (Arif) village-Elmalı, 15.06.1996, Leg. Y. Kumlutaş; 364/1996, 1 ♂, Çiğlikara-Elmalı, 17.06.1996, Leg. M. Öz, Y. Kumlutaş, H. Durmuş; 365/1996, 1 ♂, Topçular-Antalya, 26.06.1996, Leg. O. Önal; 292/1997, 1 ♂, 2-3 ♀♀, Yelten (Yeşil Plateau)-Korkuteli, 24.05.1997, Leg. Y. Kumlutaş, M. R. Tunç; 293/1997, 1 ♂, 2-3 ♀♀, Sülekler village-Korkuteli, 25.05.1997, Leg. Y. Kumlutaş, M. R. Tunç; 294/1997, 1 ♂, Alibeli-Korkuteli, 25.05.1997, Leg. Y. Kumlutaş, H. Durmuş; 295/1997, 1-2 Juv., Yuva (Seki) village-Elmalı, 26.05.1997, Leg. Y. Kumlutaş, M. R. Tunç, S. Düşen; 296/1997, 1 ♂, 2-3 Juv., Yuva village-Seki, 26.05.1997, Leg. Y. Kumlutaş, M. R. Tunç; 129/1998, 1 Juv., Aşağı Gökdere village-Sütçüler, 08.06.1998, Leg. M. Öz; 130/1998, 1 ♂, 2-3 ♀♀, Alibeli-Korkuteli, 22.06.1998, Leg. M. Öz; 131/1998, 1 ♂, Uçarsu (Yeşilgöl)-Gömbe, 23.06.1998, Leg. M. Öz.

Postnasals are 2-2, and frenal plates 1-1 in all the specimens. Supratemporals are 2-2 in 22 specimens (88%), but 2-3 (4%) and 3-2 (8%) in the others. Preoculars are generally 2-2 (84%) rarely 1-1 (8%), 2-1

(4%) and 3-3 (4%). The number of supralabials anterior to suboculars is 4-4 (88%), 4-3 (4%), 4-5 (4%) and 5-5 (4%). The number of temporal plates varies between 20 (29.32) and 42, collars between 6 (8.96) and 11, median gulars between 16 (18.87) and 22 and transverse rows of ventrals between 26 (28.92) and 31. Other ratio indices related to the specimens are given in Table 4.

The dorsal surface of the juveniles is brown with light longitudinal stripes. The dorsal stripes on the adults disappear with age. The flanks of the head are light blue in the male specimens. The specimens were collected on bushy and wooded banks of streams and in gardens with dense vegetation. Most of the localities where the specimens were caught are new localities not mentioned in previous studies.

According to Baran and Atatür (1998), this species has 9 subspecies but Schmidtler (1986b) classified the populations in Turkey into 3 species, *L. trilineata*, *L. media*, and *L. pamphylica* and then divided these species into many subspecies. The distribution of *L. t. diplochondrodes*, the southern subspecies of *L. trilineata*, falls into the scope of our field of study. Although the morphological data related to this study agree with those of the study carried out by Schmidtler (1986b), the mean values of Schmidtler's numbers of dorsal scales and subdigital lamellae are higher than those obtained in the present study (52.1 and 30.2). Despite these slight differences, our specimens are taxonomically closer to the *L. t. diplochondrodes* subspecies.

Table 4. The results of descriptive statistics regarding some of the characteristics of *Lacerta trilineata*.

Character	N	Min.	M	Max.	SD	SE
Pileus length	19	17.36	24.00	30.06	3.57	0.82
Pileus width	19	7.78	10.66	12.84	1.56	0.35
Snout + vent length	19	73.94	103.89	124.08	14.75	3.38
Tail length	13	168.90	236.56	282.24	38.62	10.71
Total body length	13	242.84	343.02	401.34	50.10	13.89
Supraciliar granules	25	6	9.28	15	2.64	0.53
Dorsal scales	25	44	48.08	57	3.62	0.72
Femoral pores	25	15	16.16	19	0.98	0.19
4 <sup>th</sup> subdigital lamellae	25	23	26.92	30	1.95	0.39



*Lacerta pamphylica* SCHMIDTLER, 1975

Material: 2 (1 ♂, 1 Juv.): 362/1996, 1 Juv., Taşavur-Gündoğmuş, 11.05.1996, Leg. M. Öz; 366/1996, 1 ♂, Alici (Mahmutlar)-Alanya, 24.08.1996, Leg. M. Öz, Y. Kumlutaş.

Postnasals, supratemporals and preoculars are 2-2 in both specimens. The number of frenal plates is 2-2 in the male and 1-1 in the juvenile; temporal plates number 37 in the male and 32 in the juvenile; median gulars number 24 in the male and 21 in the juvenile, and supraciliary granules number 7 in the male and 11 in the juvenile. In both specimens, the number of ventrals in the transverse is 28, the number of dorsal scales 57 and the number of femoral pores is 18. The number of 4<sup>th</sup> toe lamellae is 33 in the male and 30 in the juvenile.

The pileus length of the adult specimen is 21.50 mm, the pileus width is 10.04 mm, the snout vent length is 89.50 mm and the total body length is 325.94 mm.

The morphological characteristics of our specimens, caught while hunting among stones at mid-day, are generally in agreement with Schmidtler's (1986b) study; however, the mean value of the dorsals is slightly higher than in our study (60.4). This species has been identified as a subspecies of *L. trilineata* (*L. t. pamphylica*) by Baran and Atatür (1998). Schmidtler's (1975) study, in which the description of the species was given, does not include the localities where our specimens were caught (Taşavur, Mahmutlar).

*Ophisops elegans* MENETRIES, 1832

Material: 43 (18 ♂♂, 20 ♀♀, 5 Juv.): 157/1995, 1-2 ♀♀, 3 ♂, Manavgat, 12.06.1995, Leg. M. Öz, M. R. Tunç; 368/1996, 1-3 ♀♀, between Korkuteli and Antalya, 06.05.1996, Leg. S. Düşen; 370/1996, 1 juv., Gündoğmuş, 11.05.1996, Leg. M. Öz; 371/1996, 1 ♂, Taşavur-Gündoğmuş, 11.05.1996, Leg. M. Öz; 372/1996, 1 ♀, Burçak village, Güzelbağ-Gündoğmuş, 13.05.1996, Leg. M. R. Tunç; 376/1996, 1-2 ♂♂, İkizce village, Bezirgan-Kalkan, 16.06.1996, Leg. Y. Kumlutaş; 377/1996, 1-2 ♂♂, Çıtlıkara-Elmalı, 17.06.1996, Leg. M. Öz; 378/1996, 1-7 ♂♂, 8-16 ♀♀, Bozhöyük-Elmalı, 18.06.1996, Leg. Y. Kumlutaş, M. Öz, H. Durmuş, M. R. Tunç; 380/1996, 1 ♂, 2-3 ♀♀, 4-5 Juv., Örcü village-Gazipaşa, 22.08.1996, Leg. Y. Kumlutaş, H. Durmuş; 381/1996, 1 ♀, Alici, Mahmutlar-Alanya, 24.08.1996, Leg. M. Öz; 384/1996, 1 ♀, 2-3 Juv., Demirtaş-Alanya, 24.08.1996, Leg. Y. Kumlutaş; 297/1997, 1 ♂, Akseki, 23.04.1997, Leg. M. Öz; 301/1997, 1-3 ♂♂, 4 ♀, Ürkütlü-Bucak, 24.05.1997, Leg. Y. Kumlutaş, O. Türkozan, M. R. Tunç.

It has been reported by a number of researchers that *O. e. macrodactylus* inhabits the west and *O. e. basoglui* the east of the Manavgat River, which is included in our area of investigation (Baran and Budak, 1978; Baran, 1982). The number of postnasal plates is 2, and those of the frenal and frenocular plates 1 in both subspecies. Pholidosis characteristics and body ratio indices of the specimens are given in Table 5.

Table 5. The results of descriptive statistics regarding some of the characteristics of *O. e. macrodactylus* and *O. e. basoglui* subspecies.

Character	<i>O. e. macrodactylus</i>						<i>O. e. basoglui</i>					
	N	Min.	M	Max.	SD	SE	N	Min.	M	Max.	SD	SE
Pileus length	30	9.38	10.48	12.12	0.77	0.14	8	9.08	10.10	12.24	1.04	0.37
Pileus width	30	4.00	4.66	5.46	0.41	0.07	8	3.94	4.58	5.96	0.70	0.25
Snout + vent length	30	42.86	47.91	53.52	2.46	0.44	8	39.62	43.91	51.84	3.64	1.28
Tail length	19	72	98.68	120	11.80	2.70	7	75.00	98.28	120.00	13.78	5.20
Dorsal scales + plates	30	30	33.03	37	1.56	0.28	13	26	29.23	33	2.12	0.59
Ventral plates in width	30	27	29.46	32	1.61	0.29	13	26	28.69	31	1.49	0.41
Femoral pores	30	9	9.33	11	0.79	0.14	13	8	9.23	10	0.72	0.20
4 <sup>th</sup> subdigital lamellae	30	20	21.40	23	0.89	0.16	13	20	21.92	23	0.86	0.23

Baran states that these 2 subspecies are distinguished from each other only by colour and pattern characteristics (Baran, 1982). The specimens to the east of the Manavgat River greatly resemble the *O. e. basoglui* subspecies due to a pale yellow coloration on the underside of the head and neck. Furthermore, the numbers of dorsal scales + plates of these 2 subspecies were found to be different (MW: 35.500, Z: -4.266,  $P < 0.001$ ).

As can be seen in Table 5, the mean number of dorsal scales + plates is 33.03 for *O. e. macrodactylus*. Baran (1982) and Tok (1996) gave the means for this characteristic as 32.16 and 31.45, respectively.

The number of dorsal scales + plates is 29.33 for *O. e. basoglui* in this study (Table 5); however, although this value was given as 28.72 in the first description from the vicinity of Alanya (Baran and Budak, 1978), Baran (1982) reported it as 35.19 in the *O. e. basoglui* material he collected from the east of this region (around the provinces of Mersin and Adana). A reassessment of this interesting condition related to the *O. e. basoglui* subspecies would be beneficial in providing a better understanding of it.

***Chalcides ocellatus* (FORSKAL, 1775)**

Material: 13 (1 ♂, 10 ♀♀, 2 Juv.): 175/1994, 1 ♀, Denizyaka village-Manavgat, 10.04.1994, Leg. M. R. Tunç; 146/1995, 1-2 ♀♀, Kızılot-Manavgat, 08.04.1995, Leg. N. Turan; 321/1996, 1-4 ♀♀, Aksu-Isparta, 15.04.1996, Leg. M. R. Tunç, S. Düşen; 322/1996, 1 ♀, Arapsuyu-Antalya, 04.05.1996, Leg. S. Düşen;

323/1996, 1 ♂, 2 Juv., Belek-Serik, 25.05.1996, Leg. M. R. Tunç; 324/1996, 1-2 ♀♀, 3 Juv., Kızılot-Manavgat, 23.12.1996, Leg. O. Türkozan.

The number of loreals is 2-2 and that of supraoculars is 4-4 in our specimens. Supralabials are 8-8 in 12 specimens (92%), and 9-8 in 1 specimen (8%). The number of sublabials is 6-6, and the 4<sup>th</sup> toe lamellae and the number of scales around the mid-trunk vary between 15-(17.92) and 20 and 27 (28.53) and 31, respectively. Body ratio indices are given in Table 6.

The ground colour of the specimens that were examined is light yellowish brown or grey with thin dark blotches extending transversally. There are white stripes on the blotched scales. The venter is dirty white in all the specimens. The specimens were caught in woods covered with scrub, and among the roots of plants growing on sandy beaches.

Data related to our specimens agree with those given for *C. ocellatus* by Mermer (1996), Budak et al. (1998) and Tok (1999). The village of Denizyaka, Aksu and Arapsuyu are new localities for this species.

***Mabuya aurata* (LINNAEUS, 1758)**

Material: 4 (2 ♂♂, 2 ♀♀): 174/1994, 1 ♂, Taşağıl-Manavgat, 16.04.1994, Leg. M. Öz; 320/1996, 1 ♀, Oba village-Alanya, 20.04.1996, Leg. M. Öz; 275/1997, 1-2 ♂♂, Xanthos ruins-Antalya, 27.05.1997, Leg. Y. Kumlutaş.

Nuchal scales are smooth in our specimens and the frontal is in contact with the 2<sup>nd</sup> supraocular. The number

Table 6. The results of descriptive statistics regarding some of the characteristics of *Chalcides ocellatus*.

Character	N	Min.	M	Max.	SD	SE
Head length	11	8.40	11.74	14.68	1.99	0.60
Head width	11	5.52	7.99	11.02	1.81	0.54
Pileus length	11	7.20	9.50	11.36	1.58	0.47
Pileus width	11	4.32	6.03	7.35	1.10	0.33
Snout + vent length	11	46.68	72.66	92.02	15.45	4.66
Tail length	8	52.68	70.89	92.32	13.93	4.92
Total body length	8	99.38	142.18	171.92	27.60	9.76
Forelimb length	11	8.58	12.72	16.66	2.36	0.71
Hindlimb length	11	13.10	18.68	24.70	3.50	1.05

of supralabials is 8-8 in all the specimens (75%) except for 1 specimen (25%) that has 8-7 supralabials. Sublabials number 6-6 in 2 specimens (50%) and 7-7 in the other 2. The number of supraocular and supraciliary plates is 4-4 in all the specimens. The number of 4<sup>th</sup> toe lamellae on the hindlimb varies between 19 and 22 with a mean value of 20.50. The number of scales at the mid-trunk is 34 and 35, with a mean value of 34.75.

Mean values related to some body ratio indices of the specimens are as follows: head length, 13.48; snout-vent length, 80.70; tail length, 98.58; frontal length, 4.79; frontal width, 3.20; the ratio of snout-vent length to head length, 5.96; the ratio of hindlimb length to snout-vent length, 2.48; the ratio of forelimb length to snout-vent length, 3.44; and the ratio of tail length to snout-vent length, 1.21.

The dorsum of the specimens is grey or light brown. There are 2 rows of darker blackish blotches on each side of the vertebral stripe. The specimens were caught under stones and from open spaces in the ruins of Xanthos.

The localities where our specimens were collected are not included in publications related to this species (Yılmaz, 1977; Baran and Atatür, 1998; Tok, 1999). We may conclude that the morphological characteristics of the specimens resemble those of the *M. a. aurata* subspecies, as stated in the studies by Mertens (1952) and Yılmaz (1977).

#### *Mabuya vittata* (OLIVIER, 1804)

Material: 40 (18 ♂♂, 22 ♀♀): 182/1994, 1 ♂, Bereket village-Manavgat, 20.03.1994, Leg. M. Öz; 183/1994, 1-3 ♂♂, 4-8 ♀♀, Bereket village-Manavgat, 10.04.1994, Leg. M. Öz; 184/1994, 1 ♂, 2 ♀, Kısalar village-Manavgat, 24.04.1994, Leg. M. Öz; 153/1995, 1-2 ♀♀, Beldibi-Antalya, 15.02.1995, Leg. M. Öz; 154/1995, 1-2 ♂♂, 3-5 ♀♀, Kızılot-Manavgat, 16.04.1995, Leg. N. Turan; 155/1995, 1 ♂, 2-4 ♀♀, Manavgat, 02.06.1995, Leg. M. Öz; 350/1996, 1-2 ♂♂, 3 ♀, between Aksu and Isparta, 15.04.1996, Leg. M. Öz, S. Düşen; 351/1996, 1 ♀, Belek, 25.05.1996, Leg. M. R. Tunç; 288/1997, 1 ♀, Perge-Aksu, 24.04.1997, Leg. M. Öz; 289/1997, 1 ♀, Kızılot-Manavgat, 16.06.1997, Leg. O. Türkozan; 290/1997, 1-8 ♂♂, 9-12 ♀♀, Beyobası Plateau-Gazipaşa, 24.06.1997, Leg. Y. Kumlutaş-H. Durmuş.

Nuchal scales are keeled in our specimens and the frontal is in contact with the 2<sup>nd</sup> supraocular. The number of supralabials and sublabials is usually 7-7 (97.5%). Supraoculars are 4-4 in all the specimens. The number of supraciliary plates is generally 5-5 (90%). The number of 4<sup>th</sup> toe lamellae on the hindlimb varies between 15 and 19, with a mean value of 17.20. The number of mid-body scales varies between 30 and 33, with a mean value of 31.70. Some body ratio indices related to the specimens are given in Table 7.

Table 7. The results of descriptive statistics regarding some of the characteristics of *Mabuya vittata*.

Character	N	Min.	M	Max.	SD	SE
Head length	40	9.02	10.84	12.64	0.86	0.13
Snout + vent length	40	55.22	72.13	87.34	8.61	1.36
Tail length	26	57.60	85.59	117.64	16.09	3.15
Length of frontale	40	3.28	4.18	4.88	0.41	0.06
Width of frontale	40	2.14	2.58	2.94	0.23	0.03
Snout + vent length/Head length	40	6.02	6.63	7.46	0.40	0.06
Snout + vent length/Hindlimb length	40	2.66	3.03	3.51	0.18	0.02
Snout + vent length/Forelimb length	40	4.09	4.63	5.36	0.29	0.04
Tail length/Snout + vent length	26	0.80	1.20	1.65	0.27	0.05

The ground colour of the dorsum ranges from metallic grey to dark brown in our specimens. The venter is yellowish or dirty white without blotches. Transverse broken bands observed in Beyobası (Gazipaşa) specimens are more distinct compared to in other specimens.

The specimens were collected under stones in bushy and stony open spaces at elevations varying between 900 and 1900 m.

Although the data related to the morphological characteristics of our specimens agree with the literature (Budak, 1973; Tok et al., 1999; Özdemir et al., 2001), there may be slight variations in some of them. In fact, Tok et al. (1999) gave the number of sublabials as 6 on each side for all Cyprus material, whereas it is 7 in 97.5% of our specimens. While the mean value of the number of 4<sup>th</sup> toe lamellae was reported as 15.8 by Özdemir et al. (2001), who examined Hatay and Gaziantep specimens, this particular value was higher in our material (17.2). Nevertheless, we can state that the specimens in our area of investigation belong to the *M. vittata* species.

#### *Ophiomorus punctatissimus* (BIBRON-BORY, 1833)

Material: 8: 316/1996, 1-5, Kekova Island-Kaş, 08.03.1996, Leg. M. Öz; 317/1996, 1, Finike, 21.12.1996, Leg. M. R. Tunç; 274/1997, 1, Xanthos ruins-Antalya, 27.05.1997, Leg. M. R. Tunç; 123/1998, 1, Finike, 28.04.1998, Leg. S. Düşen.

In the specimens, which were not classified by sex, supralabials are 6-6, sublabials are 5-5, and the number of mid-body scales is 18. The head length of the specimens is 4.88 (6.22)-6.78 mm, snout-vent length is 57.06 (78.04)-90.72 mm, and tail length is 41.98 (58.40)-78.78 mm. The specimen with the greatest total length is 155.54 mm, and that with the smallest length is 122.54 mm, with a mean value of 138.22 mm.

In the specimens examined, the dorsum is light yellowish white with specks forming longitudinal rows. These specks are more distinct on the flanks of the body and in the venter. The specimens were caught under stones in forests.

The morphological data related to the specimens agree with those for *O. punctatissimus* (Baran, 1981; Anderson and Leviton, 1996; Budak et al., 1998). The island of Kekova is a new locality for this species.

#### *Blanus strauchi* (BEDRIAGA, 1884)

Material: 19 (4 ♂♂, 14 ♀♀, 1 Juv.): 150/1995, 1 ♂, 2-

3 ♀♀, Çıralı-Antalya, 20.03.1995, Leg. M. Öz, M. R. Tunç; 338/1996, 1 ♀, Fersin village-Akseki, 04.03.1996, Leg. M. R. Tunç; 339/1996, 2 ♀♀, Küçük Çaltıcak-Beldibi, 07.03.1996, Leg. M. R. Tunç; 340/1996, 2 ♀♀, Kekova Island-Kaş, 08.03.1996, Leg. M. Öz; 341/1996 1 ♀, between Aksu and Isparta, 15.04.1996, Leg. E. Yapıcı; 342/1996, 1 ♀, Perge-Aksu, 15.04.1996, Leg. E. Yapıcı; 343/1996, 1 ♀, Akseki-Gündoğmuş junction, 11.05.1996, Leg. M. Öz; 344/1996, 1 Juv., Ulupınar-Kemer, 15.06.1996, Leg. Y. Kumlutaş; 345/1996, 1♂, Dağbaşı village-Kaş, 15.06.1996, Leg. Y. Kumlutaş-H. Durmuş; 287/1997, 1 ♂, 2 ♀, Kedetler-Antalya, 09.03.1997, Leg. M. R. Tunç; 125/1998, 1 ♀, Kovada Lake, 14.03.1998, Leg. M. R. Tunç; 126/1998, 1 ♂, Nadarlar village-Kaş, 23.03.1998, Leg. M. Öz; 127/1998, 1 ♀, Termessos-Antalya, 13.04.1998, Leg. M. Öz; 128/1998, 1 ♀, Kumluca-Antalya, 25.12.1998, Leg. M. Öz.

The body surface of the specimens is generally reddish grey, turning to dark red-brown on the segments. There is a light longitudinal groove on each flank. The specimens were caught under stones in sparsely vegetated bushy areas covered with *Pinus brutia*, *Quercus* sp. and scrub at elevations ranging from 400 to 900 m. The morphological characteristics of the specimens are given in Table 8.

Within the area of investigation, the *B. s. aporus* subspecies inhabits an area east from the vicinity of Antalya and the *B. s. strauchi* subspecies inhabits an area from İzmir to the vicinity of Kaş (Baran, 1977). In some other studies, however, *B. s. strauchi* has been reported to have a distribution range as far as Finike (Baran, 1981; Budak et al., 1998). One of the most significant differences between these subspecies is the smaller number of preloacal pores in *B. s. aporus* (Alexander, 1966). As can be seen from the morphological characteristics of the specimens in this study (Table 8), specimens from around Kaş, Kekova Island and Kumluca displayed great similarities to the *B. s. strauchi* subspecies, and specimens further east displayed similarities to the *B. s. aporus* subspecies.

#### Conclusion

A series of field studies were conducted in the Western Taurus Range between 1994 and 1999, and 282 specimens belonging to 13 lizard species were

Table 8. The results of descriptive statistics regarding some of the characteristics of *B. s. strauchi* and *B. s. aporus*.

Character	<i>B. s. strauchi</i>						<i>B. s. aporus</i>					
	N	Min.	M	Max.	SD	SE	N	Min.	M	Max.	SD	SE
Scales of fifth ring at mid-trunk	5	31	34.20	37	2.58	1.15	14	37	39.71	44	1.97	0.52
Rings of tail	5	16	19.60	22	2.51	1.12	14	13	18.92	23	2.40	0.64
Praeocloacal pores	5	6	8.60	12	2.41	1.08	10	4	6.50	10	1.58	0.50
Length of frontale	5	2.64	2.96	3.20	0.22	0.10	13	2.78	3.15	3.48	0.20	0.05
Width of frontale	5	2.68	2.95	3.06	0.16	0.07	13	2.28	3.01	3.88	0.46	0.12
Snout + vent length	5	165	172.60	183.00	6.80	3.04	13	118.38	169.36	203.50	23.60	6.54
Tail length	5	8.24	18.19	25.56	8.42	3.76	13	6.76	19.81	26.22	5.94	1.64

caught and evaluated. A systematic examination of the area of investigation led to the discovery of new localities, which largely filled the gaps related to the distribution of the lizard species in this region. The great number of specimens obtained were evaluated in detail with respect to morphological characteristics (pholidosis, colour-pattern and body ratios) and were compared with the literature. Slight variations were found related to the morphology of some species (*L. stellio*, *L. trilineata*, *L. pamphylica* and *M. vittata*); however, it was concluded that these were not significant enough to change their status as species or subspecies. On the other hand, specimens belonging to the 2 subspecies of *O. elegans* in the area of investigation (*O. e. macrodactylus* and *O. e. basoglu*) were found to differ from one another not only as regards colour-pattern characteristics, but also in

terms of the numbers of dorsal scales + plates. With the collection of specimens belonging to *B. s. strauchi*, 1 of the 2 *B. s. strauchi* subspecies distributed in the area of investigation, from Kumluca as well, the distribution of this subspecies has been extended further east wards.

Moreover, missing information in this field was sought to be completed by presenting territorial observations and data related to the biotopes in the regions where the specimens were collected.

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