

On two herpetological collections made in East Anatolia (Turkey)

Über zwei herpetologische Aufsammlungen in Ost-Anatolien (Türkei)

İBRAHİM BARAN & YUSUF KUMLUTAŞ & C. VAROL TOK & ÇETİN ILGAZ
& YAKUP KASKA & KURTULUŞ OLGUN & OĞUZ TÜRKOZAN & FATMA İRET

KURZFASSUNG

Die Autoren berichten über zwei Aufsammlungen von Amphibien und Reptilien aus dem Gebiet der ost-anatolischen Städte Erzurum, Iğdır, Kars und Ardahan. Das Material umfaßt drei Anurentaxa eine Schildkrötenform, 11 Eidechsen- und 11 Schlangenarten in 172 Exemplaren.

ABSTRACT

The authors report on two samples of amphibians and reptiles collected from localities in the vicinity of the East Anatolian cities of Erzurum, Iğdır, Kars and Ardahan. The collections comprise 172 specimens belonging to three anuran, one tortoise, 11 lizard and 11 snake species.

KEY WORDS

Amphibia, Reptilia; herpetofauna, taxonomy, East Anatolia, Turkey

INTRODUCTION

Knowledge on the East Anatolian herpetofauna is comparatively scarce (BIRD 1936; BODENHEIMER 1944; MERTENS 1952; ÖKTEM 1963; PETERS 1964; BAŞOĞLU & HELLMICH 1968; CLARK & CLARK 1973; BARAN 1976; BARAN & BAŞOĞLU 1977; BARAN 1980; DAREVSKY & EISELT 1980; BARAN 1982; BARAN & GRUBER 1982; FRANZEN & SIGG 1989; SCHMIDTLER & LANZA 1990; SCHMIDTLER & EISELT 1991; EISELT et al. 1992, 1993; SCHMIDTLER 1986, 1991, 1993,

1998; SCHMIDTLER et al. 1994; TEYNIÉ 1987, 1991; JOGER et al. 1988; NILSON et al. 1988; MULDER 1994). The lack of information on the herpetofauna of this area is a reason of confusion and strongly restricts our understanding of the biogeography of the whole region, which holds a mix of Caucasian, Anatolian and Iranian species and species complexes. Information gained during field trips to Eastern Anatolia in the years of 1999 and 2000 are presented in this paper.

MATERIALS AND METHODS

In 1999, a 10 days survey was carried out during hot weather conditions from 22 June until 26 June around the cities of Erzurum, Karakurt, Horasan, Sarıkamış, Kars and Ardahan (fig. 1). In 2000, the same region was surveyed under more temperate weather conditions from 29 May until 4 July. During these two surveys, a total of 172 herpetological specimens (26 species – 3 frogs, 1 tortoise, 11 lizards, 11 snakes) were collected from localities around Hora-

san, Karakurt, Kağızman, Sarıkamış, Aralık, Ardahan, Şavşat (fig. 1).

The habitats as well as morphological features of the specimens were recorded. Slides were taken from the specimens prior to fixation and collection numbers (ZDEU – Zoology Department of Ege University, İzmir, Turkey) were given to the specimens kept in the lab of the Department of Biology at Buca Education Faculty of Dokuz Eylül University, İzmir, Turkey. Data on the mate-

rial comprise number, developmental stage and sex of the specimens, locality and date of collection. The specimens were collected by the authors of this paper, hence, collectors are not mentioned in the material sections.

The specimens collected were investigated in terms of i) pholidosis (counts of ventral scutes in snakes were done according to DOWLING 1951; the left body side was involved in counts of symmetrical structures

in tables 1-7), ii) morphometrics (morphometric measurements of the body parts including indexes obtained from their percentage ratios. The morphometric measurements, except for the total body length, were done with dial callipers with an accuracy of 0.02 mm; SVL – Snout-vent-length [mm]; TL – Tail-length [mm]), and, iii) coloration and pattern (coloration of the live specimens was determined by eye, slides were taken for further examination).

RESULTS AND DISCUSSION

Bufo viridis (LAURENTI, 1768)

Material: 186/1999.1 (1♂), 7 km SW Selim, 2010 m a.s.l., 23.06.1999; 194/1999.1 (1♀), 32 km NW Ardahan, 24.06.1999.

These two specimens collected from localities at altitudes above 2000 m were typical representatives of *B. viridis* as described by BAŞOĞLU & ÖZETİ (1973) and BARAN & ATATÜRK (1998). SVL 70.7 mm and 75.4 mm. Both toads were caught under stones in a bushy spot with little vegetation.

'*Rana ridibunda* complex'

Material: 184/1999.1 (1♀), 7 km SW Selim, 1965 m a.s.l., 23.06.1999.

SVL 72.1 mm. Due to the very complex and not well understood situation regarding Near Eastern water frogs (PLÖTNER & OHST 2001; PLÖTNER et al. 2002), we quote our material under '*Rana ridibunda* complex'. The adult female was caught near a stream.

Rana camerani BOULENGER, 1886

Material: 185/1999.1 (1♂), 185/1999.2 (1♀), 7 km SW Selim, 1965 m a.s.l., 23.06.1999; 190/1999.1 (1 subad.), 27 km SW Selim, 2075 m a.s.l., 23.06.1999; 195/1999.1-4 (4 ♀♀), 195/1999.5-6 (2 subad.), 32 km NW Ardahan, 2025 m a.s.l., 24.06.1999.

The typical light colored longitudinal dorsal line was present in 7 out of 9 (77.7%) specimens. SVL were 55.8 mm in the male,

42.7 mm, 52.1 mm, 56.6 mm, 54.7 mm and 58.4 mm in the females respectively. Our collection sites were well within the known distribution area of *R. camerani*. For the most recent study on Near Eastern brown frogs morphological and genetical situation see TARKNISHVILI et al. (2001).

Testudo graeca armeniaca CHKHIKVADZE & BAKRADZE, 1991

Material: 5 adults were seen at Torulpaşa Kışlası, Aralık, 860 m a.s.l., on 01.06.2000 and 3 adults 6 km SW Aralık, 870 m a.s.l., 02.06.2000.

According to PIEH et al. (2002) the places where our specimens were observed fall into the distribution area of *T. graeca armeniaca*. The specimens seen in the Aralık region on Mount Ararat were found on volcanic ground among low sparse herbaceous vegetation.

Phrynocephalus persicus DEFILIPPI, 1863

Material: 88/2000.1 (1 juv.), 6 km SW Aralık, 870 m a.s.l., 02.06.2000.

Shape of head rounded; dorsomedian scales with small keel, larger than surrounding scales, which are inhomogeneous in size. Ventral scales flat; those on the third and fourth toes of the hind limbs with sharp pointed tips, these sharp tips are much more remarkable at the outer sides of the fingers. SVL 39 mm, TL 43 mm. Dorsal body side ash grey with black spots. Spots randomly distributed but looking like disposed in line horizontally and forming horizontal bands

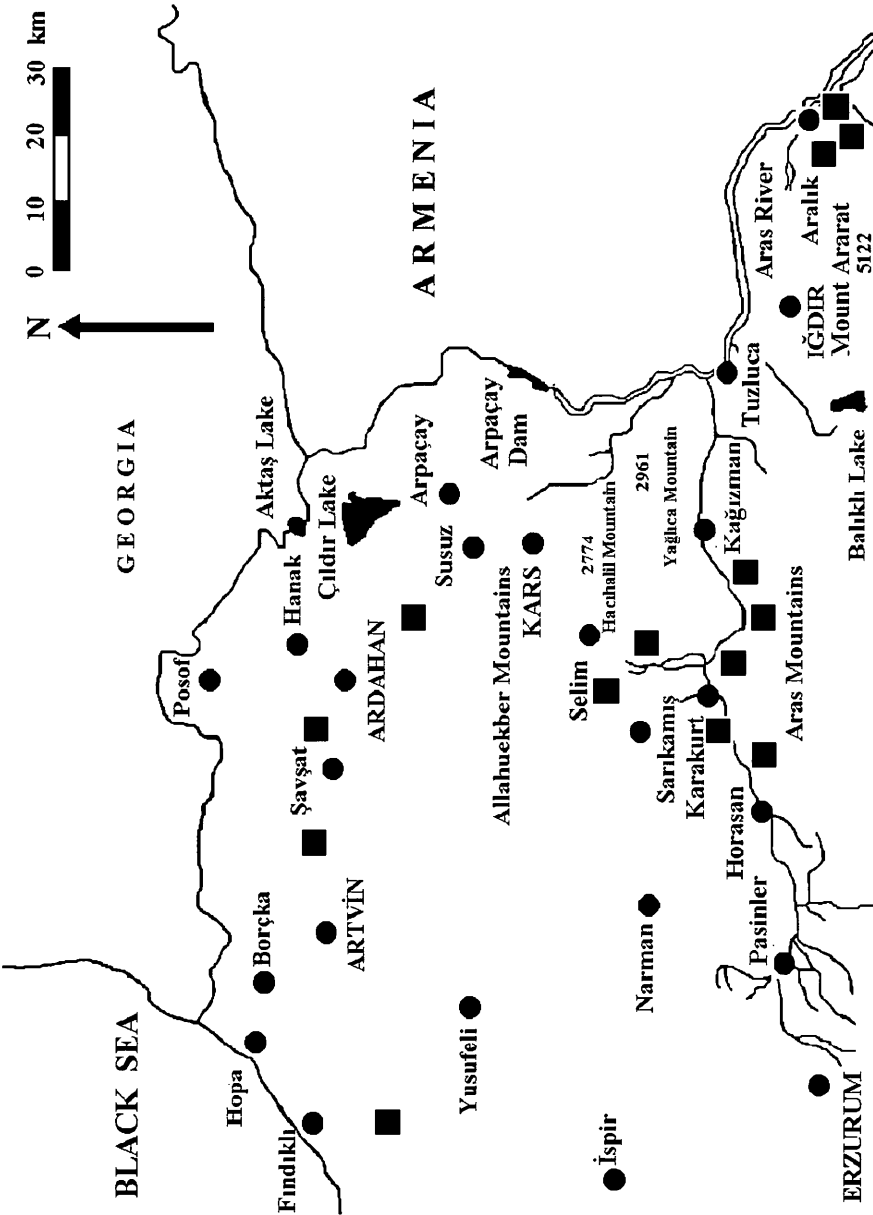


Fig. 1: Map showing the East Anatolian localities (Turkey) in which the specimens were collected.

Abb 1: Karte der Fundorte in Ostanatolien (Türkei).

Table 1: The counts and measurements of 13 specimens of *Eremias pleskei* BEDRIAGA, 1907.

Tab. 1: Zähl- und Meßdaten von 13 Exemplaren von *Eremias pleskei* BEDRIAGA, 1907. SVL - Kopf-Rumpflänge, TL - Schwanzlänge.

Specimen No Exemplar Nr.	Supraciliars Supraciliaria	Dorsals Dorsalia	Femoral Pores Femoralporen	Subdigital Lamellae Subdigitalallamenen	SVL (mm)	TL (mm)
84/2000.1	6	57	17	25	57.1	105
84/2000.2	6	56	15	25	54.2	87
84/2000.3	5	53	16	25	53.9	70
84/2000.4	7	54	15	26	53.8	80
84/2000.5	6	56	14	25	53.8	-
84/2000.6	8	55	15	26	-	-
84/2000.7	6	58	14	24	-	-
84/2000.8	6	55	18	27	-	-
84/2000.9	6	54	14	23	-	-
84/2000.10	7	53	14	24	-	-
90/2000.1	6	52	16	26	52.3	-
90/2000.2	7	51	15	25	53.3	88
90/2000.3	8	54	15	26	-	-
$\bar{x}$	6.5	54.5	15.2	25.1	54.0	86.0

on tail and hind limbs (fig. 2). Ventral side yellowish white without spots.

The young specimen was found in a sandy habitat with sparse vegetation where *Eremias strauchi* KESSLER, 1878 and *E. pleskei* BEDRIAGA, 1907 were present as

well. This taxon seems to be rare as we spent two entire days in the region (01 and 02.06. 2000) in search of this species. BARAN (1980) was the first who found this species in Turkey (around Aralık Military check-point on the Turkish border).



Fig. 2: A juvenile *Phrynocephalus persicus* DEFILIPPI, 1863 caught in the steppe of Aralık.
Abb. 2: Juveniler *Phrynocephalus persicus* DEFILIPPI, 1863 aus der Steppe um Aralık.

Table 2: The counts and measurements of 15 specimens of *Eremias strauchi* KESSLER, 1878.
Tab. 2: Zähl- und Meßdaten von 15 Exemplaren von *Eremias strauchi* KESSLER, 1878. SVL - Kopf-Rumpflänge, TL - Schwanzlänge.

Specimen No Exemplar Nr.	Supraciliars Supraciliaria	Dorsals Dorsalia	Femoral Pores Femoraleporen	Subdigital Lamellae Subdigitallamellen	SVL (mm)	TL (mm)
85/2000.1	5	55	20	21	50.0	70
85/2000.2	5	58	19	22	71.6	133
85/2000.3	6	59	21	21	55.8	84
85/2000.4	6	62	19	22	58.0	92
85/2000.5	6	63	20	19	62.7	128
85/2000.6	7	65	19	25	58.2	94
85/2000.7	6	60	20	23	-	-
85/2000.8	6	60	20	20	-	-
86/2000.1	6	64	18	19	64.4	130
86/2000.2	4	65	17	23	68.6	132
86/2000.3	6	65	22	22	53.0	90
86/2000.4	5	64	20	25	58.6	96
89/2000.1	6	58	21	21	57.4	92
89/2000.2	5	65	20	23	54.6	96
89/2000.3	5	69	21	24	58.4	-
$\bar{x}$	5.6	62.1	19.8	22.0	59.6	103.1

Eremias pleskei
BEDRIAGA, 1907

Material: 84/2000.1-3 (3 ♂♂), 84/2000.4-5 (2 ♀♀), 84/2000.6-10 (5 subad.), Gödekli Village, Aralık, 850 m a.s.l., 01.06.2000; 90/2000.1 (1 ♂), 90/2000.2 (1 ♀), 90/2000.3 (1 subad.), 870 m. a.s.l., 5 km SW Aralık, 02.06.2000.

In all specimens occipital and interprefrontal absent, two postnasals present, nostril surrounded by 3 scales. For further counts and measurements see table 1.

Dorsum brown with bright longitudinal lines, small whitish spots on the fore and hind limbs, ventral side yellowish white.

These very active specimens were found in small spots of sparse herbaceous vegetation on volcanic ground in the sunny afternoon at temperatures around 30°C.

Literature: PETERS (1964); ŞZERBAK (1974); BAŞOĞLU & BARAN (1977); BARAN & ATATÜR (1998).

Eremias strauchi
KESSLER, 1878

Material: 85/2000.1-4 (4 ♂♂), 85/2000.5-6 (2 ♀♀), 85/2000.7-8 (2 subad.), Gödekli Village, Aralık, 850 m a.s.l., 01.06.2000; 86/2000.1-4 (4 ♂♂), Torulpaşa Kışlası, Aralık, 860 m a.s.l., 01.06.2000; 89/2000.1-2 (2 ♂♂), 89/2000.3 (1 ♀♀), 5 km SW Aralık, 870 m a.s.l., 02.06.2000.

Occipital scales absent in all specimens. Interprefrontal absent in 9 (60%), present in 6 (40%) out of 15 specimens. Two postnasals present, nostril surrounded by 3 scales. Subocular always bordering the mouth. Fifth inframaxillars not connected to sublabials in 8 out of 15 specimens (53%). For further counts and measurements see table 2.

Dorsal ground color brown, ventral side unspotted, lateral parts with large dark spots and small, randomly distributed whitish specks, the latter sometimes form interrupted lines and are surrounded by bluish margins in adult males. Small whitish spots on the dorsal parts of the extremities (fig. 3). Ventral side cream colored without spots. Our specimens match the description of *E. strauchi* given by FRANZEN & HECKES (1999) and were collected in the distribution area of the species as indicated by these authors.

The species is stronger and faster than *E. pleskei*, which lives in the same habitat. Upon our approach *E. strauchi* frequently vanished to the roots of the plants or into holes.

Lacerta agilis brevicaudata
PETERS, 1964

Material: 188/1999.1-3 (3 ♂♂), 188/1999.4-8 (5 ♀♀), 188/1999.9-10 (2 subad.), 188/1999.11-12 (2 juv.), 27 km SW Selim, 2075 m a.s.l., 23.06.1999; 193/1999. 1-4 (4 ♂♂), 193/1999.5-6 (2 juv.), 32 km NW



Fig. 3: An adult *Eremias strauchi* KESSLER, 1878 caught in the steppe of Aralık.
Abb. 3: Adultes Exemplar von *Eremias strauchi* KESSLER, 1878 aus der Steppe um Aralık.

Ardahan, 2025 m a.s.l., 24.06.1999. 197/1999.1 (1 ♀), 197/1999.2 (1 subad.), 9 km SE Ardahan, 2025 m a.s.l., 24.06.1999.

For counts and measurements see table 3.

Dorsal ground color green with dark brown spots in mature individuals. Intensity of this green color increases with age while the dark spots disappear. In juveniles and sub-adults brown white large blackish spots arranged in lines; three thin longitudinal lines on dorsum, whitish dots in line and dark spots on the lateral parts of the body; brownish spots in the lateral and dorsal parts of the tail. Chest and abdomen creamy green, ventral side of the head and neck bluish green in males, with or without some dark spots in the lateral abdominal region.

The specimens were found on a meadow with *Pinus sylvestris* in the Sarıkamış region.

Literature: PETERS (1964), BARAN & BAŞOĞLU (1977), and BAŞOĞLU & BARAN (1977).

Parvilacerta parva
(BOULENGER, 1887)

Material: 82/1999.1-3 (3 ♂♂), between Selim and Sarıkamış, 2075 m a.s.l., 23.06.1999; 187/1999.1-3 (3 ♂♂), 187/1999.4-7 (4 ♀♀), between Selim and Karakurt, 1680 m a.s.l., 23.06.1999.

Rostral in contact with nostrils, two postnasals, one loreal, massetericum clearly visible, occipital mostly (80%) in contact with interparietal. 5 – 11 ($\bar{x}$ = 7.2) supraciliary granules, 4 supralabials in front of the subocular in 9 specimens and 5 in one specimen. For further counts and measurements see table 4.

Dorsum grey and light brown with black and white spots; just behind the occipital a few dark spots, sometimes unified, forming a thin line toward the forelimbs. Mid-dorsum lighter than lateral region; an exceptional spot in one specimen. Well visible dark spots in the lateral parts of body connected to the supratemporal line, remarkable white specks on median part of dorsum. Supra-

Table 3: The counts and measurements of 20 specimens of *Lacerta agilis brevicaudata* PETERS, 1964.

Tab. 3: Zähl- und Meßdaten von 20 Exemplaren von *Lacerta agilis brevicaudata* PETERS, 1964. SVL - Kopf-Rumpflänge, TL - Schwanzlänge.

Specimen No Exemplar Nr.	Supraciliars Supraciliaria	Dorsals Dorsalia	Femoral Pores Femoraleporen	Subdigital Lamellae Subdigitallamellen	SVL (mm)	TL (mm)
188/1999.1	5	46	13	18	82.8	-
188/1999.2	5	51	15	21	76.5	130
188/1999.3	5	47	14	20	76.2	-
188/1999.4	5	45	14	20	79.4	-
188/1999.5	5	45	14	17	73.9	-
188/1999.6	6	44	16	20	73.5	-
188/1999.7	5	44	13	17	72.2	100
188/1999.8	5	48	14	19	69.1	98
188/1999.9	6	46	14	20	-	-
188/1999.10	5	46	14	19	-	-
188/1999.11	5	44	14	17	-	-
188/1999.12	5	45	15	19	-	-
193/1999.1	5	44	15	17	89.1	-
193/1999.2	5	45	14	19	90.5	-
193/1999.3	6	44	14	21	76.5	-
193/1999.4	5	45	15	20	72.1	90
193/1999.5	6	42	15	20	-	-
193/1999.6	5	45	14	20	-	-
197/1999.1	5	44	14	21	92.9	-
197/1999.2	5	47	16	19	-	-
$\bar{x}$	5.2	45.3	14.3	19.2	78.8	104.5

temporal line dirty white, well visible as far as to the middle of the body, then continued as an interrupted line towards the posterior end of the body. Subocular line also dirty white reaching back to the hindlimbs. Ventral side yellowish white, the most lateral ventrals with blue or green spots in males.

Literature: PETERS (1962); BAŞOĞLU & BARAN (1977); BARAN et al. (1992); BARAN & ATATÜR (1998); MÜLAYİM et al. (2001).

Darevskia parvula
(LANTZ & CYRÉN, 1936)

Material: 199/1999.1 (1♂), 13 km W of Şavşat, 24.06.1999.

Rostral in not contact with nostrils; 1 postnasal; 6 supraciliars; 13 supraciliar granules, 4 (right) and 5 (left) supralabialia in front of subocular; supratemporal consisting of one big and 5 small scutes; massateric present; 28 gulars; 59 dorsals along middor-

Table 4: The counts and measurements of 10 specimens of *Parvilacerta parva* (BOULENGER, 1887).

Tab. 4: Zähl- und Meßdaten von 10 Exemplaren von *Parvilacerta parva* (BOULENGER, 1887). SVL - Kopf-Rumpflänge, TL - Schwanzlänge.

Specimen No Exemplar Nr.	Supraciliars Supraciliaria	Dorsals Dorsalia	Femoral Pores Femoraleporen	Subdigital Lamellae Subdigitallamellen	SVL (mm)	TL (mm)
82/1999.1	5	36	17	22	56.7	97
82/1999.2	6	39	16	22	46.3	74
82/1999.3	6	37	18	22	37.4	68
187/1999.1	6	34	15	20	45.8	71
187/1999.2	5	38	18	23	45.5	72
187/1999.3	5	36	17	23	45.2	70
187/1999.4	6	38	17	20	42.6	-
187/1999.5	5	36	17	21	55.2	79
187/1999.6	5	37	18	22	48.1	69
187/1999.7	5	34	17	20	46.3	57
$\bar{x}$	5.4	36.5	17.0	21.5	46.9	65.7

Table 5 (this and opposite page): The counts and measurements of 16 specimens of *Darevskia valentini valentini* (BOETTGER, 1892). Temporals 1 - Temporals in the shortest row between masseteric and 1st supratemporal; Temporals 2 - Temporals between masseteric and tympanic.

Specimen No Exemplar Nr.	Supraciliars Supraciliaria	Supraciliar Granules Supraciliargranula	Supralabials in front of Subocular Supralabilia vor dem Suboculare	Post-Supratemporals Post-Supratemporalia
196/1999.1	7	11	3	2
196/1999.2	6	12	4	2
196/1999.3	6	12	3	2
196/1999.4	6	11	4	2
196/1999.5	7	12	4	2
196/1999.6	7	11	3	2
196/1999.7	7	12	4	2
196/1999.8	6	4	4	2
196/1999.9	4	3	4	2
196/1999.10	6	14	4	2
196/1999.11	8	15	3	1
196/1999.12	6	11	4	2
196/1999.13	5	6	4	2
196/1999.14	6	11	3	2
196/1999.15	6	11	2	2
196/1999.16	5	3	4	3
$\bar{x}$	6.1	9.9	3.6	2.0

sal line; 22 femoral pores; 31 subdigital lamellae under fourth finger of hindlimb; 2 preanals; SVL 42.3 mm.

Dorsum grey brown with dark spots; sides of the body darker, densely covered with small white spots. Ventral side bright red without spots.

The single specimen was caught at about 02.00 p.m. under stones bordering a fruit tree garden.

Literature: DAREVSKY & EISELT (1980).

Darevskia raddei
(BOETTGER, 1892)

Material: 82/2000.1 (1♂), 57 km SW Kağızman, 01.07.2000.

7 supraciliar scutes; 11 supraciliar granules; 4 supralabials in front of subocular; masseteric present; supratemporals consisting of one big and three small scutes; 52 dorsals along middorsal line; 21 femoral pores; 28 subdigital lamellae under fourth finger of hindlimb.

Dorsum light brown with irregularly distributed small dark spots; ocelli on the body side with dark periphery and bright centre, 2-4 large ocelli with dark periphery and blue centre at the insertion of the forelimbs, barely visible spots at the femoral

part of the hindlimbs. Ventral side yellow without spots, except blue spots at the outer ventrals which become more pronounced towards the hind lengs. More material is needed for subspecific assignment.

Literature: EISELT et al. (1993).

Darevskia valentini valentini
(BOETTGER, 1892)

Material: 196/1999.1-5 (5♂♂), 196/1999.6-15 (10♀♀), 196/1999.16 (1 subad.), 9 km SE Ardahan, 2025 m a.s.l., 24.06. 1999.

Rostral not in contact with nostril; 1 postnasal; For further counts and measurements see table 5.

Dorsum bluish green or grayish green with big black spots, the latter clearly visible in adult males while small and sparse in females. Body sides darker with small white circular specks being more frequent in males and sparse or few in females. Ventral side yellowish or whitish grey without spots, except sparse blue and black spots on the outermost ventral scutes.

The specimens were caught during rainy and cloudy weather at an altitude of 2025 meters among herbaceous vegetation with sparse bushes. There were also pine trees (*Pinus sylvestris*) in this region.

Literature: EISELT et al. (1992).

Tab. 5 (diese und gegenüberliegende Seite): Zähl- und Meßdaten von 16 Exemplaren von *Darevskia valentini valentini* (BOETTGER, 1892). Temporalia 1 - Temporalia in der kürzesten Reihe zwischen Massetericum und erstem Supratemporale; Temporalia 2 - Temporalia zwischen Massetericum und Tympanicum. SVL - Kopf-Rumpflänge, TL - Schwanzlänge.

Specimen No Exemplar Nr.	Temporals 1 Temporalia 1	Temporals 2 Temporalia 2	Dorsals Dorsalia	Femoral Pores Femoraleporen	Subdigital Lamellae Subdigitallamellen	SVL (mm)	TL (mm)
196/1999.1	1	2	52	20	24	65.4	-
196/1999.2	2	2	49	18	25	63.4	80
196/1999.3	1	1	50	19	24	61.6	124
196/1999.4	1	1	51	18	23	61.6	87
196/1999.5	1	3	50	21	27	62.8	-
196/1999.6	1	3	47	17	22	70.8	120
196/1999.7	1	3	49	19	25	73.0	115
196/1999.8	2	2	46	17	27	68.7	103
196/1999.9	1	3	42	16	25	66.9	97
196/1999.10	1	2	53	19	23	65.3	-
196/1999.11	1	2	49	20	24	65.8	115
196/1999.12	1	2	50	20	21	63.0	-
196/1999.13	1	1	45	16	26	63.2	-
196/1999.14	1	2	47	16	24	65.2	-
196/1999.15	1	3	51	19	21	56.5	105
196/1999.16	1	1	46	15	28	-	-
x	1.1	2.1	48.6	18.1	24.3	64.9	105.1

Darevskia uzzelli
(DAREVSKY & DANIELJAN, 1977)

Material: 183/1999.1-4 (4 ♀ ♀), 183/1999.5 (1 subad.), 7 km SW Selim, 1965 m a.s.l., 23.06.1999.

Rostral not bordering nostrils; 1 postnasal; masseteric present. For further counts and measurements see table 6.

Dorsum brown or grayish brown with slightly visible sparse dark spots; body side darker with small white specks. Ventral side whitish without spots except sparse blue spots on the outermost ventrals. The specimens were caught at the riverside where dense low vegetation was dominant among stones.

Literature: SCHMIDTLER et al. (1994).

Lacerta trilineata
BEDRIAGA, 1886

Material: 73/2000.1 (1 ♂), between Karakurt and Kağızman, 900 m a.s.l., 30.05.2000.

Two postnasals; 2 preoculars; 6 supraciliars, 8 supraciliar granules, 4 supralabials in front of the subocular; 2 supratemporals; masseteric present (left) or absent (right); 46 dorsals along middorsal line; 19 gulars; 7 collaria; 6 longitudinal series of ventrals; 14 femoral pores; 25 subdigital lamellae under fourth finger of hindlimb. SVL 123.5 mm, TL 152 mm.

Dorsal and lateral parts of the body green with very small black spots which

Table 6: The counts and measurements of 5 specimens of *Darevskia uzzelli* (DAREVSKY & DANIELJAN, 1977).

Tab. 6: Zähl- und Meßdaten von 5 Exemplaren von *Darevskia uzzelli* (DAREVSKY & DANIELJAN, 1977). SVL - Kopf-Rumpflänge, TL - Schwanzlänge.

Specimen No Exemplar Nr.	Supraciliars Supraciliaria	Supraciliar Granules Supraciliar-Granula	Supralabials before Subocular Supralabialia vor d. Suboculare	Dorsals Dorsalia	Femoral Pores Femoraleporen	Subdigital Lamellae Subdigitallamellen	SVL (mm)	TL (mm)
183/1999.1	6	12	4	56	19	29	67.8	100
183/1999.2	6	11	4	56	18	25	64.7	115
183/1999.3	6	12	4	57	19	25	57.3	85
183/1999.4	5	13	6	51	18	24	55.1	97
183/1999.5	7	13	4	58	20	25	-	-
x	6	12.2	4.4	55.6	18.8	25.6	61.2	99.3

Table 7: The counts and measurements of 27 specimens of *Ophisops elegans* MÉNÉTRIÉS, 1832.

Tab. 7: Zähl- und Meßdaten von 27 Exemplaren von *Ophisops elegans* MÉNÉTRIÉS, 1832. SVL - Kopfrumpflänge, TL - Schwanzlänge.

Specimen No	Supraciliars	Supraciliar Granules	Supralabials before Subocular	Dorsals	Femoral Pores	Subdigital Lamellae	SVL (mm)	TL (mm)
Exemplar Nr.	Supraciliaria	Supraciliar-Granula	Supralabialia vor d. Suboculare	Dorsalia	Femoral-poren	Subdigital-lamellen		
179/1999.1	4	12	4	37	10	21	53.6	-
180/1999.1	4	14	4	29	10	24	50.9	87
75/2000.1	4	9	4	32	11	24	52.3	-
75/2000.2	4	9	4	40	11	22	48.7	-
75/2000.3	4	11	4	33	12	22	45.1	-
75/2000.4	4	9	4	33	10	21	48.7	-
75/2000.5	4	8	4	33	12	21	46.7	86
75/2000.6	4	11	4	33	10	23	47.9	-
75/2000.7	4	11	4	35	8	22	43.5	-
78/2000.1	5	11	4	38	11	24	49.5	-
78/2000.2	4	11	4	37	11	24	49.4	103
78/2000.3	5	13	4	35	11	24	49.7	96
78/2000.4	4	12	4	36	11	24	46.5	105
78/2000.5	5	11	4	32	11	22	49.3	-
78/2000.6	4	11	4	34	11	23	46.2	-
78/2000.7	4	11	4	36	10	24	44.4	-
78/2000.8	5	12	4	35	11	24	44.7	-
78/2000.9	4	11	4	35	11	23	48.9	89
78/2000.10	4	11	4	36	10	23	48.8	-
78/2000.11	4	10	4	35	10	21	45.7	-
78/2000.12	4	9	4	33	8	23	48.5	81
78/2000.13	5	12	4	38	9	21	47.1	84
78/2000.14	4	11	4	32	10	21	42.7	-
83/2000.1	5	11	4	32	10	24	49.6	-
83/2000.2	5	10	4	37	12	22	45.2	-
83/2000.3	3	12	4	36	11	21	44.2	-
83/2000.4	5	10	4	35	9	22	45.1	-
$\bar{x}$	4.2	10.9	4	33.5	10.0	22.6	47.5	91.4

form a complicated system of lines on the pileus. Ventral side yellowish green; outer-most ventrals with black dots.

There were 10 subspecies of *Lacerta trilineata* recognized until 1964 and five (*L. trilineata trilineata*, *L. trilineata wolterstorffii* MERTENS, 1922, *L. trilineata media* LANTZ & CYRÉN, 1920, *L. trilineata cariensis* PETERS, 1964 and *L. trilineata galatiensis* PETERS, 1964) of them found to be present in Turkey (BODENHEIMER, 1944; MERTENS, 1952; PETERS, 1964). PETERS (1964) reported that the subspecies *L. trilineata dobrociga* FUHN & MERTENS, 1959 might also be present at the Northwest of Turkey. BARAN (1969) accepted the specimens collected around İzmir to be *L. trilineata cariensis*. SCHMIDTLER (1975) described three more subspecies occurring in Turkey (*L. trilineata isaurica*, *L. trilineata ciliciensis*, and *L. trilineata pamphylica*). He furthermore concluded (SCHMIDTLER 1986) that the Turkish

lizards collectively called *Lacerta trilineata* belonged to three individual species (*L. trilineata* BEDRIAGA, 1886, *L. media* LANTZ & CYRÉN, 1920, *L. pamphylica* SCHMIDTLER, 1975) the taxonomical situation of which was very complex. Our specimen matches the description for *L. trilineata trilineata* collected from East and Central Anatolia (BAŞOĞLU & BARAN 1977; SCHMIDTLER 1986; BARAN & ATATÜR 1998). It was caught near the road under stones amidst herbaceous vegetation at 900 m a.s.l.

Ophisops elegans
MÉNÉTRIÉS, 1832

Material: 179/1999.1 (1 ♀), between Karakurt and Kağızman, 22.06.1999; 180/1999.1 (1 ♀), between Karakurt and Horasan, 1620 m a.s.l., 23.06.1999; 75/ 2000.1-4 (4 ♂ ♂), 75/2000.5-7 (3 ♀ ♀), between Karakurt and Kağızman, 30.05.2000; 78/2000.1-8

(8♂♂), 78/2000.9-14 (6♀♀), between Karakurt and Horasan, 1640 m a.s.l., 31.05.2000; 83/2000.1-2 (2♂♂), 83/2000.3-4 (2♀♀), 57 km SW Kağızman, 01.06.2000.

Nostril bordered by two scutes; 2 postnasals; usually 1 preocular (absent in 6 specimens on one or both sides); for further counts and measurements see table 7. Total body length varied between 145.7 and 152.4 mm in three tailed males and from 129.5-137.9 mm in five females. The ratio of TL to SVL varied between 1.9 and 2.2 in the males and from 1.7-1.8 in the females.

Dorsum bright or dark brown with black spots. Temporal area between supratemporal and subocular lines red with black spots, lighter than dorsum in males. Ventral side dirty white without spots.

By comparing the morphological features of our specimens with relevant data from the literature (BODENHEIMER 1944; BAŞOĞLU & BARAN 1977; TOK et al. 1997) we found that our specimens had increased mean values regarding the number of scutes and plates around midbody while other pholidosis features were similar to those of the subspecies *O. elegans elegans* as reported for other specimens collected from the same region (TOK 1992, 1993; ÖLGÜN & TOK 1999).

Typhlops vermicularis
MERREM, 1820

Material: 74/2000.1-5 (5 specimens), between Karakurt and Kağızman, 30.05.2000.

Longitudinal scale rows around midbody 22-22-22-24-24. Body length 132-264 mm. Our specimens were caught under stones in herbaceous vegetation.

Literature: BODENHEIMER (1944); BARAN (1976); BAŞOĞLU & BARAN (1980); GRILLITSCH & GRILLITSCH (1993); BARAN & ATATÜRK (1998).

Erx jaculus turcicus
(OLIVIER, 1801)

Material: 191/1999.1 (1♀ subad.), 10 km SW Karakurt, 23.06.1999.

9/10 (right/left) circumoculars, 3/3 scales between eyes and nasals, 2/2 scales

between eyes and supralabials; 11/11 supralabials; 52 longitudinal dorsal scale rows between ventrals 80 and 100; 184 ventrals. Total length 256 mm.

Dorsum pinkish and yellowish brown with dark brown spots. Dark spots on body sides smaller and their edges not as distinct as compared to the dorsal ones. Ventral side yellowish white with small blackish spots. Our specimen was caught under the stones among sparse vegetation.

Literature: BARAN (1976); BAŞOĞLU & BARAN (1980); TOKAR & OBST (1993); BARAN & ATATÜRK (1998).

Haemorrhois ravergieri
(MÉNÉTRIÉS, 1832)

Material: 181/1999.1 (1♀), 10 km SW Karakurt, 1600 m a.s.l., 23.06.1999; 72/2000.1 (1 juv.), between Karakurt and Kağızman, 30.05.2000.

21 longitudinal dorsal scale rows between ventrals 90 and 100; 203 and 207 ventrals; 80 subcaudals in the juvenile. The other pholidosis features were not different from those previously reported for this species (BODENHEIMER 1944; BARAN 1976; BAŞOĞLU & BARAN 1976). SVL was 783 mm in the adult female.

Dorsum yellowish grey-brown with dark spots. A zigzag band formed from spots begins just behind the abdominal region and reaches the tail tip; these spots are oval in shape. Lateral spots smaller than dorsal spots. Ventral side yellowish white in adults, grey-brown in juveniles. The darker juvenile ventral side behind the neck was caused by grey and brown spots on the edges of the ventrals. The specimen was caught under stones among bushy vegetation.

Literature: BARAN (1976), BAŞOĞLU & BARAN (1980), BARAN & ATATÜRK (1998), SCHÄTTI & AGASIAN (1985), BÖHME (1993).

Hierophis schmidtii
(NIKOLSKY, 1909)

Material: 71/2000.1 (1 juv. ♀), between Karakurt and Kağızman, 30.05.2000.

19 longitudinal dorsal scale rows between ventrals 90 and 100; 89 subcaudals. The other pholidosis features are with-

Table 8 (part 1): The counts and measurements of 23 specimens of *Eirenis modestus* (MARTIN, 1838). (l-r) - left side - right side.

Tab. 8 (Teil 1): Zähl- und Meßdaten von 23 Exemplaren von *Eirenis modestus* (MARTIN, 1838). SVL - Kopf-Rumpflänge, TL - Schwanzlänge, (l-r) - linke Seite - rechte Seite.

Specimen No Exemplar Nr.	Preoculars (l-r) Präocularia (l-r)	Postoculars (l-r) Postocularia (l-r)	Temporals (l-r) Temporalia (l-r)	Supralabials (l-r) Supralabialia (l-r)
70/2000.1	1-1	2-2	1+2-1+2	7-7
70/2000.2	1-1	2-2	1+2-1+2	7-7
70/2000.3	1-1	2-2	1+2-1+3	7-7
70/2000.4	1-1	2-2	1+3-1+3	7-7
70/2000.5	1-1	2-2	1+2-1+2	7-7
70/2000.6	1-1	3-2	1+2-1+2	7-7
70/2000.7	1-1	2-2	1+2-1+2	7-7
70/2000.8	1-1	2-2	1+2-1+2	7-7
70/2000.9	1-1	2-2	1+3-1+3	7-7
178/1999.1	1-1	1-2	1+3-1+3	7-7
178/1999.2	1-1	2-2	1+3-1+3	7-7
178/1999.3	1-1	2-2	1+2-1+2	7-7
178/1999.4	1-1	1-2	1+3-1+3	7-7
178/1999.5	1-1	2-3	1+3-1+3	7-7
178/1999.6	1-1	2-2	1+2-1+2	7-7
178/1999.7	2-1	3-3	1+2-1+2	7-7
178/1999.8	1-1	2-2	1+2-1+2	7-7
192/1999.1	1-1	2-2	1+2-1+2	7-7
192/1999.2	1-1	2-2	1+2-1+2	7-7
192/1999.3	1-1	2-2	1+2-1+2	7-7
192/1999.4	1-1	2-2	1+2-1+2	7-7
192/1999.5	1-1	3-2	1+3-1+3	7-7
192/1999.6	1-1	2-2	1+3-1+3	7-7
$\bar{x}$	1.04-1.00	2.04-2.17	1+2.35-1+2.39	7-7

in the range previously reported for *H. schmidt* (BARAN 1976; BAŞOĞLU & BARAN 1980). SVL 295 mm, TL 79 mm.

Dorsum of the juvenile grey-brown with black spots which are arranged in lines and very small on the sides. Free margins of the dorsal scutes thinly lined with white. Ventral side grayish white without spots. This specimen was caught under rocks in herbaceous vegetation.

Literature: ŠZERBAK & BÖHME (1993).

Platyceps najadum
(EICHWALD, 1831)

Material: 76/2000.1 (1 ♀), 15 km SW Karakurt, 1570 m a.s.l., 31.05.2000.

19 longitudinal dorsal scale rows between ventrals 90 and 100; 102 subcaudals. The other pholidosis features not different from those previously reported for this species. SVL 256 mm, TL 192 mm. This female was caught on a stony hill with herbaceous vegetation.

Literature: BIRD (1936); BODENHEIMER (1944); BARAN (1976); BAŞOĞLU & BARAN (1980); DAREWSKY & ŠZERBAK (1993); BARAN & ATATÜR (1998)

Eirenis modestus
(MARTIN, 1838)

Material: 178/1999.1-5 (5 ♂♂), 178/1999.6-7 (2 ♀♀), 178/1999.8 (1 juv. ♂), 10 km SE Karakurt, 1700 m a.s.l., 22.06.1999; 192/1999.1 (1 ♂), 192/1999.2-3 (2 ♀♀), 192/1999.4-6 (3 juv. ♀♀), 10 km SW Karakurt, 1700 m a.s.l., 23.06.1999; 70/2000.1-4 (4 ♂♂), 70/2000.5-7 (3 ♀♀), 70/2000.8-10 (3 juv. ♂♂), between Karakurt and Kağızman, 30.05.2000.

For counts and measurements see table 8.

Dorsum yellowish brown. The specks on head and neck are well visible in juveniles, pale or no longer present in adults. Ventral side yellowish white without spots. Caught under stones in herbaceous vegetation among rocks.

Table 8 (part 2): The counts and measurements of 23 specimens of *Eirenis modestus* (MARTIN, 1838). (l-r) - left side - right side.

Tab. 8 (Teil 2): Zähl- und Meßdaten von 23 Exemplaren *Eirenis modestus* (MARTIN, 1838). SVL - Kopfrumpflänge, TL - Schwanzlänge, (l-r) - linke Seite-rechte Seite.

Specimen No Exemplar Nr.	Sublabials (l-r) Sublabialia (l-r)	Longitudinal Scale Rows Schuppenlängsreihen	Ventrals Ventralia	Subcaudals Subcaudalia	Gulars Gularia	SVL (mm)	TL (mm)
70/2000.1	8-8	17	177	72	6	445	133
70/2000.2	8-8	17	175	69	5	490	146
70/2000.3	8-8	17	176	69	6	475	144
70/2000.4	8-8	17	177	74	5	385	121
70/2000.5	8-8	19	190	59	6	385	91
70/2000.6	8-8	17	189	59	7	390	90
70/2000.7	9-9	17	171	63	6	293	76
70/2000.8	8-8	17	177	68	5	175	47
70/2000.9	8-8	17	179	69	7	130	33
178/1999.1	8-8	17	178	71	7	440	129
178/1999.2	9-8	17	181	73	6	450	133
178/1999.3	9-8	17	176	62	5	420	-
178/1999.4	8-8	18	173	70	4	335	100
178/1999.5	8-8	17	178	72	7	315	95
178/1999.6	8-9	17	189	56	6	420	94
178/1999.7	8-8	19	185	58	4	379	89
178/1999.8	8-8	17	179	70	5	184	48
192/1999.1	8-8	17	179	70	5	404	118
192/1999.2	8-8	17	188	60	6	445	103
192/1999.3	8-8	17	191	56	4	400	89
192/1999.4	8-8	17	186	62	6	172	39
192/1999.5	8-8	17	178	70	6	159	41
192/1999.6	8-8	17	183	63	6	152	36
$\bar{x}$	8.13-8.09	17.2	180.7	65.9	5.6	341.0	90.7

Literature: SCHMIDTLER & EISELT (1991); SCHMIDTLER & BARAN (1993).

Eirenis punctatolineatus
(BOETTGER, 1892)

Material: 80/2000.1 (1 ♂), 80/2000.2 (1 juv. ♂), 57 km SW Kağızman, 1100 m a.s.l., 01.06.2000.

Preoculars and loreals 1/1; postoculars 2/2; supralabials 7/7; sublabials 8/8 and 9/9; 17 longitudinal dorsal scale rows between ventrals 75 and 85; ventrals 158 and 161; subcaudals 78 and 74. In the adult male SVL 305 mm, TL 112 mm.

Dorsum bright brown with black ocelli forming continuous lines at the posterior half of the body. Bands over head and neck well visible in the juvenile, indistinct in the adult. Ventral side yellowish white whiteout spots.

Caught under stones in herbaceous vegetation among rocks.

Literature: FRANZEN & SIGG (1989).

Coronella austriaca
LAURENTI, 1768

Material: 189/1999.1 (1 ♀), 27 km SW Selim, 2075 m a.s.l., 23.06.1999.

Nineteen longitudinal dorsal scale rows; 201 ventrals. The other features were typical of *C. austriaca* (BARAN 1976; BAŞOĞLU & BARAN 1980; BARAN & ATATÜR 1998). SVL 465 mm, tail not intact.

Caught under stones on a rocky meadow with sparse tree stands.

Literature: BODENHEIMER (1944); BARAN 1976; BAŞOĞLU & BARAN (1980); BARAN & ATATÜR (1998); ENGELMANN (1993).

Natrix natrix persa
(PALLAS, 1814)

Material: 198/1999.1 (1 subad. ♂), 9 km SE Ardahan, 2025 m a.s.l., 24.06.1999.

Preoculars 1/1; postoculars 3/3; supralabials 7/7; 19 longitudinal dorsal scale rows;



Fig. 4: *Vipera wagneri* NILSON & ANDREN, 1984 caught in the rocky and stony hills between Karakurt and Kağızman.
Abb. 4: *Vipera wagneri* NILSON & ANDREN, 1984 aus den felsig-steinigen Hügeln zwischen Karakurt und Kağızman.

171 ventrals; 73 subcaudals. SVL 305 mm, TL 88 mm.

Dorsum blackish brown with spots on the body sides forming dotted lines. Ventral side of head and neck yellowish white, with increasing number of black spots towards the posterior end of the body which is totally black. Caught near a stream under stones on a meadow with sparse tree vegetation.

Literature: BARAN (1976), BAŞOĞLU & BARAN (1980), BARAN & ATATÜR (1998), KABISCH (1999).

Natrix tessellata
(LAURENTI, 1768)

Material: 81/2000.1-2 (2 juv. ♂♂), 57 km SW Kağızman, 1100 m a.s.l., 01.06.2000.

3/3 preoculars; 4/4 postoculars; 8/8 supralabials, 19 longitudinal dorsal scale rows; 169 and 177 ventrals; 62 and 62 subcaudals. SVL of the longer specimen 205 mm. Caught under stones near a stream.

Literature: BARAN (1976), BAŞOĞLU & BARAN (1980), BARAN & ATATÜR (1998), GRUSCHWITZ et al. (1999).

Vipera wagneri
NILSON & ANDREN, 1984

Material: 79/2000.1-2 (2 ♀♀), 12 km SE Karakurt, 01.06.2000.

Supraoculars not keeled; 12-13 scutes surrounding eyes; 2 apicals; 2 canthals; 7/7 and 8/8 supralabials; 12/12 and 11/12 sublabials; 23 longitudinal dorsal scale rows at midbody; ventrals 162 and 165; subcaudals 27. In the bigger female SVL 580 mm, TL 56 mm.

Dorsum brown, bearing big ocellar spots with reddish or yellowish brown centre and dark periphery. In the middle of the body, ocellae unsymmetrical, forming a kind of zigzag band. Dark temporal stripes well developed; dark spots on the body sides (fig. 4). Ventral side of head yellowish white, few or many black dots in the ventral neck and abdominal regions. The specimens were caught in a rocky biotope with herbaceous vegetation and sparse bushes between 10.00 and 12.00 during a sunny period of a rainy day after a rainy night.

Literature: BARAN (1976), BAŞOĞLU & BARAN (1980), BARAN & ATATÜR (1998).

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AUTHORS: İbrahim BARAN & Yusuf KUMLUTAŞ, Çetin ILGAZ, Dokuz Eylül University, Buca Education Faculty, Department of Biology, Buca / İzmir, Turkey; C. Varol TOK, Çanakkale Onsekiz Mart University, Faculty of Arts and Science, Department of Biology, Çanakkale, Turkey; Yakup KASKA, Pamukkale University, Faculty of Arts and Science, Department of Biology, Denizli, Turkey; KURTULUŞ OLGUN & Oguz TÜRKOZAN, Adnan Menderes University, Faculty of Arts and Science, Department of Biology, Aydın, Turkey; Fatma İRET, Ege University, Faculty of Science, Department of Biology, Bornova / İzmir, Turkey. <ibrahim.baran@deu.edu.tr>

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