

The Herpetofauna of the Vicinity of Silifke

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Abstract: The number of herpetological studies about specific regions of Turkey are very limited compared to general herpetological studies. In an attempt to help fill this gap, a total of 89 specimens representing 11 reptile species were collected, for the first time, from two different localities in the vicinity of Silifke, and they were evaluated from the taxonomical point of view.

Key Words: Herpetofauna, amphibians, reptiles, Silifke

Silifke Civarının Herpetofaunası

Özet: Türkiye genel herpetolojisi hakkındaki çalışmalara karşılık geniş ülkemizin belirli bölgelerine ait herpetolojik çalışmalar oldukça azdır. Söz konusu eksikliği gidermek amacıyla Silifke civarında iki ayrı lokaliteden ilk olarak toplam 11 sürüngen türüne ait 89 örnek toplanarak bunların taksonomik değerlendirilmesi yapılmıştır. Böylece bölge ile ilgili eksik herpetolojik bilgilerin tamamlanmasına çalışılmıştır.

Anahtar Sözcükler: Herpetofauna, Amfibi, Reptil, Silifke

Introduction

General information about Herpetofauna of Turkey has been provided by local and foreign researchers since 1842 (1-17). However, no detailed information has been given for specific regions. The number of studies on the amphibians and reptiles of Uzuncaburç and Balandız (Gümüşlü), which are located in the Taurus region, in the vicinity of Silifke, are very limited, and therefore the herpetological information about this region is not at the required level.

Two French tourists reported that they caught 4 Baran's Vipers, *Vipera barani*, from the Silifke Taurus region in 1995. Therefore, our survey was carried out in order to find new samples of this species and to add more information on the herpetofauna of this region by presenting comparative analysis of morphometric

measurements and other typical characters of the specimens collected.

Materials and Methods

The localities where specimens were collected are shown in Figure. We surveyed the study area on different dates, and a total of 89 specimens belonging to 11 reptilian species were collected. The coloration of the live specimens were determined by eye, slides were taken, and then the specimens were fixed with the traditional processes. The specimens were marked with ZDEU (Zoology Department, Ege University) collection codes and are kept in the zoology lab of the Department of Biology at Buca Education Faculty. Each sample has an ID tag where the ZDEU code, sex of the specimen, locality of

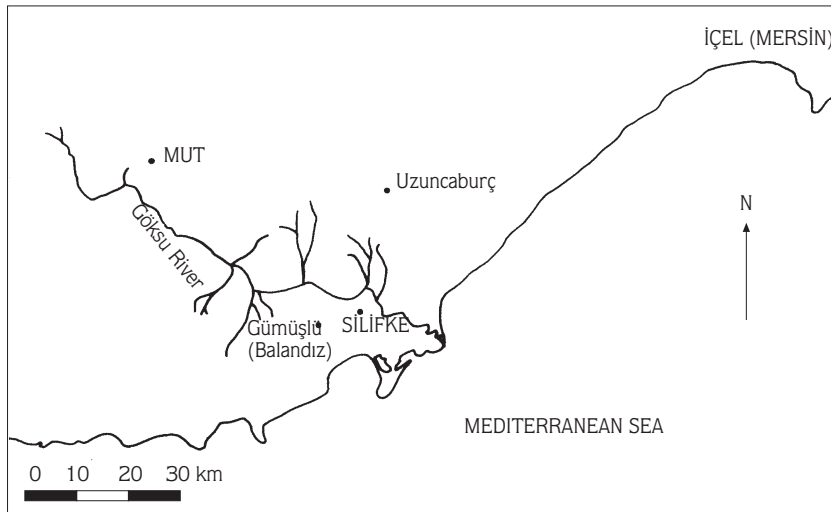


Figure. The localities in which specimens were collected.

collection and the date, along with the surname (e.g., Baran) of the collector are written, in this order. Since the surnames of the collectors were the same for each species, they are not repeated for each species in this paper.

The morphometric measurements, coloration, pattern and pholidosis features were recorded for each specimen. Body and tail lengths were measured with a dial caliper with an accuracy of 0.05 mm. The body measurements for each species are given under that species' heading.

Coloration and Pattern: All the features related to coloration and pattern for each species are included in this category.

Pholidosis Features: This category all features related to the number, structure and range of plates and scales which cover the bodies of lizard and snake species. Detailed information on these features is given elsewhere (17).

In this introductory study of herpetofauna, 89 specimens belonging to amphibian and reptilian species were examined and their taxonomic evaluations were given as follows for each species.

Results

Cyrtopodion kotschy (STEINDACHNER, 1870)

Sample: 2 ♂♂, 1 ♂ s.ad., 1 ♂ juv., 4 ♀♀

ZDEU 91/ 1995. 1 ♂ s.ad., 2 ♂ juv., 3-4 ♀♀
Balandız, Silifke, 10.05.1995., ZDEU 92/1995. 1-2 ♂♂, 3-4 ♀♀ Uzuncaburç, Silifke, 09.05.1999.

Specimens collected from two different localities were found to be similar to the subspecies *C. kotschy ciliciensis* examined by Baran and Gruber in 1982 (18) according to the taxonomical characters, but the inter-nasal plates were 4 in two specimens while one specimen had only two visible post-anal tubercles. The number of fourth sub-digital lamellae on the right forelimb varied from 14 to 16 with a mean of 14.75. Although four females were collected during our surveys, none of them had pre-anal holes. Our specimens should be compared with other specimens that will be collected from other localities in this region because of this interesting situation. The body length of 2 undamaged female specimens was 70 mm, and 41 mm in one juvenile specimen.

Laudakia stellio (LINNAEUS, 1758)

Sample: 1 ♀, 1 juv.

ZDEU 89/1995. 1 ♀, 2 juv. Uzuncaburç, Silifke, 08.05.1995.

These specimens were similar to the subspecies *L. stellio stellio* according to the taxonomical properties, since the number of third sub-digital lamellae on the forelimb was 16 in both specimens. On the other hand, the number of fourth sub-digital lamellae on the hindlimb was between 17 and 20. The specimens examined in this study were also similar to the above mentioned subspecies in terms of coloration and pattern characteristics.

Lacerta danfordi (GUNTHER, 1876)

Sample: 3 ♂♂, 3 ♀♀

ZDEU 86/1995. 1-3 ♂♂, 4-6 ♀♀ Uzuncaburç, Silifke, 09.05.1995.

The important taxonomical properties, including body measurements, of the 3 male and 3 female specimens examined in this study were found to be not remarkably different from the subspecies *L. danfordi pelasgiana*. The number of scales at the middle of dorsum varied from 53 to 63 with a mean of 57.83; the number of femoral pores was 19-22 (mean: 20.50); the mean number of fourth sub-digital lamellae on the hind limb was 27.17, ranging between 25 and 29. The total body length of specimens varied from 159.85 to 217.10 mm. The specimens examined in this study were also similar to the above mentioned subspecies in terms of coloration and pattern characteristics.

The *L. danfordi* populations were divided into new subspecies by the work of Eiselt and Schmidler in 1986 (16), but these subspecies were reported to be uncertain by Baran and Atatür (17) in 1998 and by Baran and Kumlutaş (20) in 1999. Therefore, in the present paper, the classification of this species is accepted as specified by Budak (19) in 1976.

***Ophisops elegans* MENETRIES, 1832**

Sample: 1 ♂, 4 ♀♀

ZDEU 82/1995. 1 ♂, 2-5 ♀♀ Uzuncaburç, Silifke, 08.05.1995.

These examined specimens were remarkably different, in terms of pholidosis properties, coloration and pattern, from *O. elegans basoglui*, which is distributed in the southern regions of Anatolia, and from *O. elegans centralanatoliae*, which is distributed in the middle part of Anatolia. It was very difficult to decide from our sample whether this difference may lead to a separation at subspecies level or not. It will be possible to determine this point only by further investigation of new materials and by utilising different techniques.

The number of scales at the middle of dorsum varied from 29 to 32, with a mean of 30.80, and the number of femoral pores was 10-13 (mean: 11.20); the number of fourth sub-digital lamellae on the hind limb varied between 23 and 25 (mean: 24.20). These specimens did not have any evident difference from the subspecies *O. elegans basoglui*, distributed on the Mediterranean coasts, according to other pholidosis properties. The total body length of the four undamaged specimens varied

between 121.0 and 151.7 mm. The specimens collected from Uzuncaburç showed visible differences from the subspecies *O. elegans basoglui* in terms of the coloration of the ventral part of the head and neck. We thought that it would be better to compare this new population, on the basis of the aforementioned coloration, with subspecies *O. elegans basoglui*. We have learnt that such a study is being conducted by researchers at Ege University.

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

Sample: 2 ♂♂, 1 ♀

ZDEU 85/1995. 1-2 ♂♂, 3 ♀♀, Balandız, Silifke, 10.05.1995.

The number of scales at the middle part of body was either 29 or 30, with a mean of 29.67; the mean number of fourth sub-digital lamellae was 16.33 (min., 16, max., 17). The body length of specimens varied between 156.0 and 183.95 mm. Our two male specimens and one female specimen were similar to the subspecies *C. ocellatus ocellatus* on the basis of taxonomical properties, coloration and pattern.

***Mabuya vittata* (OLIVER, 1804)**

Sample: 8 ♂♂, 3 ♀♀, 3 s. ad.

ZDEU 83/ 1995 ♂ Balandız, Silifke, 10.05.1995., ZDEU 84/1995 1-7 ♂♂, 8-10 ♀♀, 11-13, s. ad. Uzuncaburç, Silifke, 09.05.1995.

Our 14 specimens did not show any remarkable difference from *Mabuya vittata* with regard to important taxonomical features. The mean number of scales at the middle part of body was 30.86 (min., 30, max., 32) and the mean number of fourth sub-digital lamellae was 16.79 (min., 16, max., 18). The body lengths of 6 undamaged specimens were found to range from 151.4 to 191.5 mm. These specimens also showed similarity to the species mentioned above with regard to coloration and pattern properties.

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

Sample: 41 ♂♂ + ♀♀

ZDEU 87/1995. 1-28 ♂♂ + ♀♀, Uzuncaburç, Silifke, 09.05.1995., ZDEU 88/1995. 1-13 ♂♂ + ♀♀, Balandız, Silifke, 10.05.1995.

The large number of specimens examined in this group were similar in taxonomical properties to the subspecies *B. strauchi aporus*. The number of body scales arranged in rings ranged from 98 to 105, with a

mean of 101.44. The mean number of scales at the middle part of body was 17.07 (min., 16, max., 19). The number of temporal plates was between 16 and 22 (mean: 18.95), and the number of scales arranged in rings on the tail was between 16 and 22 (mean: 18.95). These specimens did not show any difference from subspecies *B. trauchi aporus* from the stand of coloration and pattern characteristics. The total body length of specimens examined in this study varied between 105 and 245 mm.

***Typhlops vermicularis* MERREM, 1820**

Sample: 2

ZDEU 90/1995. Uzuncaburç, Silifke, 08.05.1995, ZDEU 94/1995. Balandız, Silifke, 10.05.1995.

Two specimens typically showed a similarity to *Typhlops vermicularis*. The number of scales at the middle part of the body was 24 in both specimens. The total length of the body ranged from 197 to 244 mm. It was not possible to determine any significant difference from the above mentioned species.

***Coluber jugularis* LINNAEUS, 1758**

Sample: 3 ♂♂ juv.

ZDEU 95/1995. 1-3 ♂♂ juv. Uzuncaburç, Silifke, 08.05.1995.

The numbers of ventralia were 2+197, 1+192, 1+198, and the numbers of subcaudalia were 109, 112 and 117 for each specimen respectively. The number of scales at the middle part of body was 19. The total length of the biggest specimen was 370 mm. The pholidosis properties of our 3 juvenile specimens showed a general similarity to *C. jugularis*. It was also found that our material did not show any clear difference from the juvenile of *C. jugularis* according to coloration and pattern.

***Eirenis modestus* (MARTIN, 1838)**

Sample: 1 ♂, 1 ♂ juv., 2 ♀♀

ZDEU 97/1995. 1 ♂ juv., 2 ♀ Uzuncaburç, Silifke, 08.05.1995., ZDEU 93/1995. 1 ♂, 2 ♀ Balandız, Silifke, 10.05.1995.

The pholidosis features of 2 male and 2 female specimens collected from the vicinity of Silifke were within the variation borders of this species (18). The numbers of ventralia were determined to be 1+161 and 2+168 for male specimens, 2+174 and 2+172 for

female specimens; the numbers of sub-caudalia were 71 and 73 in males, 62 and 61 in females. The number of scales in the middle part of body were 17 in all specimens. These specimens did not show any difference from *E. modestus* from the standpoint of coloration and pattern characteristics.

***Natrix tessellata* (LAURENTI, 1768)**

Sample: 1 ♂

ZDEU 96/1995. Uzuncaburç, Silifke, 09.05.1995.

All the properties of the one male specimen showed similarity to *N. tessellata*, since the numbers of praeoculare, postocularia, supralabialia, ventralia and subcaudalia were 3-3, 4-4, 8-8, 1+173 and 75 respectively. The total length of specimen was 316 mm. The coloration and pattern of this specimen did not show any difference from the aforementioned species.

Evaluation

Eighty-nine reptilian specimens were examined from 11 different species collected from the localities at both sides of the Göksu River, around Silifke. The specimens from these two localities were investigated from the standpoint of pholidosis, morphometric measurements, colour and pattern, and were evaluated taxonomically.

At Uzuncaburç, 10 different species were found, not including *Chalcides ocellatus*. On the other hand, only 6 different species were collected in the vicinity of Balandız, but no specimens of *Laudakia stellio*, *Lacerta danfordi*, *Ophisops elegans*, *Coluber jugularis* or *Natrix tessellata* were found due to the short period of collection at this site. However, some of these species are common (*Laudakia stellio*, *Lacerta danfordi*, *Ophisops elegans*, *Natrix tessellata*) and some of them (i.e., *Coluber jugularis*) are only common in the south of Turkey. *Chalcides ocellatus* is less likely to be found in the vicinity of Uzuncaburç because this place is at an altitude of 1200 m and there is no suitable biotope for this species to live there.

The classification of *Ophisops elegans*, which is common all around Turkey, was quite complex in our specimens. This species is represented by four sub-species in Turkey, and we need to compare our specimens with *O. e. basoglui* and *O. e. centralanatoliae* in detail so that we can explain the problem of sub-species of our specimens from this site. We believe our colleagues from

Ege University have undertaken such a study, which will help to solve the taxonomic problem of *Ophisops elegans*.

The taxonomic status of another lizard species, *Lacerta danfordi*, has become more complex in recent years (16). Eiselt and Schmidtler (1987) separated the Turkish population of *Lacerta danfordi* into new species and sub-species, but this was found to be doubtful by Baran and Kumlutaş 1999 (20) and Baran and Atatür 1998 (17). Therefore, these specimens should be

considered *Lacerta danfordi pelasgiana* (19). The complexity of the taxonomic status of *Lacerta danfordi* can only be solved by collecting more specimens and investigating them with different biochemical techniques.

In addition to the general information about the taxonomic status of some species, we believe this work will help to identify the herpetofauna of the vicinity of Silifke, which is not known well enough. In order to determine the biological diversity of Turkey, similar researches on a regional basis should be carried out.

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